

PROJECT MANUAL

SPORTS PLAYING FIELD PROJECT PHASE 1

ERIE COMMUNITY
COLLEGE

6205 MAIN STREET
WILLIAMSVILLE, NY 14221

DATE: NOVEMBER 27, 2024

PROJECT #: 2023-956-01 ECCN Sports Fields
BID DATE: JANUARY 8, 2025



MARK C. POLONCARZ
COUNTY EXECUTIVE

DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER

WILLIAM E. GEARY
COMMISSIONER OF PUBLIC WORKS

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OFFICE OF THE COMMISSIONER**

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COUNTY OF ERIE
NOTICE TO BIDDERS
ERIE COMMUNITY COLLEGE – SPORTS PLAYING FIELD PROJECT PHASE 1
ECDPW PROJECT NO. 2023-956-01 ECCN SPORTS FIELDS

Separate Sealed bids for Site Construction and Electrical Construction work at the above County facility will be received by the County's Commissioner of Public Works in Suite 1400 of the Rath County Office Building, 95 Franklin Street, Buffalo, New York 14202 until 10:00 AM local time on January 8, 2025; at which time they will be opened and read aloud.

The bidding documents, specifications, and drawings may be downloaded from the Erie.gov website <http://www.erie.gov/dpw/>, ON-LINE BID RETRIEVAL, or examined at the following offices:

Erie County Department of Public Works
Office of the Commissioner
Rath County Office Building
95 Franklin Street, Suite 1400
Buffalo, NY 14202

Construction Exchange of Buffalo & WNY
2660 William Street
Cheektowaga, NY 14227
<http://www.conexbuff.com/>

Bids will not be accepted unless the bid package is downloaded directly from www.erie.gov/dpw so that contact information is captured by ECDPW for bid addenda and communication.

A non-mandatory Pre-Bid Conference/Site visit will be held at 10:00 AM on December 4, 2024. Contractors are to convene at the Bell Center, 6205 Main St., Williamsville, NY 14221 to review the scope of the project and respond to questions from the bidders.

Each proposal must be accompanied by a Bid Bond of five percent (5%) of the amount of the bid payable unconditionally to the County of Erie.

The Contractor's attention is drawn to the provisions in the General Conditions establishing a Minority/Women Business Utilization requirement for this project. Contractors are advised that by submitting a signed and sealed bid proposal they are agreeing and committing to the WBE/MBE requirements contained in this project.

The Contractor's attention is further drawn to requirements for Contractor's participation in a New York State Certified Apprenticeship Training Program. **In addition, the Contractor shall be advised that provisions set forth by Erie County Executive Order #18 ("EO #18") may apply.**

Attention of bidders is called to the fact that if a prospective bidder is not registered as a bidder with the Office of the Commissioner of Public Works by virtue of his/her downloading of the bidding documents, then notices of contract addenda or other significant matters related to the contract proposal or bid will not be communicated to said prospective bidder.

The County of Erie reserves the right to reject any or all bids and waive any informality.

WILLIAM E. GEARY
Commissioner of Public Works
Rath County Office Building
95 Franklin Street, Suite 1400
Buffalo, NY 14202

DATED: November 27, 2024

INFORMATION FOR BIDDERS

1. THE PROJECT CONSISTS OF:

- A. Site Construction Work, including but not limited to the scope of work as outlined in Section 011200 Multiple Contract Summary.
- B. Electrical Construction Work, including but not limited to the scope of work as outlined in Section 011200 Multiple Contract Summary.

2. RECEIPT AND OPENING OF PROPOSALS

- A. Sealed bids for the project (separately submitted based on the above type of construction work) will be received by the Department of Public Works, Office of the Commissioner, 14th Floor, Rath County Office Building, 95 Franklin Street, Buffalo NY 14202 until 10:00 AM local time on Wednesday, January 8, 2025, at which time they will be publicly opened and read aloud.

3. ARCHITECT/ENGINEER

- A. For the purpose of this contract, the Architect as defined in the General Conditions, shall be: Wendel WD Architecture, Engineering, Surveying and Landscape Architecture, P.C.

- B. Direct all inquiries concerning these documents to:

Name: Eryn Hopkins, Project Administration

Address: 375 Essjay Road, Suite 200, Williamsville, NY 14221

Phone: (716) 688-0766

Fax: (716) 625-6825

E-Mail: ehopkins@wendelcompanies.com

4. SITE VISITATION / PRE-BID CONFERENCE

- A. A non-mandatory Pre-Bid Conference will be held at 10:00 AM on December 4, 2024 at the Bell Center, 6205 Main St., Williamsville, NY 14221 to review the scope of the project and respond to any questions from bidders.
- B. Prospective Bidders shall assemble promptly on the date indicated at the Bell Center.

5. PREPARATION OF PROPOSALS

- A. Submit proposal on the enclosed form. Enclose in sealed envelope bearing the title of the work and the name of the Bidder. Bidders shall submit all of the following to be considered :
 - 1) Proposal Form, included herein, inclusive of the following:
 - 1) Base Bid Price

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- a) The Base Bid Price is inclusive of any associated allowances for a given Contract within the Project. If allowances are associated with the Project, note that the contractor is to include an overhead and profit markup for the entirety of a Lump-Sum Allowance. See Specification 012100 – Allowances included in the Project Manual for more information.
- 2) Completion Time
- 3) Alternate Pricing (if applicable)
- 4) Unit Pricing (if applicable)
- 5) Substitutions (if applicable)
- 6) Acknowledgement of all Addenda
- 7) Non-Collusive Bidding Certificate
- 8) Company information with Owner Signature
- 9) Apprenticeship Certification (if applicable; see the proposal form and Section 10 of the General Conditions for more information)
- 10) Contractors Own Workforce – See Section 3.18 of the General Conditions for more information
- 11) Equal Pay Certification - See Sections 8.04 and 8.07 of the General Conditions for more information
- 12) Erie County Executive Order #18 Attestation and Statement of Workforce (if applicable; See the proposal form and Section 8.08 of the General Conditions for more information)
- 13) Drug and Alcohol Testing Compliance Form
- 2) Experience Questionnaire conforming to the New York Vendor Responsibility Questionnaire For-Profit Construction (Form CCA-2) as included within the project manual.
 - 1) **NOTE** – Failure to submit the completed Responsibility Questionnaire referenced above with the sealed bid proposal shall render the bid non-responsive and the bid shall not be considered in accordance with Erie County Local Law 2-2021.
 - a) See Appendix D for the fill version of Local Law 2-2021.
 - 2) Form CCA-2 is to be provided with the sealed bid proposal in its entirety, inclusive of Attachments A and B.

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- a) **Attachment C titled 'FINANCIAL INFORMATION' will only be required to be provided by the awarded contractor, prior to final contract execution, at the request of the County.** Failure to project Attachment C at the request of the County may result in termination or cancelled execution of the contract associated with a given Project.
- 3) If the contractor is already enrolled in the New York State's VendRep system, the contractor is permitted to print out their packet from the State's system, in its entirety inclusive of Attachments A and B, to provide within their respective sealed bid proposal submission.
- 4) All documents related to the CCA-2 Questionnaire can be found in the front end of the project manual and can also be found at the link below

<https://www.osc.state.ny.us/state-vendors/vendrep/profit-construction-questionnaire-cca-2>
- 3) Erie County Minority/Women Business Enterprise & Service-Disabled Veteran Owned Business Utilization Report – Part A included herein (if applicable; See the proposal form and Section 8.06 of the General Conditions for more information).
- 4) Bid Bond in an amount not less than five percent (5%) of the base bid.
- B. In case of a difference between the stipulated amount of the proposal written in words and the stipulated amount written in figures, the stipulated amount stated in written words shall govern.
- C. Proposals shall not contain any recapitulations of the work to be done. Alternate proposals will not be considered unless called for. Oral proposals or modifications will not be considered.
- D. Any Bidder may withdraw their proposal, either personally or by fax or written request, at any time prior to the scheduled closing time for receipt of proposals.
- E. All proposal forms submitted by a bidder requiring a bidder's signature must bear an original signature signed in ink. Proposals submitted without original signatures will be rejected.

6. AWARD OR REJECTION

- A. The Contract for each phase of the work will be awarded to the lowest qualified responsible Bidder. The Owner reserves the right to reject any or all proposals or to waive any informality. All proposals shall be good for 90 days from date of opening.
 - 1) For the purposes of bidding and planning when the work can begin, the Notice To Proceed can expect to be issued within 90 days of the bid opening and therefore all work specified within a given contract shall be planned accordingly by the lowest responsible bidder to commence without delay or extra compensation from the County within that timeframe. Once the Notice To Proceed is issued, the contractor is responsible for completing the work within the specified completion time on the bid proposal by the contractor, unless otherwise approved by the County.

- B. For the purpose of determining the lowest responsible bidder, the County shall compare all base bids plus any add or any deduct Alternate Bid items. Unit prices set forth in the proposal shall not be considered in determining the lowest responsible bidder.
- C. The County reserves the right to accept or reject any and all Alternate Bid Items in any order. The low-bidder will be determined based on the base scope of work and the alternates selected by the Owner, if applicable.
- D. The County reserves the right to deem a contractor "Non-responsible" in accordance with Erie County Local Law No. 2-2021

7. INTERPRETATION OF DOCUMENTS

- A. If any person contemplating submitting a proposal is in doubt as to the true meaning of any part of the Drawings, Specifications or other Contract Documents, or finds discrepancies in or omissions from the Drawings or Specifications, he may submit to the Architect - Engineer a written request for an interpretation or correction thereof. The person submitting the request will be responsible for its prompt delivery. Any interpretation or correction of the documents will be made only by Addendum duly issued and a copy of the Addendum will be forwarded to each person receiving a set of the Contract Documents. Neither the Owner nor the Architect - Engineer will be responsible for any other explanations or interpretations of the Contract Documents.

8. ADDENDA

- A. Any Addenda issued during the time of bidding shall be covered in the proposal, and shall be made a part of the Contract Documents. Receipt of each Addendum shall be acknowledged in the proposal.
- B. A final addendum will be issued no later than Friday, December 20, 2024. Requests for interpretation or correction (RFI) shall be submitted to the Architect no later than 5:00 PM on Monday, December 16, 2024.

9. BID BOND

- A. Each proposal must be accompanied by a Bid Bond in form similar to American Institute of Architects Document No. A-310 in an amount not less than five percent (5%) of the base bid.
- B. Should the Bidder, if awarded the Contract, fail to execute the Agreement within five (5) days in accordance with the proposal and other Contract Documents the Bid Bond amount shall be forfeited to the Owner as liquidated damages caused by such failures.

10. PERFORMANCE AND LABOR AND MATERIAL PAYMENT BOND

- A. The bidder or bidders whose proposal is accepted shall furnish a Performance and Labor and Materials Payment Bond to the County of Erie in the penal amount of 100% of the contract price, if the contract is based upon a time and material price, or 100% of the estimated cost if the contract is based upon a unit price, such bond to be duly executed by the bidder as principal and by a duly incorporated company authorized to guarantee the performance of contracts and to do business in the State of New York, as surety. The Bond shall be on a form approved by the County Attorney, a copy of which is included herein.

11. QUALIFICATIONS OF BIDDERS

- A. The Bidder shall submit all documents as described in Section 5 above.
- B. All prospective bidders are hereby notified that they must be able to prove to the satisfaction of the Owner that they are a responsible bidder and have the skill and experience, as well as the necessary facilities, ample financial resources, organization and general reliability to do the work to be performed under the provisions of the contract in a satisfactory manner and within the time specified.
- C. At the request of the Owner, within forty-eight hours (48) after the opening of the proposals, the lowest three bidders, if requested, must submit, in duplicate, to the Owner a current financial statement certified to be true and correct by a certified public accountant or an officer or principal of the bidder.
- D. Each bidder must be prepared to show to the satisfaction of the Owner that he has sufficient liquid assets available for the project upon which he is bidding. The Owner does not regard credit, borrowed money, equity in real estate, life insurance, reserves representing pre-payment of taxes and life insurance, and other expenses, deposits held as security for other contracts, capital of proposed sub-contractors, capital stock of the contractor, and similar items, as liquid assets available for the work to be performed under the contract.
- E. A bidder must also be prepared to prove to the satisfaction of the Owner that he has successfully completed a contract of similar work in an amount of not less than 25 percent of the amount of the proposed contract.
- F. Each bidder must comply promptly with all requests by the Owner for information and must actively cooperate with the Owner in its efforts to determine whether the bidder is qualified.
- G. The award of the contract shall not be construed as a guarantee by the Owner that the plant, equipment and the general scheme of operations and other data submitted by the bidder with or after their proposal is either adequate or suitable for the satisfactory performance of the work.

12. ACKNOWLEDGEMENTS

- A. All acknowledgements of Contractor and Owner, Principal and Surety shall be subject to the approval of the Erie County Attorney, State of New York.

13. EQUIVALENT MATERIAL OR EQUIPMENT

- A. Whenever a specific material or equipment item is named in the plans or specifications, the Contractor shall furnish the material or equipment thus named, unless: (1) in the Bid, the contractor names another item which he proposes as the full equivalent of the named item, and in executing the Contract the Owner accepts such substitution; or (2) the Owner subsequently approves a substitution during the course of project construction by Change Order.

14. LIST OF PROPOSED SUBCONTRACTORS

- A. The low bidder, or three low bidders if requested, shall submit a complete list of sub-contractors he proposes to use not later than 48 hours after receipt of bid proposals.

- B. Sub-contractor list shall be delivered to the Architect with a copy for the Owner.
- C. Execution of the Contract by the Owner without objection to any name on said list shall constitute an acceptance of the same. Should the Owner request that a different sub-contractor be proposed for any phase of the work, the bidder shall comply with such requests until a sub-contractor acceptable to the Owner is proposed. No sub-contractor approved by the Owner may be replaced unless replacement is approved by the Owner.

15. NON-COLLUSIVE BIDDING CERTIFICATE

- A. Attention of all bidders is called to provisions of State Law requiring the bid itself to contain a certificate that there has been no collusion in the preparation or submittal of such bid. (See pertinent portion of Proposal Form.)

16. SALES TAX EXEMPTION

- A. The Owner is an exempt organization under the Tax Law and is exempt from payment of Sales and Compensating Use Taxes of the State of New York and cities and counties of the State on all materials sold to the Owner pursuant to the provisions of the Contract. These taxes are not to be included in bids.
 - 1. Section 115 (a) (15) of the Tax Law provides that tangible personal property sold to a Contractor for use in erecting a structure or building for an exempt organization is exempt from the Sales and Compensating Use Tax of the State of New York and of cities and counties of the State provided such tangible personal property is to become an integral component part of such structure, building, or real property.
 - 2. There is no exemption from the Sales or Use Tax on sales or charges to a Contractor or sub-contractor for the purchase or lease of supplies, machinery, equipment, tools, services, etc., used or consumed in the completion of the Contract. The Contractor and its sub-contractors shall be responsible for and pay any and all applicable taxes including Sales and Compensating Use Taxes on such items.

17. BIDDING DOCUMENTS

- A. Drawings, Specifications and other Bidding Documents must be downloaded from the Erie.gov website <http://www.erie.gov/dpw/>, 'Bids, RFPs, RFQs' then select 'Bid Documents', unless stated otherwise in the Notice to Bidders. Electronic pdf files of the Bid Documents will be available for each Prime Contract Bidder for purposes of preparing a bona fide Proposal.

18. EXISTING CONDITIONS

- A. It shall be the responsibility of each and every bidder to thoroughly investigate all existing conditions and he shall acquaint themselves with existing conditions, insofar as it may affect their work and/or bidding.

- B. The Bidder, before submitting a proposal, shall satisfy themselves fully as to the work called for on the Contract Documents, and to the working conditions and condition of the site, including the existence of other facilities and/or structures on, over or under the site which may interfere with, or make more difficult, the performance of the Contract.
- C. The signature of the Bidder upon the proposal form shall constitute a certification to the Owner that such Bidder is fully informed regarding all the conditions affecting the work to be done, that such information was secured by personal investigation and that such Bidder accepts full responsibility for their bid.
- D. If a Bidder should encounter any condition not provided for in the Contract Documents that will affect their bid or the performance of their contract obligations, should he be the successful bidder, he shall notify the Architect, in writing, at least five (5) days prior to opening of bids.

19. WAGE RATES

- A. It is hereby agreed by the parties to this contract that all laborers, workmen and mechanics employed on the work done in performance of said contract shall be paid not less than the rate of wages listed on the current prevailing rate schedule issued by the New York State Department of Labor for the trade or occupation of such laborer, workmen, or mechanics, and any supplements thereto.
- B. The wage rates and supplemental benefits to be paid such laborer, workmen or mechanics shall always be those prevailing at the time the work is being performed.
- C. A copy of the current "Prevailing Rate Schedule" is attached hereto for convenience. The wage rates and supplemental benefits listed thereon are subject to change and may be superseded by any schedule hereafter issued by the New York State Department of Labor. Any such revised schedules shall be attached hereto and become a part of this contract, but this will in no way alter the contract amount or any provisions of said contract.
- D. It is the responsibility of the Contractor to remain familiar with the currently applicable schedule.
- E. Should the Contractor employ laborers, workmen or mechanics engaged in any trade for which a wage rate is not stipulated in the attached schedule, or any supplements thereto, he shall obtain the appropriate wage rate from the New York State Department of Labor before employing the laborer, workman or mechanic.
- F. Section 220-a of the New York State Labor Law requires the Contractor and each of its sub-contractors to place on file with the Owner, certificates relating to the final payment of wages and supplements for Labors on this Project. Samples of the required certificates immediately follow this section and are designated as PICC-1 (Sub-contractor Certification) and PICC-2 (Prime Contractor Certification, pages 1 & 2). The Contractor and each of its sub-contractors acknowledge that no final payment can be made to the Contractor unless the necessary certifications, properly executed, accompany the final payment request.
- G. If a Contractor or sub-contractor has had one final determination by the New York State Department of Labor that it willfully failed to pay or provide the prevailing rate of wages or supplements to its employees, the contractor or sub-contractor will be ineligible to tender a bid.

20. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)

- A. It is the contractor responsibility to submit proof of OSHA 10 certification for all employees performing work on a job site associated with the Project. OSHA 10 certification can be submitted through the LCPtracker software system.

21. DRUG & ALCOHOL TESTING PROGRAM COMPLIANCE

- A. Due to the safety-sensitive nature of the work that Commercial Driver Licensed (CDL) employees may perform on this project, the low bidder, if requested, shall submit acknowledgment of Drug and Alcohol Testing Compliance Form DA-1 included herein within three (3) days after receipt of proposals.

END OF SECTION (see attachment)

ATTACHEMENT

1. Erie County Local Law 2-2021 – MWBE Goals
2. Erie County Local Law 3-2023 – SDVOB Goals

Local Law Filing

(Use this form to file a local law with the Secretary of State.)

Text of law should be given as amended. Do not include matter being eliminated and do not use italics or underlining to indicate new matter.

☒ County ☐ City ☐ Town ☐ Village
(Select one.)
of Erie

Local Law No. 2 of the year 2021

A local law updating and reforming Erie County's Requirements for
(Insert Title)
Lowest Responsible Bidding on County Construction Projects and
Repealing and Replacing Local Law 1-2009 in its entirety.

Be it enacted by the Erie County Legislature of the
(Name of Legislative Body)

☒ County ☐ City ☐ Town ☐ Village
(Select one.)
of Erie as follows:

Section 1. Legislative Intent.

The Erie County Legislature hereby finds, declares and determines that:

A. New York General Municipal Law Section 103 requires that all contracts entered into by the County of Erie for public work involving an expenditure of more than thirty-five thousand dollars (\$35,000) shall be awarded to the lowest responsible bidder.

B. Taxpayers have a strong interest in an effective screening process to ensure that appropriate contractors be awarded public works contracts. A thorough evaluation process ensures that the taxpayers get a proper return on their investment and that qualified contractors are awarded bids.

(If additional space is needed, attach pages the same size as this sheet, and number each.)

C. General Municipal Law § 103(15)(a) recognizes the need for this process and provides that municipalities, such as the County of Erie, may establish guidelines governing the qualifications of bidders seeking to bid or enter into such contracts.

D. By enacting this Local Law, the County of Erie seeks to establish such guidelines in order to assure the prudent and economical use of public moneys for the benefit of all the inhabitants of the County.

Section 2. Short Title.

This Local Law shall be known as “the Erie County Lowest Responsible Bidder Law”.

Section 3. Applicability.

This Local Law shall apply to County of Erie construction projects, defined herein, in excess of \$35,000 and advertised for bids on or after the effective date of this Local Law.

Section 4. Definitions.

A. “The County of Erie” or “County” as used herein shall include the political subdivision known as the County of Erie as well as those County Departments responsible for letting public works contracts.

B. “Bidder” or “bidders” as used herein shall include individuals, companies, partnerships or other entities that respond to requests for bids issued by the County of Erie.

C. “Construction Projects” as used herein shall mean projects with a value in excess of \$35,000 where the County of Erie is a direct or indirect party to the contract which includes more than an incidental amount of construction type activity intended to benefit the public, including all work which is necessary, incidental or connected with the execution of the contract which is performed by construction workers. A public entity need not be party to the construction contract. A construction contract includes: projects that the County of Erie funds directly, projects that the County of Erie funds indirectly by providing funds to a separate entity to perform the construction type activity; privately financed construction projects specifically built with the intent of leasing them to any Department of the County of Erie government; and construction projects built under the County of Erie’s direction and later paid for with County of Erie funds.

D. “Commissioner” as used herein shall mean the Commissioner of the County of Erie Department that is requesting bids and/or his or her designee.

E. “Responsible” or “responsibility” as used herein means the financial ability, legal capacity, integrity, past performance of a business entity and compliance with applicable laws and regulations and as such terms have been interpreted relative to public procurements.

F. "Responsive" as used herein means a bidder meeting the minimum specifications or requirements as prescribed in the request for bids.

G. "Responsibility Questionnaire" shall mean the current the New York Vendor Responsibility Questionnaire For-Profit Construction (CCA-2), as maintained by the New York Office of the State Comptroller, and as may be amended from time to time, which requires all bidders to answer questions demonstrating their financial ability, legal capacity, integrity, past performance on municipal contracts and compliance with applicable laws and regulations. Such Questionnaire shall be affirmed by a principal of the bidder.

Section 5. Requirements.

A. By submitting bids in response to solicitations from the County of Erie, all bidders and sub-bidders (including sub-sub bidders) for construction projects funded by the County of Erie, acknowledge the terms and conditions of this Local Law and agree that they shall comply with the obligations of this Local Law.

B. In addition to the bid response, all bidders shall complete and submit a Responsibility Questionnaire as defined in Section 4 so that the County can evaluate the financial responsibility and organizational capacity of the bidder; the bidder's legal authority to do business in this County and State; the integrity of the owners, officers, principals, members and contract managers and the past performance of the bidder on prior municipal or public contracts. The completed Responsibility Questionnaire must be submitted with the bid.

C. Failure to submit the completed Responsibility Questionnaire with the bid documents shall render the bid non-responsive and the bid shall not be considered by the Commissioner.

Section 6. Procedure.

A. Bids for construction projects to which this Local Law applies shall be advertised in accordance with the requirements of the General Municipal Law and other applicable State and Local Laws. Such advertisement shall set forth the request for bids and shall set forth the deadline for submission and the time and place of the public opening of the bids.

B. The Commissioner, or his or her designee, shall distribute to all bidders a copy of this Local Law and the Responsibility Questionnaire referenced above. Distribution of the aforementioned documents shall be deemed effectuated when delivered in the same manner as the request for bids and any associated documents. The submission of a bid shall establish that the bidder received all necessary documents, including but not limited to, the Responsibility Questionnaire.

C. Only Bids accompanied by the Responsibility Questionnaire and all other necessary documentation will be considered by the Commissioner and or his or her designee.

D. All bids received shall be publicly opened and read at the time and place so specified in the advertisement for bids and the identity of all bidders shall be publicly disclosed at the time and place so specified. The apparent lowest bidder shall be announced at that time.

E. Commencing on the date of the bid opening and lasting for ten (10) calendar days thereafter, there shall be a public comment period during which members of the public may submit information relative to any such bidder to the Commissioner. The Commissioner shall acknowledge receipt of such information, and provide a written response prior to the final determination of bidder responsibility.

F. After review of the bid documents, the information collected pursuant to this and other Local Laws, New York State Law, applicable rules and regulations, consideration of the information provided in the Responsibility Questionnaire and of the financial ability, legal capacity, integrity, past performance of the bidder and compliance with applicable laws and regulations, the Commissioner shall determine if the apparent lowest bidder is responsible.

H. If the amount of the lowest responsible bidder appears disproportionately low when compared with estimates undertaken by or on behalf of the County of Erie, and/or compared to other bids submitted (10% or greater disparity), the County reserves the right to inquire further of the apparent lowest bidder to determine whether the bid contains mathematical errors, omissions and/or erroneous assumptions, and whether the apparent lowest bidder has the capability to perform and complete the contract for the bid amount.

I. If the apparent lowest bidder is deemed responsible by the Commissioner, such low bidder will be notified, as soon as is practicable.

J. At least five (5) business days prior to the award of the contract to the low bidder, the Commissioner shall post on the Erie County Website a listing of the three apparent lowest bidders for the work.

Section 7. Non-Responsibility Determination.

A. If, after review of the bid documents, the information collected pursuant to this and other Local Laws, New York State Law, applicable rules and regulations, consideration of the information provided in the Responsibility Questionnaire and of the financial ability, legal capacity, integrity, past performance of the bidder and compliance with applicable laws and regulations, the Commissioner makes a provisional determination that the apparent lowest bidder is deemed not to be responsible, the provisions of subdivisions C-E herein shall apply.

B. In the event the bidder is found to have falsified information on a submitted Responsibility Questionnaire or if the bidder fails to properly disclose information that would call into question the financial ability, legal capacity, integrity, or past performance of the business entity, the Commissioner shall make a provisional determination that the bidder is not responsible subject to the provisions of subdivisions C-E herein.

C. Not less than five (5) business days prior to any final determination that the apparent lowest bidder is not responsible, the County shall notify the affected bidder of the same, in writing, stating the reasons therefore and setting forth a time, date and place for the apparent lowest bidder to appear and be heard on the issue of non-responsibility. Mailing via first class mail to the address provided by bidder shall constitute sufficient service of the notice.

D. At the date, time and place set forth above, the bidder may appear in person, with or without counsel or via affidavit. After due consideration, the Commissioner shall make a determination with regard to responsibility. Such determination may be appealed pursuant to the CPLR.

E. If the apparent lowest bidder is deemed not to be responsible, then the next lowest bidder will be reviewed and so on until the lowest bidder is deemed responsible and selected as the lowest responsible bidder. The Commissioner reserves the right to award the contract to the bidder determined to be the lowest responsible bidder or to reject all bids and rebid the contract in accordance with the General Municipal Law.

Section 8. Ongoing Responsibility.

A. The Contractor shall at all times during the Contract term remain responsible. The Contractor agrees, if requested by the Commissioner 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.

B. Any resident of Erie County who has reason to believe that an awarded contractor is not responsible, may submit to the Commissioner evidence as to why the contractor or subcontractor is not responsible. The Commissioner shall acknowledge receipt of such evidence, and provide a written response within fifteen (15) calendar days.

C. The Commissioner may, upon receipt of such information, conduct a further investigation into whether or not the contractor is responsible and prior to making any determination of non-responsibility shall proceed in accordance with the process set forth in Section 7 above.

Section 9. Sanctions.

A. Any contractor or subcontractor, its alter ego or control group, or principal officer who has, after the opportunity to be heard as set forth above, been determined by the Commissioner to be non-responsible, shall be barred from bidding on contracts for the County of Erie for a period of six months for the first violation. In the event the bidder subsequently fails to comply with the provisions of this Local Law on future bids, it may be subject to additional penalties, including prohibition against work on County contracts for three years for the second violation, and permanently for the third violation.

Section 10. Emergency.

A. Notwithstanding the provisions of this Local Law, in the case of a public emergency arising out of an accident or any other unforeseen occurrence or condition whereby circumstances affecting public buildings, public property or the life, health, safety or property of the inhabitants of the County of Erie, which requires immediate action which cannot await competitive bidding or competitive offering, contracts for public work may be let by the appropriate officer, board or agency of the County of Erie without competitive bidding and as it otherwise deems appropriate.

Section 11. Severability.

If any clause, sentence, paragraph, subdivision, section or part of this Local Law or the application thereof, to any person, individual, corporation, firm, partnership, entity or circumstance, shall be adjudged by any court of competent jurisdiction to be invalid or unconstitutional such order of judgment shall not affect, impair, or invalidate the remainder thereof, but shall be confined in its operation to the clause, sentence, paragraph, subdivision, section or part of this Local Law or in its application to the person, individual, corporation, firm, partnership, entity, or circumstance directly involved in the controversy in which such judgment or order shall be rendered.

Section 12. Effective Date.

This Local Law shall take effect 30 days after the filing with the Secretary of State, in accordance with Section 27 of the New York State Municipal Home Rule Law.

Sponsors:

Timothy Meyers
April N.M. Baskin
Howard Johnson

(Complete the certification in the paragraph that applies to the filing of this local law and strike out that which is not applicable.)

1. (Final adoption by local legislative body only.)

I hereby certify that the local law annexed hereto, designated as local law No. _____ of 20____ of the (County)(City)(Town)(Village) of _____ was duly passed by the _____ on _____ 20____, in accordance with the applicable provisions of law.
(Name of Legislative Body)

2. (Passage by local legislative body with approval, no disapproval or repassage after disapproval by the Elective Chief Executive Officer*.)

I hereby certify that the local law annexed hereto, designated as local law No. 2 of 20²¹ of the (County) _____ of Erie was duly passed by the Erie County Legislature on February 4, 2021, and was (approved)(not approved) (Name of Legislative Body)
(repassed after disapproval) by the Eric County Executive (Elective Chief Executive Officer*) and was deemed duly adopted on March 1, 20²¹, in accordance with the applicable provisions of law.

3. (Final adoption by referendum.)

I hereby certify that the local law annexed hereto, designated as local law No. _____ of 20____ of the (County)(City)(Town)(Village) of _____ was duly passed by the _____ on _____ 20____, and was (approved)(not approved) (Name of Legislative Body)
(repassed after disapproval) by the _____ on _____ 20____. (Elective Chief Executive Officer*)

Such local law was submitted to the people by reason of a (mandatory)(permissive) referendum, and received the affirmative vote of a majority of the qualified electors voting thereon at the (general)(special)(annual) election held on _____ 20____, in accordance with the applicable provisions of law.

4. (Subject to permissive referendum and final adoption because no valid petition was filed requesting referendum.)

I hereby certify that the local law annexed hereto, designated as local law No. _____ of 20____ of the (County)(City)(Town)(Village) of _____ was duly passed by the _____ on _____ 20____, and was (approved)(not approved) (Name of Legislative Body)
(repassed after disapproval) by the _____ on _____ 20____. Such local law was subject to permissive referendum and no valid petition requesting such referendum was filed as of _____ 20____, in accordance with the applicable provisions of law.

* Elective Chief Executive Officer means or includes the chief executive officer of a county elected on a county-wide basis or, if there be none, the chairperson of the county legislative body, the mayor of a city or village, or the supervisor of a town where such officer is vested with the power to approve or veto local laws or ordinances.

5. (City local law concerning Charter revision proposed by petition.)

I hereby certify that the local law annexed hereto, designated as local law No. _____ of 20____ of the City of _____ having been submitted to referendum pursuant to the provisions of section (36)(37) of the Municipal Home Rule Law, and having received the affirmative vote of a majority of the qualified electors of such city voting thereon at the (special)(general) election held on _____ 20____, became operative.

6. (County local law concerning adoption of Charter.)

I hereby certify that the local law annexed hereto, designated as local law No. _____ of 20____ of the County of _____ State of New York, having been submitted to the electors at the General Election of November _____ 20____, pursuant to subdivisions 5 and 7 of section 33 of the Municipal Home Rule Law, and having received the affirmative vote of a majority of the qualified electors of the cities of said county as a unit and a majority of the qualified electors of the towns of said county considered as a unit voting at said general election, became operative.

(If any other authorized form of final adoption has been followed, please provide an appropriate certification.)

I further certify that I have compared the preceding local law with the original on file in this office and that the same is a correct transcript therefrom and of the whole of such original local law, and was finally adopted in the manner indicated in paragraph 2 above.

Clerk of the county legislative body, City, Town or Village Clerk or
officer designated by local legislative body

(Seal)

Date: March 2, 2021

A Public Hearing was held on the foregoing **Local Law Intro. No. 7-1-2020** on **February 23, 2021** due notice thereof having been published in the official newspapers of the County of Erie designated for this purpose, and after due deliberation thereon, I, MARK C. POLONCARZ, County Executive of Erie County, do hereby APPROVE and SIGN said Local Law this 1 day of March, 2021.



Mark C. Poloncarz

A Public Hearing was held on the foregoing Local Law Intro. No. 7-1-2020 on February 23, 2021 due notice thereof having been published in the official newspapers of the County of Erie designated for this purpose, and after due deliberation thereon, I, MARK C. POLONCARZ, County Executive of Erie County, do hereby DISAPPROVE and VETO said Local Law this ____ day of _____, 2021.

Mark C. Poloncarz

Local Law Filing

(Use this form to file a local law with the Secretary of State.)

Text of law should be given as amended. Do not include matter being eliminated and do not use italics or underlining to indicate new matter.

☒ County ☐ City ☐ Town ☐ Village
(Select one:)

of Erie

Local Law No. 3 of the year 20 23

A local law in relation to ensuring that service-disabled veterans have greater participation in Erie County contracts.
(Insert Title)

Be it enacted by the Erie County Legislature of the
(Name of Legislative Body)

☒ County ☐ City ☐ Town ☐ Village
(Select one:)

of Erie as follows:

SECTION 1. LEGISLATIVE INTENT

Erie County is home to many men and women who have faithfully served their country as members of military and national guard, some of whom became disabled during their service. It is the intent of the Erie County Legislature to honor this service and sacrifice for our nation by promoting and encouraging the continued economic development of service-disabled veteran-owned businesses by ensuring greater participation in County contracts.

(If additional space is needed, attach pages the same size as this sheet, and number each.)

SECTION 2. DEFINITIONS

The following terms shall have the meanings indicated:

1. “State-Certified Business” shall mean a business that is a certified service-disabled veteran-owned business under the New York State Service-Disabled Veteran-Owned Business Act.
2. “Departments and Offices” shall mean
 - a) Any County department; or
 - b) Any division, office or bureau of any County department, or Erie County Community College; or
 - c) A board, a majority of whose members are appointed by the County Executive or who serve by virtue of being County officers or employees.

SECTION 3. OUTREACH

The Erie County Office of Equal Employment Opportunity (the “EEO”) shall be responsible for outreach to State Certified Businesses in order to encourage participation in public contract bidding opportunities.

The EEO shall maintain a data base of all State-Certified Businesses.

SECTION 4. PARTICIPATION

All Departments and Offices of Erie County shall make good faith efforts to ensure State-Certified Businesses have greater participation in County contracts by aiming for at least a six percent participation rate of State-Certified Businesses on County contracts.

SECTION 5. RECORDS

All Departments and Offices of Erie County shall maintain documents reflecting the good faith efforts made by their Department.

SECTION 6. SEVERABILITY

If any clause, sentence, paragraph, subdivision, section or part of the Local Law or the application thereof, to any person, individual, corporation, firm, partnership, entity or circumstance, shall be adjudged by any court of competent jurisdiction to be invalid or unconstitutional such order of judgment shall not affect, impair, or invalidate the remainder thereof, but shall be confined in its operation to the clause, sentence, paragraph, subdivision, section or part of this Local Law or in its application to the

person, individual, corporation, firm, partnership, entity, or circumstance directly involved in the controversy in which such judgment or order shall be rendered.

SECTION 4. EFFECTIVE DATE

This Local Law shall take effect upon filing with the New York Secretary of State.

Sponsors:

John Gilmour

**(Complete the certification in the paragraph that applies to the filing of this local law and
strike out that which is not applicable.)**

1. (Final adoption by local legislative body only.)

I hereby certify that the local law annexed hereto, designated as local law No. _____ of 20____ of the (County)(City)(Town)(Village) of _____ was duly passed by the _____ on _____ 20____, in accordance with the applicable provisions of law.
(Name of Legislative Body)

2. (Passage by local legislative body with approval, no disapproval or repassage after disapproval by the Elective Chief Executive Officer*.)

I hereby certify that the local law annexed hereto, designated as local law No. _____ of 20__23__ of the (County)(City)(Town)(Village) of _____ Erie was duly passed by the Erie County Legislature on June 8 2023, and was (approved)(~~not approved~~) (Name of Legislative Body) (repassed after disapproval) by the Erie County Executive and was deemed duly adopted (Elective Chief Executive Officer*) on June 26 2023, in accordance with the applicable provisions of law.

3. (Final adoption by referendum.)

I hereby certify that the local law annexed hereto, designated as local law No. _____ of 20____ of the (County)(City)(Town)(Village) of _____ was duly passed by the _____ on _____ 20____, and was (approved)(not approved) (Name of Legislative Body) (repassed after disapproval) by the _____ on _____ 20____. (Elective Chief Executive Officer*)

Such local law was submitted to the people by reason of a (mandatory)(permissive) referendum, and received the affirmative vote of a majority of the qualified electors voting thereon at the (general)(special)(annual) election held on _____ 20____, in accordance with the applicable provisions of law.

4. (Subject to permissive referendum and final adoption because no valid petition was filed requesting referendum.)

I hereby certify that the local law annexed hereto, designated as local law No. _____ of 20____ of the (County)(City)(Town)(Village) of _____ was duly passed by the _____ on _____ 20____, and was (approved)(not approved) (Name of Legislative Body) (repassed after disapproval) by the _____ on _____ 20____. Such local law was subject to permissive referendum and no valid petition requesting such referendum was filed as of _____ 20____, in accordance with the applicable provisions of law.

* Elective Chief Executive Officer means or includes the chief executive officer of a county elected on a county-wide basis or, if there be none, the chairperson of the county legislative body, the mayor of a city or village, or the supervisor of a town where such officer is vested with the power to approve or veto local laws or ordinances.

5. (City local law concerning Charter revision proposed by petition.)

I hereby certify that the local law annexed hereto, designated as local law No. _____ of 20____ of the City of _____ having been submitted to referendum pursuant to the provisions of section (36)(37) of the Municipal Home Rule Law, and having received the affirmative vote of a majority of the qualified electors of such city voting thereon at the (special)(general) election held on _____ 20____, became operative.

6. (County local law concerning adoption of Charter.)

I hereby certify that the local law annexed hereto, designated as local law No. _____ of 20____ of the County of _____ State of New York, having been submitted to the electors at the General Election of November _____ 20____, pursuant to subdivisions 5 and 7 of section 33 of the Municipal Home Rule Law, and having received the affirmative vote of a majority of the qualified electors of the cities of said county as a unit and a majority of the qualified electors of the towns of said county considered as a unit voting at said general election, became operative.

(If any other authorized form of final adoption has been followed, please provide an appropriate certification.)

I further certify that I have compared the preceding local law with the original on file in this office and that the same is a correct transcript therefrom and of the whole of such original local law, and was finally adopted in the manner indicated in paragraph 2 above.

Clerk of the county legislative body, City, Town or Village Clerk or
officer designated by local legislative body

(Seal)

Date: _____

A Public Hearing was held on the foregoing **Local Law Intro. No. 5-1-2023** on May 31, **2023** due notice thereof having been published in the official newspapers of the County of Erie designated for this purpose, and after due deliberation thereon, I, MARK C. POLONCARZ, County Executive of Erie County, do hereby APPROVE and SIGN said Local Law this 26 day of **June, 2023**.


Mark C. Poloncarz

A Public Hearing was held on the foregoing **Local Law Intro. No. 5-1-2023** on _____, **2023** due notice thereof having been published in the official newspapers of the County of Erie designated for this purpose, and after due deliberation thereon, I, MARK C. POLONCARZ, County Executive of Erie County, do hereby DISAPPROVE and VETO said Local Law this _____ day of **June, 2023**.

Mark C. Poloncarz

WAGE RATES



Kathy Hochul, Governor

Roberta Reardon, Commissioner

Erie County

Rebecca Offermann
95 Franklin
Buffalo NY 14202

Schedule Year 2024 through 2025
Date Requested 11/26/2024
PRC# 2024014742

Location Erie County Community College
Project ID# 2023-956-01
Project Type Site and electrical construction for a new sports field complex at Erie County Community College North Campus

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 2024 through June 2025. 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.

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 from 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, 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.

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

Erie County

Rebecca Offermann
95 Franklin
Buffalo NY 14202

Schedule Year 2024 through 2025
Date Requested 11/26/2024
PRC# 2024014742

Location Erie County Community College
Project ID# 2023-956-01
Project Type Site and electrical construction for a new sports field complex at Erie County Community College North Campus

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: \$ _____	Contract Type:	
Approximate Starting Date: ____/____/____	☐ (01) General Construction	
Approximate Completion Date: ____/____/____	☐ (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.

**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

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.



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.**

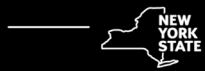
Penalties for paying workers off the books or improperly treating employees as independent contractors:

- **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)



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 or 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 requirements 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.

Payrolls and Payroll Records

Contractors and subcontractors are required to establish, maintain, and preserve for not less than six (6) years, contemporaneous, true, and accurate payroll records.

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.

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.

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

11/01/2024

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: 07/01/2024

Boilermaker \$ 36.10

The wage rate will be 90% of the above for Maintenance work on boilers less than 100,000 pph.

SUPPLEMENTAL BENEFITS

Per hour: \$ 32.30*

*NOTE: \$31.06 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) on HOLIDAY PAGE

REGISTERED APPRENTICES

1st Term at 12 Months

Terms 3-8 at 6 Months

Per Hour:

1st 65%

3rd 70% 4th 75% 5th 80% 6th 85% 7th 90% 8th 95%

Supplemental Benefits per hour:

All Terms \$ 32.30**

**NOTE: \$31.06 of this amount is for every Hour "Paid"

12-7

Carpenter - Building

11/01/2024

JOB DESCRIPTION Carpenter - Building

DISTRICT 12

ENTIRE COUNTIES

Erie

PARTIAL COUNTIES

Cattaraugus: Townships of Persia and Perrysburg

WAGES

Per hour: 07/01/2024

Building:

Carpenter \$ 34.73

FloorLayer 34.73

Certified Welder 35.73

Hazardous Waste Worker 36.23

Diver-Dry Day 35.73

Diver Tender 35.73

Diver-Wet Day*** 61.25

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' and deeper	additional \$1.25 per foot

Penetration pay:	0' to 50'	no additional fee

51' to 100'	additional \$0.75 per foot
101' and deeper	additional \$1.00 per foot

SHIFT WORK

On Agency/Owner 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)	\$ 29.15
Diver(s)	29.15

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:

Floorlayer Apprentices:			
1st	2nd	3rd	4th
65%	70%	75%	80%
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	11/01/2024

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: 07/01/2024

Carpenter - ONLY for Artificial Turf/Synthetic Sport Surface	\$ 36.48

Note - Does not include the operation of equipment. Please see Operating Engineers rates.

SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker	\$ 26.55

OVERTIME PAY

See (B, E, Q, X) 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. When 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:

\$18.58	\$19.14	\$21.24	\$21.79

2-42AtSS

Carpenter - Heavy&Highway

11/01/2024

JOB DESCRIPTION Carpenter - Heavy&Highway

DISTRICT 12

ENTIRE COUNTIES

Erie

WAGES

Per hour: 07/01/2024

Carpenter	\$ 41.19
Certified Welder	43.69
Diver-Dry Day	42.19
Diver-Wet Day**	66.19
Diver Tender	42.19
Hazardous Material Worker	43.69
Piledriver	41.19
Effluent & Slurry Diver-Dry Day	63.29
Effluent & Slurry Diver-Wet Day	99.29
Piledriver Welder	43.69

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

Penetration pay:	0' to 50'	no additional fee
	51' to 100'	additional \$0.75 per foot
	101' to deeper	additional \$1.00 per foot

SUPPLEMENTAL BENEFITS

Per hour worked:

Carpenter(s)	\$ 31.84
Diver(s)	31.84

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	5th
65%	70%	75%	80%	85%

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	5th
\$ 19.56	\$ 20.19	\$ 22.36	\$ 22.99	\$ 23.62

12-276HH-Erie

Electrician

11/01/2024

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: 07/01/2024

Electrician* \$ 41.41

* 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: \$ 32.37*

* NOTE - add 3% 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 to 2000 to 3500 to 5000 to 6500 to 8200

\$ 15.30 \$ 16.55 \$ 18.65 \$ 22.80 \$ 29.00 \$ 33.15

Supplemental benefits per hour:

0 to 2000 to 6500 to 8200

\$ 14.55* \$ 25.59* \$ 32.37*

* NOTE - add 3% of the posted straight time or applicable premium wage rate.

Elevator Constructor

11/01/2024

JOB DESCRIPTION Elevator Constructor

DISTRICT 3

ENTIRE COUNTIES

Allegany, Cattaraugus, Chautauqua, Erie, Genesee, Niagara, Orleans, Wyoming

WAGES

Per hour:	07/01/2024
Elevator Constructor	\$ 59.82
Helper	41.87

SUPPLEMENTAL BENEFITS

Per hour:
\$ 37.89

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%

Supplemental benefits per hour:
\$ 37.89

* Note - 0-6 months of the 1st year term is paid at 50% of Journeyman's wage with no Supplemental benefits.

Note - add 6% of regular hourly rate for all hours worked.

3-14

Glazier

11/01/2024

JOB DESCRIPTION Glazier

DISTRICT 3

ENTIRE COUNTIES

Allegany, Cattaraugus, Chautauqua, Erie, Genesee, Niagara, Orleans, Wyoming

WAGES

Per hour: 07/01/2024

Glazier	\$ 31.68
Working off Suspended	
Scaffold (Swing Stage)	33.68
Maintenance	20.20*

* 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:
Journeyman Glazier \$ 27.89
Maintenance 17.86

OVERTIME PAY

See (B, E2, F, R) 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
\$ 18.50	\$ 19.50	\$ 20.50	\$ 21.50	\$ 22.50	\$ 23.50	\$ 24.50	\$ 25.50

Supplemental benefits per hour:

1st & 2nd terms	\$ 8.60
3rd & 4th terms	11.10
5th & 6th terms	12.60
7th & 8th terms	14.10

3-660

Insulator - Heat & Frost**11/01/2024**

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:	07/01/2024
Heat & Frost Insulator	\$ 36.85

SUPPLEMENTAL BENEFITS

Per hour:	\$ 29.29

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	\$ 8.96
2nd	12.54
3rd	29.29
4th	29.29

3-4

Ironworker**11/01/2024**

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:	07/01/2024

Structural	\$ 35.49
Ornamental	35.49
Layout	35.49

Rodmen	35.49
Reinforcing	35.49
Welders	35.49
Riggers & Mach. Movers	35.49
Curtain Wall Erector	35.49
Window Erector	33.14
Fence Erector	34.06

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	\$ 31.16
All others	32.66

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
\$ 15.06	\$ 24.97	\$ 26.38	\$ 27.80

3-6

Ironworker

11/01/2024

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: 07/01/2024

Structural	\$ 34.75
Ornamental	34.75
Reinforcing	34.75
Rigger & Mach. Mover	34.75
Pre-Engineered	34.75
Fence Erector	34.75
Pre-Cast Erector	34.75
Welder	34.75
Window Erector	34.75

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:
\$ 33.69

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	\$ 13.28
2nd term	21.26
3rd term	22.40
4th term	23.54

3-9

Laborer - Building

11/01/2024

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: 07/01/2024

Building Laborer:

CLASS A	\$ 31.68
CLASS B	31.85
CLASS C	31.96
CLASS D	32.43
CLASS E	33.18
CLASS F	33.68

SUPPLEMENTAL BENEFITS

Per hour:
\$ 28.65

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:

\$ 28.65

3-210b

Laborer - Heavy&Highway

11/01/2024

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, Guniting, 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: 07/01/2024

Heavy/Highway Laborer:

GROUP A \$ 36.16
GROUP B 36.36
GROUP C 36.56
GROUP D 36.76

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: 07/01/2024

Sewer/Water Laborer:

GROUP A \$ 36.16
GROUP B 36.26
GROUP C 36.31
GROUP D 36.41
GROUP E 36.76

GROUP F 37.16
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:
\$ 29.65

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:

\$ 29.65

3-210h

Laborer - Tunnel

11/01/2024

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: 07/01/2024

Tunnel Laborer:

CLASS A \$ 37.66
CLASS B 37.81
CLASS C 37.91
CLASS D 38.41
CLASS E 38.51
CLASS F 38.91
CLASS G 39.16

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:

\$ 29.65

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:

\$ 29.65

3-210t

Lineman Electrician

11/01/2024

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:	07/01/2024
Group A:	
Lineman, Technician	\$ 58.90
Crane, Crawler Backhoe	58.90
Welder, Cable Splicer	58.90
Group B:	
Digging Mach. Operator	53.01
Tractor Trailer Driver	50.07
Groundman, Truck Driver	47.12
Equipment Mechanic	47.12
Flagman	35.34

Additional \$1.00 per hour for entire crew when a helicopter is used.

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	\$ 58.90
Crane, Crawler Backhoe	58.90
Cable Splicer	64.79
Certified Welder, Pipe Type Cable	61.85

Group B:	
Digging Mach. Operator	53.01
Tractor Trailer Driver	50.07
Groundman, Truck Driver	47.12
Equipment Mechanic	47.12
Flagman	35.34

Additional \$1.00 per hour for entire crew when a helicopter is used.

Below rates applicable on all switching structures, maintenance projects, railroad catenary install/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	\$ 60.22
Crane, Crawler Backhoe	60.22
Cable Splicer	66.24
Certified Welder, Pipe Type Cable	63.23

Group B:	
Digging Mach. Operator	54.20
Tractor Trailer Driver	51.19
Groundman, Truck Driver	48.18
Equipment Mechanic	48.18
Flagman	36.13

Additional \$1.00 per hour for entire crew when a helicopter is used.

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	\$ 61.41
Crane, Crawler Backhoe	61.41

Group B:	
Digging Mach. Operator	55.27
Tractor Trailer Driver	52.20
Groundman, Truck Driver	49.13
Equipment Mechanic	49.13
Flagman	36.85

Additional \$1.00 per hour for entire crew when a helicopter is used.

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:
07/01/2024

Group A \$ 30.90
*plus 7% of

	the hourly wage paid
Group B	\$ 26.90 *plus 7% of the hourly wage paid

*The 7% is based on the hourly wage paid, 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, 13, 25) on HOLIDAY PAGE plus Governor of NYS Election Day.
Overtime	See (5, 6, 8, 13, 25) on HOLIDAY PAGE plus Governor of NYS Election Day.

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:

07/01/2024

\$ 26.90
*plus 7% of
the hourly
wage paid

*The 7% is based on the hourly wage paid, straight time or premium time.

6-1249a

Lineman Electrician - Teledata

11/01/2024

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

Per hour:

For outside work, stopping at first point of attachment (demarcation).

	07/01/2024	01/01/2025
Cable Splicer	\$ 39.24	\$ 40.81
Installer, Repairman	\$ 37.24	\$ 38.73
Teledata Lineman	\$ 37.24	\$ 38.73
Tech., Equip. Operator	\$ 37.24	\$ 38.73
Groundman	\$ 19.74	\$ 20.53

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:	07/01/2024	01/01/2025
Journeyworker	\$ 5.70 *plus 3% of the hour wage paid	\$ 5.70 *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

11/01/2024

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:	07/01/2024
Group A:	
Lineman, Technician	\$ 50.54
Crane, Crawler Backhoe	50.54
Certified Welder	53.07
Group B:	
Digging Machine	45.49
Tractor Trailer Driver	42.96
Groundman, Truck Driver	40.43
Equipment Mechanic	40.43
Flagman	30.32

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:

07/01/2024

Group A \$ 30.90
 *plus 7% of
 the hourly
 wage paid

Group B \$ 26.90
 *plus 7% of
 the hourly
 wage paid

*The 7% is based on the hourly wage paid, 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, 13, 25) on HOLIDAY PAGE plus Governor of NYS Election Day.

Overtime: See (5, 6, 8, 13, 25) on HOLIDAY PAGE plus Governor of NYS Election Day.

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:

07/01/2024

\$ 26.90
*plus 7% of
the hourly
wage paid

*The 7% is based on the hourly wage paid, straight time or premium time.

6-1249a-LT

Lineman Electrician - Tree Trimmer

11/01/2024

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: 07/01/2024

Tree Trimmer	\$ 31.44
Equipment Operator	27.80
Equipment Mechanic	27.80
Truck Driver	23.15

Groundman	19.07
Flag person	15.00*

*NOTE-Rate effective on 01/01/2025 - \$15.50 due to minimum wage increase.

SUPPLEMENTAL BENEFITS

Per hour:

07/01/2024

Journeyworker	\$ 10.48
	*plus 4.5% of the hourly wage paid

* The 4.5% is based on the hourly wage paid, 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) 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

11/01/2024

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:	07/01/2024	04/01/2025 Additional
Plasterer	\$ 32.55	\$ 1.50

Additional \$3.00/hr for work on swing stage over 20 feet.

SUPPLEMENTAL BENEFITS

Per hour:

\$ 24.09

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:
07/01/2024

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**11/01/2024**

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: 07/01/2024

Building:

Bricklayer \$ 37.44

Stone Mason 37.44

Tuck Pointer 37.44

SUPPLEMENTAL BENEFITS

Per hour:

Journeyman \$ 33.14

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
\$ 28.77	\$ 29.50	\$ 31.61	\$ 34.59

Supplemental benefits per hour:

1st	2nd	3rd	4th
\$ 13.48	\$ 19.83	\$ 24.80	\$ 28.91

5-3B-Z3

Mason - Building / Heavy&Highway**11/01/2024**

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: 07/01/2024

Cement Mason \$ 33.10

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
\$ 19.86	\$ 21.52	\$ 23.17	\$ 24.83	\$ 26.48	\$ 28.14

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

11/01/2024

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: Entire 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: 07/01/2024

Heavy & Highway:

Cement Mason \$ 37.88

Bricklayer 37.88

SUPPLEMENTAL BENEFITS

Per hour:

Journeyman \$ 24.53

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	\$ 14.53
2nd term	\$ 23.57
3rd term	\$ 23.81
4th term	\$ 24.05

5-3h

Mason - Tile Finisher

11/01/2024

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: 07/01/2024

Building:
Marble, Slate, Terrazzo and Tile Finisher \$ 34.71

SUPPLEMENTAL BENEFITS

Per hour: \$ 17.97

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
\$ 21.97	\$ 25.04	\$ 28.42

Supplemental benefits per hour:

1st	2nd	3rd
\$ 9.54	\$ 11.76	\$ 13.67

5-3TF - Z3

Mason - Tile Setter

11/01/2024

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: 07/01/2024

Building:
Marble, Slate, Terrazzo and Tile Setter \$ 37.85

SUPPLEMENTAL BENEFITS

Per hour: \$ 32.23

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
\$ 28.88	\$ 29.60	\$ 31.52	\$ 35.24

Supplemental benefits per hour:

1st	2nd	3rd	4th
\$ 13.07	\$ 19.38	\$ 24.49	\$ 27.81

5-3TS - Z3

Millwright

11/01/2024

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, Schuylar, 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:	07/01/2024	07/01/2025
		Additional
Millwright - Power Generation	\$ 45.00	\$2.50*
* To be allocated at a later date.		

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	\$ 27.95*

*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	\$ 11.89
Appr. 2nd year	23.14
Appr. 3rd year	24.74
Appr. 4th year	26.35

6-1163Power

Millwright

11/01/2024

JOB DESCRIPTION Millwright

DISTRICT 12

ENTIRE COUNTIES

Erie, Genesee, Niagara

WAGES

Per hour:	07/01/2024

Building	\$ 40.53
Heavy & Highway*	\$ 44.03

*All Heavy & Highway Millwright construction will be paid at the rate indicated above. H/H work performed on hazardous waste sites where employees are required to wear protective gear shall receive an additional \$2.00 per hour over the Millwright H/H rate for all hours worked on the day protective gear was worn.

NOTE ADDITIONAL PREMIUMS PAID FOR THE FOLLOWING WORK LISTED BELOW (amount subject to any overtime premiums):

- 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.
- If a building 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) are required, then that employee shall receive a \$1.50 premium per hour.
- An employee performing the work of 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	\$ 31.49

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
\$11.89	\$ 25.61	\$ 27.57	\$ 29.53

12-1163-Gen/Nia/Orl/Wyo

Operating Engineer	11/01/2024

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

	7/01/2024	01/01/2025
Per Hour:		

Concrete Pump	\$46.00	\$47.38

ADDITIONAL:

Pumps from		
46-65 meters	\$3.00/HR	\$4.25/HR
Hazardous Work Site	\$2.50/HR	\$2.50/HR

SUPPLEMENTAL BENEFITS

Per Hour:	\$32.00*	\$33.10*

PLEASE NOTE BELOW IN OVERTIME.

OVERTIME PAY

See (B, Q, *V) on OVERTIME PAGE

* \$1.90 of above benefit amount is for every hour paid.

* 07/01/2024 \$7.05 of above benefit amount is calculated at Same Premium

* 01/01/2025 \$7.30 of above benefit amount is calculated at Same Premium

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

12-17Pump

Operating Engineer - Building

11/01/2024

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, Revinus 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:	07/01/2024
Class A	\$ 43.00
Class B	38.34
Crane(Up to 60 Tons)	46.00
" (61 to 199 Tons)	47.00
" (200 to 399 Tons)	47.50
" (400 Tons or more)	48.00

Additional \$5.00/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 \$ 34.35**

**Note: For Overtime Hours \$25.40 of this amount is paid a straight time, the remaining balance of \$8.95 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
\$ 32.40	\$ 33.32	\$ 34.24	\$ 35.16

Supplemental benefits Per Hour:

All Apprentices \$ 33.45**

**Note: For Overtime Hours \$25.40 of this amount to be paid a straight time rate remaining balance of \$8.05 is paid at same premium as the wage.

12-17b

Operating Engineer - Heavy&Highway

11/01/2024

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: 07/01/2024

Class 1	\$ 51.50
Class 2(A)	50.00
Class 2(B)	53.00
Class 3	44.45
Class 4	41.00

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 \$ 36.86

OVERTIME PAY

See (B, E, I, *S) 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

11/01/2024

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, Conveying Vehicles Conveying 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 Guniting 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, Pumpcrete, 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), Revinus 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:	07/01/2024
Class A	\$ 43.39
Class B	38.89
Crane 5 to 60 tons	46.39
" 61 to 199 tons	46.89
" 200 to 399 tons	47.39
" 400 and over	47.89

Additional \$2.50/hr. for Hazardous Work Site

Additional \$1.00/hr. for Tunnel Work

Additional \$4.00/hr. for Agency Mandated Off-Shift Work

SUPPLEMENTAL BENEFITS

Per hour:

Journeymen \$ 35.96*

*Note: For Overtime Hours \$23.00 of the amount paid at straight time, the remaining balance of \$12.96 is paid at the same premium as the wage.

OVERTIME PAY

See (B, E, Q, *V) on OVERTIME PAGE

*Note: Overtime rate is 1.5X the wage rate plus \$9.68 or 2X the wage rate plus \$19.35

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
\$35.89	\$36.89	\$37.89	\$38.89

Supplemental Benefits

All Apprentices \$ 35.56*

*Note: For Overtime Hours \$23.00 of the amount paid at straight time, the remaining balance of \$12.56 is paid at same premium as the wage.

12-17 hh/sw/t

Operating Engineer - Survey Crew

11/01/2024

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.

07/01/2024

Party Chief	\$ 49.40
Instrument Person	46.62
Rod Person	32.52

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 \$ 30.80

OVERTIME PAY

See (B, E, Q, *V, X) on OVERTIME PAGE

*Note: \$27.65 Only for "ALL" premium hours paid.

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:

07/01/2024

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

11/01/2024

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.

07/01/2024

Party Chief	\$ 48.90
Instrument Person	46.12
Rod Person	32.02

SUPPLEMENTAL BENEFITS

Per hour worked:

Journeyman	\$ 31.30

OVERTIME PAY

See (B, E, Q, *V, X) on OVERTIME PAGE

*Note: \$24.75 Only for "ALL" premium hours paid.

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:

07/01/2024

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

11/01/2024

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: 07/01/2024

Basic Rate (Brush & Roll)	\$ 31.37
Spray painting, wallcovering	31.37
Abrasive and hydroblasting	31.37
Taping/DryWall Finisher	32.86
Skeleton Steel*	32.12

* 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	\$ 28.21
Taping/Drywall Finisher	\$ 27.82

OVERTIME PAY

Exterior work only See (B, E4, F*, R) on OVERTIME PAGE.

All other work See (B, F*, R) on OVERTIME PAGE.

* Note - Saturday is payable at straight time if the employee misses work, except where a doctor's or hospital verification of illness is produced Monday through Friday when work was available to the employee.

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

11/01/2024

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: 07/01/2024

Bridge	\$ 43.81
Tunnel	43.81
Tank*	41.81

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: \$ 31.39

OVERTIME PAY

Exterior work only See (B, E4, F*, R) on OVERTIME PAGE.
All other work See (B, F*, R) on OVERTIME PAGE.

*Note - Saturday is payable at straight time if the employee misses work, except where a doctor's or hospital verification of illness is produced Monday through Friday when work was available to the employee.

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	11/01/2024

JOB DESCRIPTION Painter - Metal PolisherDISTRICT 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

	07/01/2024
Metal Polisher	\$ 39.33
Metal Polisher*	40.43
Metal Polisher**	43.33

*Note: Applies on New Construction & complete renovation
** Note: Applies when working on scaffolds over 34 feet.

SUPPLEMENTAL BENEFITS

Per Hour:	07/01/2024
Journeyworker:	
All classification	\$ 12.79

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:

07/01/2024

1st year	\$ 19.67
2nd year	21.63
3rd year	23.60
1st year*	\$ 22.06
2nd year*	22.07
3rd year*	24.14
1st year**	\$ 22.17
2nd year**	24.13
3rd year**	26.10

*Note: Applies on New Construction & complete renovation

** Note: Applies when working on scaffolds over 34 feet.

Supplemental benefits:

Per hour:

1st year	\$ 8.69
2nd year	8.69
3rd year	8.69

8-8A/28A-MP

Plumber

11/01/2024

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: 07/01/2024

Plumber	\$ 41.33
Steamfitter	\$ 41.33

Note - Add 10% (ten percent) to wage when HAZMAT training is required or when OSHA compliant respirator protection is required.

SUPPLEMENTAL BENEFITS

Per hour:

\$ 29.91

Note - \$6.00 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:

\$ 24.99

Note - \$6.00 of this amount must be paid at the same premium as the wage.

3-22-P

Roofer	11/01/2024

JOB DESCRIPTION Roofer

DISTRICT 3

ENTIRE COUNTIES

Erie, Genesee, Niagara, Orleans, Wyoming

WAGES

Per hour: 07/01/2024

Asbestos Removal	\$ 37.96
Slate, Tile	35.11
Precast tile / slabs	35.11
Crete / gypsum planks	35.11
Damp and waterproofer	34.96
Composition, sprayers,	34.96
Asphalt mastic,	34.96
Steep roofers	34.96

SHIFT WORK

When shift work is mandated either in the job specification or by the contracting agency the following premiums apply:

15.0% for work from 4:30PM - 1:00AM or second shift

20.0% for work from 12:30AM - 9:00AM or third shift

SUPPLEMENTAL BENEFITS

Per hour: \$ 26.11

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
		\$ 10.96		\$ 15.14		\$ 15.39		\$ 23.22		\$ 23.94		\$ 24.66		\$ 25.39

3-74

Sheetmetal Worker	11/01/2024

JOB DESCRIPTION Sheetmetal Worker

DISTRICT 3

ENTIRE COUNTIES

Erie, Genesee, Niagara, Orleans, Wyoming

WAGES

Per hour: 07/01/2024

Sheet Metal Worker \$ 39.50

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: \$ 29.18*

* Note - \$18.60 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	\$ 20.73
2nd term	25.37
3rd term	28.02
4th term	29.65
5th term	32.94

Supplemental benefits per hour:

1st term	\$ 17.78	Note - \$8.20 of this amount must be paid at the same premium as the wage.
2nd term	21.79	Note - \$12.21 of this amount must be paid at the same premium as the wage.
3rd term	26.84	Note - \$16.26 of this amount must be paid at the same premium as the wage.
4th term	27.18	Note - \$16.60 of this amount must be paid at the same premium as the wage.
5th term	27.84	Note - \$17.26 of this amount must be paid at the same premium as the wage.

3-71

Sprinkler Fitter	11/01/2024

JOB DESCRIPTION Sprinkler FitterDISTRICT 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 07/01/2024

Sprinkler \$ 42.00
Fitter

SUPPLEMENTAL BENEFITS

Per hour

Journeyworker \$ 28.82

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
\$ 20.03	\$ 22.26	\$ 24.24	\$ 26.46	\$ 28.69	\$ 30.91	\$ 33.14	\$ 35.37	\$ 37.59	\$ 39.82

Supplemental Benefits per hour

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
\$ 9.18	\$ 9.18	\$ 20.90	\$ 20.90	\$ 21.15	\$ 21.15	\$ 21.15	\$ 21.15	\$ 21.15	\$ 21.15
1-669									

Teamster - Building / Heavy&Highway	11/01/2024

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: 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 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: 07/01/2024

All GROUPS \$ 45.98

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:

\$ 17.05*

*Note - Only \$ 8.50 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	11/01/2024

JOB DESCRIPTION Teamster - Building / Heavy&Highway

DISTRICT 3

ENTIRE COUNTIES

Erie, Niagara

WAGES

Per hour: 07/01/2024

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

11/01/2024

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 07/01/2024

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
- (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) Saturday and 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

☐ 10 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



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 11/18/2024

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	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		AMJED PARVEZ		401 HANOVER AVENUE STATEN ISLAND NY 10304	01/11/2021	01/11/2026
DOL	DOL		ANGELO F COKER		2610 SOUTH SALINA STREET SUITE 14SYRACUSE NY 13205	09/17/2020	09/17/2025
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 MONGELLI		PO BOX 2064 MONROE NY 10950	02/12/2024	02/12/2029
DOL	NYC		ARADCO CONSTRUCTION CORP		115-46 132RD ST SOUTH OZONE PARK NY 11420	09/17/2020	09/17/2025
DOL	DOL		ARNOLD A. PAOLINI		1250 BROADWAY ST BUFFALO NY 14212	02/03/2020	02/03/2025
DOL	NYC		ARSHAD MEHMOOD		168-42 88TH AVENUE JAMAICA NY 11432	11/20/2019	11/20/2024
DOL	NYC		AVM CONSTRUCTION CORP		117-72 123RD ST SOUTH OZONE PARK NY 11420	09/17/2020	09/17/2025
DOL	NYC		AZIDABEGUM		524 MCDONALD AVENUE BROOKLYN NY 11218	09/17/2020	09/17/2025
DOL	DOL	*****8421	B & B DRYWALL, INC		206 WARREN AVE APT 1WHITE PLAINS NY 10603	12/14/2021	12/14/2026
DOL	DOL		B&L RENOVATION CO.		618 OCEAN PARKWAY APT A6BROOKLYN NY 11230	09/17/2020	09/17/2025
DOL	DOL		BERNARD BEGLEY		38 LONG RIDGE ROAD BEDFORD NY 10506	12/18/2019	12/18/2024
DOL	NYC	*****2113	BHW CONTRACTING, INC.		401 HANOVER AVENUE STATEN ISLAND NY 10304	01/11/2021	01/11/2026
DOL	DOL	*****3627	BJB CONSTRUCTION CORP.		38 LONG RIDGE ROAD BEDFORD NY 10506	12/18/2019	12/18/2024
DOL	DOL	*****5078	BLACK RIVER TREE REMOVAL, LLC		29807 ANDREWS ROAD BLACK RIVER NY 13032	10/17/2023	10/17/2028
DOL	DOL		BRADLEY J SCHUKA		4 BROTHERS ROAD WAPPINGERS FALLS NY 12590	10/20/2020	10/20/2025
DOL	DOL	*****9383	C.C. PAVING AND EXCAVATING, INC.		2610 SOUTH SALINA ST SUITE 12SYRACUSE NY 13205	09/17/2020	09/17/2025
DOL	DOL	*****4083	C.P.D. ENTERPRISES, INC		P.O BOX 281 WALDEN NY 12586	03/03/2020	03/03/2025
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	*****4155	CASA BUILDERS, INC.	FRIEDLANDER CONSTRUCTI ON	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	*****0026	CHANTICLEER CONSTRUCTION LLC		4 BROTHERS ROAD WAPPINGERS FALLS NY 12590	10/20/2020	10/20/2025
DOL	NYC	*****2117	CHARAN ELECTRICAL ENTERPRISES		9-11 40TH AVENUE LONG ISLAND CITY NY 11101	09/26/2023	09/26/2028
DOL	NYC		CHARLES ZAHRADKA		863 WASHINGTON STREET FRANKLIN SQUARE NY 11010	03/10/2020	03/10/2025

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DOL	DOL		CHRISTOPHER GRECO		26 NORTH MYRTLE AVENUE SPRING VALLEY NY 10956	02/18/2021	02/18/2026
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	*****3228	CROSS-COUNTY LANDSCAPING AND TREE SERVICE, INC.	ROCKLAND TREE SERVICE	26 NORTH MYRTLE AVENUE SPRING VALLEY NY 10956	02/18/2021	02/18/2026
DOL	DOL	*****7619	DANCO CONSTRUCTION UNLIMITED INC.		485 RAFT AVENUE HOLBROOK NY 11741	10/19/2021	10/19/2026
DOL	DOL		DANIEL ROBERT MCNALLY		7 GREENFIELD DRIVE WARWICK NY 10990	03/25/2022	03/25/2027
DOL	DOL		DARIAN L COKER		2610 SOUTH SALINA ST SUITE 2CSYRACUSE NY 13205	09/17/2020	09/17/2025
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		DINA TAYLOR		64 N PUTT CONNERS RD NEW PALTZ NY 12561	05/10/2023	05/10/2028
DOL	DOL	*****5175	EAGLE MECHANICAL AND GENERAL CONSTRUCTION LLC		11371 RIDGE RD WOLCOTT NY 14590	02/03/2020	02/03/2025
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	*****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	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	NYC	*****6616	G & G MECHANICAL ENTERPRISES, LLC.		1936 HEMPSTEAD TURNPIKE EAST MEDOW NY 11554	11/29/2019	11/29/2024
DOL	DOL	*****2998	G.E.M. AMERICAN CONSTRUCTION CORP.		195 KINGSLAND AVE BROOKLYN NY 11222	12/22/2023	12/22/2028
DOL	NYC		GAYATRI MANGRU		21 DAREWOOD LANE VALLEY STREAM NY 11581	09/17/2020	09/17/2025
DOL	DA		GEORGE LUCEY		150 KINGS STREET BROOKLYN NY 11231	01/19/1998	01/19/2998
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		HANS RATH		24 ELDOR AVENUE NEW CITY NY 10956	02/03/2020	02/03/2025
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	*****2397	ISLAND BREEZE MARINE, INC.		6400 BALTIMORE NATIONAL CANTONSVILLE MD 21228	10/24/2024	10/24/2029
DOL	DOL	*****9211	J. WASE CONSTRUCTION CORP.		8545 RT 9W ATHENS NY 12015	03/09/2021	03/09/2026
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

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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		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	NYC		JENNIFER GUERRERO		1936 HEMPSTEAD TURNPIKE EAST MEADOW NY 11554	11/29/2019	11/29/2024
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 MARKOVIC		47 MANDON TERRACE HAWTHORN NJ 07506	03/29/2021	03/29/2026
DOL	DOL		JOHN WASE		8545 RT 9W ATHENS NY 12015	03/09/2021	03/09/2026
DOL	DOL		JORGE RAMOS		8970 MIKE GARCIA DR MANASSAS VA 20109	07/16/2021	07/16/2026
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

NYSDOL Bureau of Public Work Debarment List 11/18/2024

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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		KARIN MANGIN	796 PHELPS ROAD FRANKLIN LAKES NJ 07417	12/01/2020	12/01/2025
DOL	DOL		KATE E. CONNOR	7088 INTERSTATE ISLAND RD SYRACUSE NY 13209	03/31/2021	03/31/2026
DOL	DOL		KEAN INDUSTRIES, LLC	2345 RT. 52 SUITE 2NHOPEWELL JUNCTION NY 12533	12/18/2023	12/18/2028
DOL	DOL	*****2959	KELC DEVELOPMENT, INC	7088 INTERSTATE ISLAND RD SYRACUSE NY 13209	03/31/2021	03/31/2026
DOL	DOL		KIMBERLY F. BAKER	7901 GEE ROAD CANASTOTA NY 13032	08/17/2021	08/17/2026
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	AG	*****3291	LINTECH ELECTRIC, INC.	3006 TILDEN AVE BROOKLYN NY 11226	02/16/2022	02/16/2027
DOL	DOL		LOUIS A. CALICCHIA	1223 PARK ST. PEEKSKILL NY 10566	05/17/2021	05/17/2026
DOL	NYC		LUBOMIR PETER SVOBODA	27 HOUSMAN AVE STATEN ISLAND NY 10303	12/26/2019	12/26/2024
DOL	NYC		M & L STEEL & ORNAMENTAL IRON CORP.	27 HOUSMAN AVE STATEN ISLAND NY 10303	12/26/2019	12/26/2024
DOL	DOL	*****2196	MAINSTREAM SPECIALTIES, INC.	11 OLD TOWN RD SELKIRK NY 12158	02/02/2021	02/02/2026
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		MAQSOOD AHMAD	618 OCEAN PKWY BROOKLYN NY 11230	09/17/2020	09/17/2025
DOL	NYC		MARIA NUBILE	84-22 GRAND AVENUE ELMHURST NY 11373	03/10/2020	03/10/2025
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	NYC		MUHAMMED A. HASHEM	524 MCDONALD AVENUE BROOKLYN NY 11218	09/17/2020	09/17/2025
DOL	NYC		NAMOW, INC.	84-22 GRAND AVENUE ELMHURST NY 11373	03/10/2020	03/10/2025
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

NYSDOL Bureau of Public Work Debarment List 11/18/2024

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DOL	DOL		NELCO CONTRACTING, LLC		1024 BROADWAY ALBANY NY 12204	11/07/2023	11/07/2028
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	*****7429	NICOLAE I. BARBIR	BESTUCCO CONSTRUCTI ON, INC.	444 SCHANTZ ROAD ALLENTOWN PA 18104	09/17/2020	09/17/2025
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		PAULINE CHAHALES		935 S LAKE BLVD MAHOPAC NY 10541	03/02/2021	03/02/2026
DOL	DOL		PETER STEVENS		11 OLD TOWN ROAD SELKIRK NY 12158	02/02/2021	02/02/2026
DOL	DOL		PETER STEVENS		8269 21ST ST BELLEROSE NY 11426	12/22/2022	12/22/2027
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	*****0466	PRECISION BUILT FENCES, INC.		1617 MAIN ST PEEKSKILL NY 10566	03/03/2020	03/03/2025
DOL	NYC		RASHEL CONSTRUCTION CORP		524 MCDONALD AVENUE BROOKLYN NY 11218	09/17/2020	09/17/2025
DOL	DOL	*****1068	RATH MECHANICAL CONTRACTORS, INC.		24 ELDOR AVENUE NEW CITY NY 10956	02/03/2020	02/03/2025
DOL	DOL	*****2633	RAW POWER ELECTRIC CORP.		3 PARK CIRCLE MIDDLETOWN NY 10940	07/11/2022	07/11/2027
DOL	DA	*****7559	REGAL CONTRACTING INC.		24 WOODBINE AVE NORTHPORT NY 11768	10/01/2020	10/01/2025
DOL	DOL		RICHARD REGGIO		1617 MAIN ST PEEKSKILL NY 10566	03/03/2020	03/03/2025
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	*****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 RD POMPEI 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	NYC	*****0349	SAM WATERPROOFING INC		168-42 88TH AVENUE APT.1 AJAMAICA NY 11432	11/20/2019	11/20/2024
DOL	DA	*****0476	SAMCO ELECTRIC CORP.		3735 9TH ST LONG ISLAND CITY NY 11101	01/05/2023	01/05/2028
DOL	NYC	*****1130	SCANA CONSTRUCTION CORP.		863 WASHINGTON STREET FRANKLIN SQUARE NY 11010	03/10/2020	03/10/2025
DOL	DOL	*****2045	SCOTT DUFFIE	DUFFIE'S ELECTRIC, INC.	P.O BOX 111 CORNWALL NY 12518	03/03/2020	03/03/2025
DOL	DOL		SCOTT DUFFIE		P.O BOX 111 CORNWALL NY 12518	03/03/2020	03/03/2025

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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		SOMATIE RAMSUNAHAI		115-46 132ND ST SOUTH OZONE PARK NY 11420	09/17/2020	09/17/2025
DOL	DOL	*****2221	SOUTH BUFFALO ELECTRIC, INC.		1250 BROADWAY ST BUFFALO NY 14212	02/03/2020	02/03/2025
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
DOL	DOL	*****9528	STEEL-IT, LLC.		17613 SANTE FE LINE ROAD WAYNESFIELD OH 45896	07/16/2021	07/16/2026
DOL	DOL	*****3800	SUBURBAN RESTORATION CO. INC.		5-10 BANTA PLACE FAIR LAWN PLACE NJ 07410	03/29/2021	03/29/2026
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		TERRY THOMPSON		11371 RIDGE RD WOLCOTT NY 14590	02/03/2020	02/03/2025
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	*****5766	THE COKER CORPORATION	COKER CORPORATIO N	2610 SOUTH SALINA ST SUITE 14SYRACUSE NY 13205	09/17/2020	09/17/2025
DOL	DOL	*****2426	THE MATRUKH GROUP, INC.		4307 28TH AVE PO BOX 9082ASTORIA NY 11103	10/11/2024	10/11/2029
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	*****8210	UPSTATE CONCRETE & MASONRY CONTRACTING CO INC		449 WEST MOMBSHA ROAD MONROE NY 10950	06/06/2022	06/06/2027
DOL	DOL	*****6418	VALHALLA CONSTRUCTION, LLC.		796 PHLEPS ROAD FRANKLIN LAKES NJ 07417	12/01/2020	12/01/2025
DOL	NYC	*****2426	VICKRAM MANGRU	VICK CONSTRUCTI ON	21 DAREWOOD LANE VALLEY STREAM NY 11581	09/17/2020	09/17/2025
DOL	NYC		VICKRAM MANGRU		21 DAREWOOD LANE VALLEY STREAM NY 11581	09/17/2020	09/17/2025
DOL	DOL		VIKTORIA RATH		24 ELDOR AVENUE NEW CITY NY 10956	02/03/2020	02/03/2025
DOL	DOL		VINCENT CORRAO		PO BOX 393 NANUET NY 10954	09/17/2024	09/17/2029
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 G. PROERFRIEDT		85 SPRUCEWOOD ROAD WEST BABYLON NY 11704	01/19/2021	01/19/2026
DOL	DOL	*****5924	WILLIAM G. PROPHY, LLC	WGP CONTRACTIN G, INC.	54 PENTAQUIT AVE BAYSHORE NY 11706	01/19/2021	01/19/2026
DOL	DOL		WILLIAM SCRIVENS		4192 SIR ANDREW CIRCLE DOYELSTOWN PA 18902	07/18/2024	07/18/2029

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DOL	DOL		XENOFON EFTHIMIADIS		29-10 38TH AVENUE LONG ISLAND CITY NY 11101	10/11/2023	10/11/2028

ERIE COUNTY DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER

NAME OF BIDDER

BID SUBMITTED BY: _____

PROPOSAL FOR:
SITE CONSTRUCTION WORK
Sports Playing Field Project Phase 1
Erie Community College
6205 Main Street, Williamsville, NY 14221

TO: **William E. Geary**, Commissioner of Public Works
Erie County Department of Public Works
Rath Building, 95 Franklin Street, Suite 1400, Buffalo, NY 14202

Commissioner Geary:

Pursuant to and in compliance with your advertisement for Bids, the undersigned offers to furnish all materials and all plant, labor, supplies, equipment, transportation and other facilities necessary or proper for, or incidental to the construction work, as required by and in strict accord with the contract documents dated 11-27-2024 entitled: *“Erie Community College Sports Playing Field Project Phase 1”* including all Addenda for the following sum of:

BASE BID (including allowance):

_____ /100 DOLLARS (\$))

Completion: We agree to complete this work within _____ calendar days from the Notice to Proceed.

CAUTION: Be advised that Erie County Local Law No. 3-2018 will be enforced. All bidders submitting bids with a value in excess of \$250,000 must adhere to the provisions detailed within this Proposal and Section 10 of the General Conditions. For consideration, bidders must (1) check the appropriate box and (2) enclose the corresponding paperwork.

**ERIE COUNTY DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

CAUTION: ERIE COUNTY EXECUTIVE ORDER #18: The project contemplated by these Bid Specifications may be subject to Erie County Executive Order #18 (“EO #18”) which is included along with its Rules and Regulations for reference in Appendix “D” to the General Conditions of this Bid. All bids with a value that meets or exceeds \$250,000 must include a verified attestation of intent to comply and statement of work force. Such attestation and statement is attached hereto. Any bids received which do not include such attestation or include an incomplete attestation will be deemed non-compliant and will not be considered for award. Should it be determined that the project is subject to EO #18, Contractor must provide county with a fully executed and verified Local and Disadvantaged Worker Compliance Certification prior to final execution of an award agreement.

CAUTION: All compliance reporting required for Erie County Local Law No. 3-2018 and Executive Order #18 shall now be completed via LCPtracker. The County will be available to assist with any reasonable training requests and support, as necessary.

NOTE: Lump-Sum Allowances are to include an Overhead and Profit (O&P) Margin. Unit-Price Allowances are NOT to include an O&P Margin. O&P for unit prices are to be included in the unit price. See Specification 012100 – Allowances for more information.

NOTE: As of April 6, 2021 the County of Erie is requiring a new experience questionnaire form. Please reference Section 5 of the Information to Bidders included within the project manual for detailed information.

SUMMARY OF WORKFORCE, MINORITY/WOMEN BUSINESS, & DISABLED VETERANS BUSINESS COMMITMENT

Requirement	Applicable when Contract value meets or exceeds:	Reference
Erie County Executive Order No.18	\$250,000	General Conditions Section 8.08
New York State Certified Apprenticeship Training Program	\$250,000	General Conditions Section 10
Minority/ Women Business Enterprise & Disabled Veterans Business	\$100,000	General Conditions Section 8.06
General Minority and Women Workforce Goals	All Contracts	General Conditions Section 8.05
Equal Pay Certification	All Contracts	General Conditions Sections 8.04 & 8.07

***Refer to Supplemental General Conditions for any modifications to the above**

**ERIE COUNTY DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

ALLOWANCES

Certain work is specified in the Contract Documents by allowance. The allowances include furnishing all materials and all plant, labor, supplies, equipment, transportation and other facilities necessary or proper for, or incidental to the work. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.

Allowance No. 1 – Rock Removal: See Allowances: Section 012100

ERIE COUNTY DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER

SUBSTITUTIONS

If awarded a contract based on the above proposal, we will use materials and equipment specified with the following exceptions:

<u>ITEMS</u>	<u>MANUFACTURER’S NAME AND PRODUCT DESCRIPTION</u>

It is understood that if any of the above proposed substitutions are not accepted by the Owner, we will furnish the product named in the specifications. Substitutions are not permitted after the award of contract.

ADDENDA:

The foregoing proposal covers the following Addenda:

(Here list, by number, each addendum issued prior to bidding.)

**ERIE COUNTY DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

NON-COLLUSIVE BIDDING CERTIFICATE.

1. By submission of this bid, the bidder and each person signing on behalf of the 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 or its knowledge and belief:
 - a. The prices in this bid have been arrived at independently with no 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; and
 - b. 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; and
 - c. No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit a bid for the purpose of restricting competition; and
 - d. If the bidder is a corporation, this certificate is and shall be deemed to have been authorized by the board of directors of the bidder, and such authorization is and shall be deemed to include the signing and submission of the bid and the inclusion therein of this certificate of non-collusion as the act and deed of the corporation.
2. Pursuant to 103-d, General Municipal Law, a bid shall not be considered for award nor shall any award be made where the above Non-Collusive Certificate, Paragraphs 1, (A), (B), (C), and (D) have not been complied with, unless explained, justified and legally excused in accordance with said law.

This proposal and/or contract shall be governed by New York State Law.

The undersigned agrees together into a contract for the above stated compensation, under the terms and conditions outlined, plus any other conditions mutually agreed upon.

NAME OF FIRM: _____ Federal Tax ID No.: _____

AUTHORIZED SIGNATURE: _____

PRINTED OR TYPEWRITTEN
NAME OF SIGNATORY: _____

TITLE: _____

ADDRESS: _____

PHONE No.: _____ FAX No.: _____

EMAIL ADDRESS: _____

DATE: _____

SEAL IF BIDDER
IS A CORPORATION

**ERIE COUNTY DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

To facilitate correct drawing and execution of contract, Bidders shall supply full information concerning legal status as follows:

NAME: _____
CORPORATION CO-PARTNERSHIP AN INDIVIDUAL TRADE
(Strike out classification not applicable.)

ADDRESS OF PRINCIPAL OFFICE:

Street: _____

City: _____

State: _____

LOCAL BRANCH OFFICE ADDRESS:

INCORPORATED UNDER THE LAWS OF THE STATE OF: _____

If Foreign Corporation, state if authorized to do business in the State of New York: (YES) (NO)

If Co-Partnership, Names of Partners and Addresses are:

If doing business under Trade Name, Assumed Name or Firm Style:

Name of Owner: _____

Certificate Filed: _____

(Place)

(Date)

**ERIE COUNTY DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

**NEW YORK STATE CERTIFIED APPRENTICESHIP
TRAINING PROGRAM CERTIFICATION**

Pursuant to Erie County Local Law 3-2018 the following MUST be submitted along with supporting documentation unless the Contracting Agency has otherwise determined under Section 2f of the Erie County Rules and Regulations that the New York State Certified Apprenticeship Training Program does not apply.

TO BE FILLED OUT BY BIDDER: please check that which applies on sign below.

- ☐ Enclosed is a copy of the certification of approval of the New York State Certified Apprenticeship Training Program (NYSCATP) by the New York State Department of Labor which, as Bidder, will use in connection with the construction contract. Also Enclosed is a written plan demonstrating how apprentices will be utilized by the Bidder As Prime Contractor or by the Subcontractor(s) to the Bidder as Prime Contractor. Such Plan shall include at a minimum:

Please check all items i through vi to acknowledge compliance:

- ☐ i. An organized written plan in place that embodies the terms and conditions of employment, training and supervision of one or more apprentices;
 - ☐ ii. A schedule of wages to be paid to the apprentices consistent with the skills required and approved by the New York State Department of Labor;
 - ☐ iii. Equal employment and affirmative action plans;
 - ☐ iv. Workforce development and diversification goals to ensure that the contractor will diligently work toward a minority workforce goal of 30% minority and female participation combined in project personnel including trades people, trainees, journeymen, apprentices and supervisory staff;
 - ☐ v. A minimum of ten percent (10%) of the total construction workers. Trades people, trainees, journeymen, and apprentices employed at any given time on a particular project by any and all contractors or subcontractors must be consist of persons participating in a NYSCATP; and
 - ☐ vi. In all cases, such Certified Apprenticeship Training Program must be specific to the type and scope of work which is being performed and must have a graduation rate of at least thirty percent (30%) as determined by the New York State Department of Labor.
- ☐ Enclosed is a detailed explanatory written statement as to the inapplicability of Apprenticeship participation due to: the lack of career opportunities in NYSCATP Approved by New York State Department of Labor Commissioner; OR the magnitude of the construction contract which would make use of apprentices impracticable.

SIGNATURE

COMPANY NAME

DATE

**ERIE COUNTY DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

CONTRACTOR'S OWN WORKFORCE

(This form must be submitted with the Contractor's bid proposal)

Pursuant to Section 3.18 – Contractor's Own Workforce, of the General Conditions, the Contractor submitting a bid proposal acknowledges that they will perform a minimum of 25% of the work with their own workforce as follows:

Task	Value of Work
Total Value of Workforce	
Percentage of Total Bid	%

SIGNATURE

COMPANY NAME

DATE

**ERIE COUNTY DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

Erie County Equal Pay Certification

In order to comply with Executive Order 13 dated November 6, 2014, we hereby certify that we are in compliance with federal law, including the Equal Pay Act of 1963, Title VII of the Civil Rights Act of 1964, Federal Executive Order 11246 of September 24, 1965 and New York State Labor Law Section 194 (together "Equal Pay Law"). We understand that this certification is a material component of this contract. Violation of the provisions of Executive Order 13, which is attached hereto and made a part hereof, can constitute grounds for the immediate termination of this contract and may constitute grounds for determining that a bidder is not qualified to participate in future county contracts.

We have evaluated wages and benefits to ensure compliance with the Equal Pay Law. We certify that we have not been the subject of an adverse finding under the Equal Pay Law within the previous five years and, in the alternative, if we were the subject of an adverse finding under the Equal Pay Law within the previous five years, we have annexed a detailed description of the finding(s). In addition, we have annexed a detailed description of any currently pending claims under the Equal Pay Law in which we are involved.

Signature

Verification

A) OWNER/PARTNERSHIP

STATE OF _____)
COUNTY OF _____) SS:

_____, being duly sworn, states he or she is the owner of
(or a partner in) _____, and is making the foregoing
Certification and that the statements and representations made in the Certification are true to his or her
own knowledge.

Sworn to before me this _____ Day of _____, 20__

Notary

B) CORPORATE

STATE OF _____)
COUNTY OF _____) SS:

_____, being duly sworn, states that he or she is the
Name of Corporate Officer
_____, of _____,
Title of Corporate Officer Name of Corporation

the enterprise making the foregoing Certification, that he or she has read the Certification and knows its
contents, that the statements and representations made in the Certification are true to his or her own
knowledge, and that the Certification is made at the direction of the Board of Directors of the
Corporation.

Sworn to before me this _____ Day of _____, 20__

Notary

**ERIE COUNTY DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

**ERIE COUNTY EXECUTIVE ORDER #18
ATTESTATION AND
STATEMENT OF WORKFORCE**

We hereby attest that we have read and understand Erie County Executive Order #18 ("EO #18"). We acknowledge that the project we are bidding on may be subject to the provisions thereof. We further attest that, should we be identified as the successful bidder and should the appropriate individual or entity determine that this project is subject to EO #18, we will be in compliance with such Order, or we will have been granted a partial waiver by the Erie County Office of Equal Employment Opportunity prior to starting work on the project.

We further acknowledge that in order for Erie County to determine if the project we are bidding on is subject to EO #18, they need to analyze the workforce that we intend to use on such project. We therefore now do attest that it is our current intention to use _____#____ construction workers, which number includes any subcontracted construction workers, on this project should it be awarded to us. For purposes of this attestation we understand that construction worker shall mean a laborer, workman, or mechanic who is directly involved in the construction, reconstruction, improvement, rehabilitation, installation, alteration, renovation, demolition or otherwise providing for any building, facility, roads, highways, bridges, or physical structure of any kind, but does not include professional services employees.

Signature

Verification

STATE OF NEW YORK)
COUNTY OF ERIE) SS:

A)

_____, being duly sworn, states he or she is the owner of
(or partner in) _____, and is making the
foregoing Attestation and Statement of Workforce and that such representations made are true to
his or her own knowledge.

B)

_____, being duly sworn, states that he or she is the
(Name of Corporate Officer) _____, of (Name of Corporation
or Enterprise) _____, that he or she has read the Attestation
and Statement of Workforce and that such representations made are true to his or her knowledge,
and are made at the direction of the Board of Directors of the Corporation.

Sworn to before me this _____
Day of _____. 20____

Notary Public

**ERIE COUNTY DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

ACKNOWLEDGMENT OF DRUG AND ALCOHOL TESTING COMPLIANCE

_____ hereby acknowledges that a drug
(PRINT OR TYPE COMPANY NAME)
and alcohol program, which is required by Federal Department of Transportation rules (CFR, Title 49, Part 40 and 382), has been implemented by this Company. The program is administered by:

(PLEASE SELECT ONE)

() The Company itself - The program administrator is:

(Company Administrator's Name and Telephone Number)

() Third - Party Administrator - The program administrator is:

(Third - Party Administrator's Name)

(Address)

(Contact Person/Telephone)

(Company's Official's Name)

(Signature)

(Date)

Subscribed to before me on

_____, day of _____ 20__

Notary Public

Due to the safety-sensitive nature of the work which your Commercial Driver Licensed (CDL) employees may perform on this project, you are required to implement a drug and alcohol testing program which follows Federal Department of Transportation rules (CFR, Title 49, Parts 40 and 382). Further, as a condition of your contract, you must also submit proof of your compliance via this form to the Erie County Department of Public Works, office of the Commissioner.

This form must be signed and returned to the Commissioner of Public Works, 14th Floor, Rath Building, 95 Franklin Street, Buffalo, NY, no later than three (3) working days after the bid opening.

ERIE COUNTY DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER

NAME OF BIDDER

BID SUBMITTED BY: _____

PROPOSAL FOR:
ELECTRICAL CONSTRUCTION WORK
Sports Playing Field Project Phase 1
Erie Community College
6205 Main Street, Williamsville, NY 14221

TO: **William E. Geary**, Commissioner of Public Works
Erie County Department of Public Works
Rath Building, 95 Franklin Street, Suite 1400, Buffalo, NY 14202

Commissioner Geary:

Pursuant to and in compliance with your advertisement for Bids, the undersigned offers to furnish all materials and all plant, labor, supplies, equipment, transportation and other facilities necessary or proper for, or incidental to the construction work, as required by and in strict accord with the contract documents dated 11-27-2024 entitled: *“Erie Community College Sports Playing Field Project Phase 1”* including all Addenda for the following sum of:

BASE BID (including allowance):

_____ /100 DOLLARS (\$))

Completion: We agree to complete this work within _____ calendar days from the Notice to Proceed.

CAUTION: Be advised that Erie County Local Law No. 3-2018 will be enforced. All bidders submitting bids with a value in excess of \$250,000 must adhere to the provisions detailed within this Proposal and Section 10 of the General Conditions. For consideration, bidders must (1) check the appropriate box and (2) enclose the corresponding paperwork.

**ERIE COUNTY DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

CAUTION: ERIE COUNTY EXECUTIVE ORDER #18: The project contemplated by these Bid Specifications may be subject to Erie County Executive Order #18 (“EO #18”) which is included along with its Rules and Regulations for reference in Appendix “D” to the General Conditions of this Bid. All bids with a value that meets or exceeds \$250,000 must include a verified attestation of intent to comply and statement of work force. Such attestation and statement is attached hereto. Any bids received which do not include such attestation or include an incomplete attestation will be deemed non-compliant and will not be considered for award. Should it be determined that the project is subject to EO #18, Contractor must provide county with a fully executed and verified Local and Disadvantaged Worker Compliance Certification prior to final execution of an award agreement.

CAUTION: All compliance reporting required for Erie County Local Law No. 3-2018 and Executive Order #18 shall now be completed via LCPtracker. The County will be available to assist with any reasonable training requests and support, as necessary.

NOTE: Lump-Sum Allowances are to include an Overhead and Profit (O&P) Margin. Unit-Price Allowances are NOT to include an O&P Margin. O&P for unit prices are to be included in the unit price. See Specification 012100 – Allowances for more information.

NOTE: As of April 6, 2021 the County of Erie is requiring a new experience questionnaire form. Please reference Section 5 of the Information to Bidders included within the project manual for detailed information.

SUMMARY OF WORKFORCE, MINORITY/WOMEN BUSINESS, & DISABLED VETERANS BUSINESS COMMITMENT

Requirement	Applicable when Contract value meets or exceeds:	Reference
Erie County Executive Order No.18	\$250,000	General Conditions Section 8.08
New York State Certified Apprenticeship Training Program	\$250,000	General Conditions Section 10
Minority/ Women Business Enterprise & Disabled Veterans Business	\$100,000	General Conditions Section 8.06
General Minority and Women Workforce Goals	All Contracts	General Conditions Section 8.05
Equal Pay Certification	All Contracts	General Conditions Sections 8.04 & 8.07

***Refer to Supplemental General Conditions for any modifications to the above**

**ERIE COUNTY DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

ALLOWANCES

Certain work is specified in the Contract Documents by allowance. The allowances include furnishing all materials and all plant, labor, supplies, equipment, transportation and other facilities necessary or proper for, or incidental to the work. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.

Allowance No. 1 – Rock Removal: See Allowances: Section 012100

ERIE COUNTY DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER

SUBSTITUTIONS

If awarded a contract based on the above proposal, we will use materials and equipment specified with the following exceptions:

<u>ITEMS</u>	<u>MANUFACTURER’S NAME AND PRODUCT DESCRIPTION</u>

It is understood that if any of the above proposed substitutions are not accepted by the Owner, we will furnish the product named in the specifications. Substitutions are not permitted after the award of contract.

ADDENDA:

The foregoing proposal covers the following Addenda:

(Here list, by number, each addendum issued prior to bidding.)

**ERIE COUNTY DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

NON-COLLUSIVE BIDDING CERTIFICATE.

1. By submission of this bid, the bidder and each person signing on behalf of the 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 or its knowledge and belief:
 - a. The prices in this bid have been arrived at independently with no 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; and
 - b. 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; and
 - c. No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit a bid for the purpose of restricting competition; and
 - d. If the bidder is a corporation, this certificate is and shall be deemed to have been authorized by the board of directors of the bidder, and such authorization is and shall be deemed to include the signing and submission of the bid and the inclusion therein of this certificate of non-collusion as the act and deed of the corporation.
2. Pursuant to 103-d, General Municipal Law, a bid shall not be considered for award nor shall any award be made where the above Non-Collusive Certificate, Paragraphs 1, (A), (B), (C), and (D) have not been complied with, unless explained, justified and legally excused in accordance with said law.

This proposal and/or contract shall be governed by New York State Law.

The undersigned agrees together into a contract for the above stated compensation, under the terms and conditions outlined, plus any other conditions mutually agreed upon.

NAME OF FIRM: _____ Federal Tax ID No.: _____

AUTHORIZED SIGNATURE: _____

PRINTED OR TYPEWRITTEN
NAME OF SIGNATORY: _____

TITLE: _____

ADDRESS: _____

PHONE No.: _____ FAX No.: _____

EMAIL ADDRESS: _____

DATE: _____

SEAL IF BIDDER
IS A CORPORATION

**ERIE COUNTY DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

To facilitate correct drawing and execution of contract, Bidders shall supply full information concerning legal status as follows:

NAME: _____
CORPORATION CO-PARTNERSHIP AN INDIVIDUAL TRADE
(Strike out classification not applicable.)

ADDRESS OF PRINCIPAL OFFICE:

Street: _____

City: _____

State: _____

LOCAL BRANCH OFFICE ADDRESS:

INCORPORATED UNDER THE LAWS OF THE STATE OF: _____

If Foreign Corporation, state if authorized to do business in the State of New York: (YES) (NO)

If Co-Partnership, Names of Partners and Addresses are:

If doing business under Trade Name, Assumed Name or Firm Style:

Name of Owner: _____

Certificate Filed: _____

(Place)

(Date)

**ERIE COUNTY DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

**NEW YORK STATE CERTIFIED APPRENTICESHIP
TRAINING PROGRAM CERTIFICATION**

Pursuant to Erie County Local Law 3-2018 the following MUST be submitted along with supporting documentation unless the Contracting Agency has otherwise determined under Section 2f of the Erie County Rules and Regulations that the New York State Certified Apprenticeship Training Program does not apply.

TO BE FILLED OUT BY BIDDER: please check that which applies on sign below.

- ☐ Enclosed is a copy of the certification of approval of the New York State Certified Apprenticeship Training Program (NYSCATP) by the New York State Department of Labor which, as Bidder, will use in connection with the construction contract. Also Enclosed is a written plan demonstrating how apprentices will be utilized by the Bidder As Prime Contractor or by the Subcontractor(s) to the Bidder as Prime Contractor. Such Plan shall include at a minimum:

Please check all items i through vi to acknowledge compliance:

- ☐ i. An organized written plan in place that embodies the terms and conditions of employment, training and supervision of one or more apprentices;
 - ☐ ii. A schedule of wages to be paid to the apprentices consistent with the skills required and approved by the New York State Department of Labor;
 - ☐ iii. Equal employment and affirmative action plans;
 - ☐ iv. Workforce development and diversification goals to ensure that the contractor will diligently work toward a minority workforce goal of 30% minority and female participation combined in project personnel including trades people, trainees, journeymen, apprentices and supervisory staff;
 - ☐ v. A minimum of ten percent (10%) of the total construction workers. Trades people, trainees, journeymen, and apprentices employed at any given time on a particular project by any and all contractors or subcontractors must be consist of persons participating in a NYSCATP; and
 - ☐ vi. In all cases, such Certified Apprenticeship Training Program must be specific to the type and scope of work which is being performed and must have a graduation rate of at least thirty percent (30%) as determined by the New York State Department of Labor.
- ☐ Enclosed is a detailed explanatory written statement as to the inapplicability of Apprenticeship participation due to: the lack of career opportunities in NYSCATP Approved by New York State Department of Labor Commissioner; OR the magnitude of the construction contract which would make use of apprentices impracticable.

SIGNATURE

COMPANY NAME

DATE

**ERIE COUNTY DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

CONTRACTOR'S OWN WORKFORCE

(This form must be submitted with the Contractor's bid proposal)

Pursuant to Section 3.18 – Contractor's Own Workforce, of the General Conditions, the Contractor submitting a bid proposal acknowledges that they will perform a minimum of 25% of the work with their own workforce as follows:

Task	Value of Work
Total Value of Workforce	
Percentage of Total Bid	%

SIGNATURE

COMPANY NAME

DATE

**ERIE COUNTY DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

Erie County Equal Pay Certification

In order to comply with Executive Order 13 dated November 6, 2014, we hereby certify that we are in compliance with federal law, including the Equal Pay Act of 1963, Title VII of the Civil Rights Act of 1964, Federal Executive Order 11246 of September 24, 1965 and New York State Labor Law Section 194 (together "Equal Pay Law"). We understand that this certification is a material component of this contract. Violation of the provisions of Executive Order 13, which is attached hereto and made a part hereof, can constitute grounds for the immediate termination of this contract and may constitute grounds for determining that a bidder is not qualified to participate in future county contracts.

We have evaluated wages and benefits to ensure compliance with the Equal Pay Law. We certify that we have not been the subject of an adverse finding under the Equal Pay Law within the previous five years and, in the alternative, if we were the subject of an adverse finding under the Equal Pay Law within the previous five years, we have annexed a detailed description of the finding(s). In addition, we have annexed a detailed description of any currently pending claims under the Equal Pay Law in which we are involved.

Signature

Verification

A) OWNER/PARTNERSHIP

STATE OF _____)
COUNTY OF _____) SS:

_____, being duly sworn, states he or she is the owner of
(or a partner in) _____, and is making the foregoing
Certification and that the statements and representations made in the Certification are true to his or her
own knowledge.

Sworn to before me this _____ Day of _____, 20__

Notary

B) CORPORATE

STATE OF _____)
COUNTY OF _____) SS:

_____, being duly sworn, states that he or she is the
Name of Corporate Officer
_____, of _____,
Title of Corporate Officer Name of Corporation

the enterprise making the foregoing Certification, that he or she has read the Certification and knows its
contents, that the statements and representations made in the Certification are true to his or her own
knowledge, and that the Certification is made at the direction of the Board of Directors of the
Corporation.

Sworn to before me this _____ Day of _____, 20__

Notary

**ERIE COUNTY DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

**ERIE COUNTY EXECUTIVE ORDER #18
ATTESTATION AND
STATEMENT OF WORKFORCE**

We hereby attest that we have read and understand Erie County Executive Order #18 ("EO #18"). We acknowledge that the project we are bidding on may be subject to the provisions thereof. We further attest that, should we be identified as the successful bidder and should the appropriate individual or entity determine that this project is subject to EO #18, we will be in compliance with such Order, or we will have been granted a partial waiver by the Erie County Office of Equal Employment Opportunity prior to starting work on the project.

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Verification

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COUNTY OF ERIE) SS:

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_____, being duly sworn, states that he or she is the
(Name of Corporate Officer) _____, of (Name of Corporation
or Enterprise) _____, that he or she has read the Attestation
and Statement of Workforce and that such representations made are true to his or her knowledge,
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Notary Public

**ERIE COUNTY DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

ACKNOWLEDGMENT OF DRUG AND ALCOHOL TESTING COMPLIANCE

_____ hereby acknowledges that a drug
(PRINT OR TYPE COMPANY NAME)
and alcohol program, which is required by Federal Department of Transportation rules (CFR, Title 49, Part 40 and 382), has been implemented by this Company. The program is administered by:

(PLEASE SELECT ONE)

() The Company itself - The program administrator is:

(Company Administrator's Name and Telephone Number)

() Third - Party Administrator - The program administrator is:

(Third - Party Administrator's Name)

(Address)

(Contact Person/Telephone)

(Company's Official's Name)

(Signature)

(Date)

Subscribed to before me on

_____, day of _____ 20__

Notary Public

Due to the safety-sensitive nature of the work which your Commercial Driver Licensed (CDL) employees may perform on this project, you are required to implement a drug and alcohol testing program which follows Federal Department of Transportation rules (CFR, Title 49, Parts 40 and 382). Further, as a condition of your contract, you must also submit proof of your compliance via this form to the Erie County Department of Public Works, office of the Commissioner.

This form must be signed and returned to the Commissioner of Public Works, 14th Floor, Rath Building, 95 Franklin Street, Buffalo, NY, no later than three (3) working days after the bid opening.

NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE FOR-PROFIT CONSTRUCTION (CCA-2)

You have selected the For-Profit Construction questionnaire, commonly known as the “CCA-2,” which may be printed and completed in this format or, **for your convenience, may be completed online using the [New York State VendRep System](#).**

COMPLETION & CERTIFICATION

The person(s) completing the questionnaire must be knowledgeable about the vendor’s business and operations. An owner or official must certify the questionnaire and the signature must be notarized.

NEW YORK STATE VENDOR IDENTIFICATION NUMBER (VENDOR ID)

The Vendor ID is a ten-digit identifier issued by New York State when the vendor is registered on the Statewide Vendor File. This number must now be included on the questionnaire. If the business entity has not obtained a Vendor ID, contact the IT Service Desk at ITServiceDesk@osc.state.ny.us or call 866-370-4672.

DEFINITIONS

All underlined terms are defined in the “New York State Vendor Responsibility Definitions List,” found at <http://www.osc.state.ny.us/vendrep/documents/questionnaire/definitions.pdf>. These terms may not have their ordinary, common or traditional meanings. Each vendor is strongly encouraged to read the respective definitions for any and all underlined terms. By submitting this questionnaire, the vendor agrees to be bound by the terms as defined in the "New York State Vendor Responsibility Definitions List" existing at the time of certification.

RESPONSES

Every question must be answered. Each response must provide all relevant information which can be obtained within the limits of the law. However, information regarding a determination or finding made in error which was subsequently corrected or overturned, and/or was withdrawn by the issuing government entity, is not required. Individuals and Sole Proprietors may use a Social Security Number but are encouraged to obtain and use a federal Employer Identification Number (EIN).

NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE FOR-PROFIT CONSTRUCTION (CCA-2)

BUSINESS ENTITY INFORMATION

<u>Legal Business Name</u>		<u>EIN</u> _____		
Address of the <u>Principal Place of Business</u> (street, city, state, zip code)		<u>New York State Vendor Identification Number</u>		
		Telephone ext.	Fax	
		Website		
Authorized Contact for this Questionnaire				
Name		Telephone ext.	Fax	
Title		Email		
Additional <u>Business Entity</u> Identities: If applicable, list any other <u>DBA</u> , <u>Trade Name</u> , <u>Former Name</u> , Other Identity, or <u>EIN</u> used in the last five (5) years, the state or county where filed and the status (active or inactive).				
Type	Name	EIN	State or County where filed	Status

I. BUSINESS CHARACTERISTICS

1.0 <u>Business Entity</u> Type – Check appropriate box and provide additional information:			
a) ☐ <u>Corporation</u> (including <u>PC</u>)	Date of Incorporation		
b) ☐ <u>Limited Liability Company</u> (LLC or PLLC)	Date Organized		
c) ☐ <u>Limited Liability Partnership</u>	Date of Registration		
d) ☐ <u>Limited Partnership</u>	Date Established		
e) ☐ <u>General Partnership</u>	Date Established	County (if formed in NYS)	
f) ☐ <u>Sole Proprietor</u>	How many years in business?		
g) ☐ Other	Date Established		
If Other, explain:			
1.1 Was the <u>Business Entity</u> formed in New York State?			☐ Yes ☐ No
If “No,” indicate jurisdiction where the <u>Business Entity</u> was formed:			
☐ United States	State		
☐ Other	Country		

NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE FOR-PROFIT CONSTRUCTION (CCA-2)

I. BUSINESS CHARACTERISTICS			
1.2 Is the <u>Legal Business Entity</u> publicly traded?			☐ Yes ☐ No
If "Yes," provide the <u>CIK code</u> or Ticker Symbol:			
1.3 Is the <u>Business Entity</u> currently <u>registered to do business in New York State</u> ?			☐ Yes ☐ No
Note: Select "Not Required" if the Business Entity is a Sole Proprietor or General Partnership			☐ Not Required
If "No," explain why the <u>Business Entity</u> is not required to be <u>registered to do business in New York State</u> :			
1.4 Is the responding <u>Business Entity</u> a <u>Joint Venture</u> ? Note: If the submitting <u>Business Entity</u> is a <u>Joint Venture</u> , also submit a separate questionnaire for each <u>Business Entity</u> comprising the <u>Joint Venture</u> .			☐ Yes ☐ No
1.5 If the <u>Business Entity's Principal Place of Business</u> is not in New York State, does the <u>Business Entity</u> maintain an office in New York State?			☐ Yes ☐ No
(Select "N/A" if <u>Principal Place of Business</u> is in New York State.)			☐ N/A
If "Yes," provide the address and telephone number for one office located in New York State.			
1.6 Is the Business Entity a New York State certified <u>Minority-Owned Business Enterprise</u> , or <u>Women-Owned Business Enterprise</u> , or <u>New York State Small Business</u> , or federally certified <u>Disadvantaged Business Enterprise</u> ?			☐ Yes ☐ No
If "Yes," check all that apply: ☐ New York State certified <u>Minority-Owned Business Enterprise</u> (MBE) ☐ New York State certified <u>Women-Owned Business Enterprise</u> (WBE) ☐ <u>New York State Small Business</u> ☐ Federally certified <u>Disadvantaged Business Enterprise</u> (DBE)			
1.7 Identify each person or business entity that is, or has been within the past five (5) years, <u>Principal Owner</u> of 5.0% or more of the firm's shares; a Business Entity Official; or one of the five largest shareholders, if applicable. (Attach additional pages if necessary.) <u>Joint Ventures</u> : Provide information for all firms involved.			
Name (For each person, include middle initial)	Title	Percentage of ownership (Enter 0%, if not applicable)	Employment status with the firm
			☐ Current ☐ Former
			☐ Current ☐ Former
			☐ Current ☐ Former
			☐ Current ☐ Former

NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE FOR-PROFIT CONSTRUCTION (CCA-2)

II. AFFILIATE and JOINT VENTURE RELATIONSHIPS		
2.0 Are there any other <u>construction</u> -related firms in which, now or in the past five years, the submitting <u>Business Entity</u> or any of the individuals or business entities listed in question 1.7 either owned or owns 5.0% or more of the shares of, or was or is one of the five largest shareholders or a director, officer, partner or proprietor of said other firm? <i>(Attach additional pages if necessary.)</i>		☐ Yes ☐ No
Firm/Company Name	Firm/Company EIN (If available)	Firm/Company's Primary Business Activity
Firm/Company Address		
Explain relationship with the firm and indicate percent of ownership, if applicable (enter N/A, if not applicable):		
Are there any shareholders, directors, officers, owners, partners or proprietors that the submitting <u>Business Entity</u> has in common with this firm?		☐ Yes ☐ No
Individual's Name <i>(Include middle initial)</i>	Position/Title with Firm/Company	
2.1 Does the <u>Business Entity</u> have any <u>construction</u> -related <u>affiliates</u> not identified in the response to question 2.0 above? <i>(Attach additional pages if necessary.)</i>		☐ Yes ☐ No
Affiliate Name	Affiliate EIN (If available)	Affiliate's Primary Business Activity
Affiliate Address		
Explain relationship with the affiliate and indicate percent of ownership, if applicable <i>(enter N/A, if not applicable)</i> :		
Are there any shareholders, directors, officers, owners, partners or proprietors that the submitting Business Entity has in common with this affiliate?		☐ Yes ☐ No
Individual's Name <i>(Include middle initial)</i>	Position/Title with Firm/Company	
2.2 Has the <u>Business Entity</u> participated in any <u>construction-related Joint Ventures</u> within the past three (3) years? <i>(Attach additional pages if necessary.)</i>		☐ Yes ☐ No
Joint Venture Name	Joint Venture EIN (If available)	Identify parties to the Joint Venture

NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE FOR-PROFIT CONSTRUCTION (CCA-2)

III. CONTRACT HISTORY

3.0 Has the Business Entity completed any construction contracts? ☐ Yes ☐ No

If "Yes," list the ten most recent construction contracts the Business Entity has completed using Attachment A – Completed Construction Contracts, found at www.osc.state.ny.us/vendrep/documents/questionnaire/ac3294s.doc.

If less than ten, include most recent subcontracts on projects up to that number.

3.1 Does the Business Entity currently have uncompleted construction contracts? ☐ Yes ☐ No

If "Yes," list all current uncompleted construction contracts by using Attachment B – Uncompleted Construction Contracts, found at www.osc.state.ny.us/vendrep/documents/questionnaire/ac3295s.doc.

Note: Ongoing projects must be included.

IV. INTEGRITY – CONTRACT BIDDING

Within the past five (5) years, has the Business Entity, an affiliate, or any predecessor company or entity:

4.0 Been suspended or debarred from any government contracting process or been disqualified on any government procurement? ☐ Yes ☐ No

4.1 Been subject to a denial or revocation of a government prequalification? ☐ Yes ☐ No

4.2 Had any bid rejected by a government entity for lack of qualifications, responsibility or because of the submission of an informal, non-responsive or incomplete bid? ☐ Yes ☐ No

4.3 Had a proposed subcontract rejected by a government entity for lack of qualifications, responsibility or because of the submission of an informal, non-responsive or incomplete bid? ☐ Yes ☐ No

4.4 Had a low bid rejected on a government contract for failure to make good faith efforts on any Minority-Owned Business Enterprise, Women-Owned Business Enterprise or Disadvantaged Business Enterprise goal or statutory affirmative action requirements on a previously held contract? ☐ Yes ☐ No

4.5 Agreed to a voluntary exclusion from bidding/contracting with a government entity? ☐ Yes ☐ No

4.6 Initiated a request to withdraw a bid submitted to a government entity or made any claim of an error on a bid submitted to a government entity? ☐ Yes ☐ No

For each "Yes," provide an explanation of the issue(s), the Business Entity involved, the relationship to the submitting Business Entity, the government entity involved, project(s), relevant dates, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer(s) below or attach additional sheets with numbered responses.

V. INTEGRITY – CONTRACT AWARD

Within the past five (5) years, has the Business Entity, an affiliate, or any predecessor company or entity:

5.0 Defaulted on or been suspended, cancelled or terminated for cause on any contract? ☐ Yes ☐ No

5.1 Been subject to an administrative proceeding or civil action seeking specific performance or restitution (except any disputed work proceeding) in connection with any government contract? ☐ Yes ☐ No

5.2 Entered into a formal monitoring agreement, consent decree or stipulation settlement as specified by, or agreed to with, any government entity? ☐ Yes ☐ No

5.3 Had its surety called upon to complete any contract whether government or private sector? ☐ Yes ☐ No

5.4 Forfeited all or part of a standby letter of credit in connection with any government contract? ☐ Yes ☐ No

NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE FOR-PROFIT CONSTRUCTION (CCA-2)

V. INTEGRITY – CONTRACT AWARD

Within the past five (5) years, has the Business Entity, an affiliate, or any predecessor company or entity:

For each “Yes,” provide an explanation of the issue(s), the Business Entity involved, the relationship to the submitting Business Entity, the government entity/owners involved, project(s), contract number(s), relevant dates, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer(s) below or attach additional sheets with numbered responses.

VI. CERTIFICATIONS/LICENSES

Within the past five (5) years, has the Business Entity, an affiliate, or any predecessor company or entity:

6.0 Had a revocation or <u>suspension</u> of any business or professional permit and/or license?	☐ Yes ☐ No

6.1 Had a denial, decertification, revocation or forfeiture of New York State certification of <u>Minority-Owned Business Enterprise</u> , <u>Women-Owned Business Enterprise</u> or a federal certification of <u>Disadvantaged Business Enterprise</u> status, for other than a change of ownership?	☐ Yes ☐ No

For each “Yes,” provide an explanation of the issue(s), the Business Entity involved, the relationship to the submitting Business Entity, the government entity involved, relevant dates, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer(s) below or attach additional sheets with numbered responses.

VII. LEGAL PROCEEDINGS/GOVERNMENT INVESTIGATIONS

Within the past five (5) years, has the Business Entity, an affiliate, or any predecessor company or entity:

7.0 Been the subject of a criminal <u>investigation</u> , whether open or closed, or an indictment for any business-related conduct constituting a crime under local, state or <u>federal</u> law?	☐ Yes ☐ No

7.1 Been the subject of:	
(i.) An indictment, grant of immunity, <u>judgment</u> or conviction (including entering into a plea bargain) for conduct constituting a crime; or	☐ Yes ☐ No
(ii.) Any criminal <u>investigation</u> , felony indictment or conviction concerning the formation of, or any business association with, an allegedly false or fraudulent <u>Minority-Owned Business Enterprise</u> , <u>Women-Owned Business Enterprise</u> , or a <u>Disadvantaged Business Enterprise</u> ?	☐ Yes ☐ No

7.2 Received any <u>OSHA</u> citation, which resulted in a final determination classified as <u>serious</u> or <u>willful</u> ?	☐ Yes ☐ No

7.3 Had a <u>government entity</u> find a willful prevailing wage or supplemental payment violation?	☐ Yes ☐ No

7.4 Had a New York State Labor Law violation deemed willful?	☐ Yes ☐ No

7.5 Entered into a consent order with the New York State Department of Environmental Conservation, or a <u>federal</u> , state or local government enforcement determination involving a violation of <u>federal</u> , state or local environmental laws?	☐ Yes ☐ No

NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE FOR-PROFIT CONSTRUCTION (CCA-2)

VII. LEGAL PROCEEDINGS/GOVERNMENT INVESTIGATIONS

Within the past five (5) years, has the Business Entity, an affiliate, or any predecessor company or entity:

7.6 Other than previously disclosed, been the subject of any <u>citations</u>, notices or violation orders; a pending administrative hearing, proceeding or determination of a violation of: • <u>Federal</u>, state or local health laws, rules or regulations; • <u>Federal</u>, state or local environmental laws, rules or regulations; • Unemployment insurance or workers compensation coverage or <u>claim</u> requirements; • Any labor law or regulation, which was deemed willful; • Employee Retirement Income Security Act (ERISA); • <u>Federal</u>, state or local human rights laws; • <u>Federal</u>, state or local security laws?	☐ Yes ☐ No

For each "Yes," provide an explanation of the issue(s), the Business Entity involved, the relationship to the submitting Business Entity, the government entity involved, relevant dates, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer(s) below or attach additional sheets with numbered responses.

Note: Information regarding a determination or finding made in error, which was subsequently corrected or overturned, and/or was withdrawn by the issuing government entity, is not required.

VIII. LEADERSHIP INTEGRITY

If the Business Entity is a Joint Venture Entity, answer "N/A - Not Applicable" to questions in this section.

Within the past five (5) years has any individual previously identified or any individual currently or formerly having the authority to sign, execute or approve bids, proposals, contracts or supporting documentation on behalf of the Business Entity with any government entity been:

8.0 <u>Sanctioned</u> relative to any business or professional permit and/or license?	☐ Yes ☐ No ☐ N/A
8.1 <u>Suspended</u>, <u>debarred</u> or <u>disqualified</u> from any <u>government contracting process</u>?	☐ Yes ☐ No ☐ N/A
8.2 The subject of a criminal <u>investigation</u>, whether open or closed, or an indictment for any business-related conduct constituting a crime under local, state or <u>federal</u> law?	☐ Yes ☐ No ☐ N/A
8.3 Charged with a misdemeanor or felony, indicted, granted immunity, convicted of a crime or subject to a judgment for: (i.) Any business-related activity, including but not limited to fraud, coercion, extortion, bribe or bribe-receiving, giving or accepting unlawful gratuities, immigration or tax fraud, racketeering, mail fraud, wire fraud, price-fixing or collusive bidding; or (ii.) Any crime, whether or not business-related, the underlying conduct of which related to truthfulness, including but not limited to the filing of false documents or false sworn statements, perjury or larceny	☐ Yes ☐ No ☐ N/A

For each "Yes," provide an explanation of the issue(s), the individual involved, the relationship to the submitting Business Entity, the government entity involved, relevant dates, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer(s) below or attach additional sheets with numbered responses.

NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE FOR-PROFIT CONSTRUCTION (CCA-2)

IX. FINANCIAL AND ORGANIZATIONAL CAPACITY

9.0 Within the past five (5) years, has the Business Entity or any affiliate received any formal unsatisfactory performance assessment(s) from any government entity on any contract? ☐ Yes ☐ No

If "Yes," provide an explanation of the issue(s), the Business Entity involved, the relationship to the submitting Business Entity, the government entity involved, relevant dates, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer below or attach additional sheets with numbered responses.

9.1 Within the past five (5) years, has the Business Entity or any affiliate had any liquidated damages assessed over \$25,000? ☐ Yes ☐ No

If "Yes," provide an explanation of the issue(s), the Business Entity involved, the relationship to the submitting Business Entity, relevant dates, the contracting party involved, the amount assessed and the current status of the issue(s). Provide answer below or attach additional sheets with numbered responses.

9.2 Within the past five (5) years, has the Business Entity or any affiliate had any liens, claims or judgments over \$25,000 filed against the Business Entity which remain undischarged or were unsatisfied for more than 90 days? (Note: Including but not limited to tax warrants or liens. Do not include UCC filings.) ☐ Yes ☐ No

If "Yes," provide an explanation of the issue(s), the Business Entity involved, the relationship to the submitting Business Entity, relevant dates, the Lien holder or Claimants' name(s), the amount of the lien(s) and the current status of the issue(s). Provide answer below or attach additional sheets with numbered responses.

9.3 In the last seven (7) years, has the Business Entity or any affiliate initiated or been the subject of any bankruptcy proceedings, whether or not closed, or is any bankruptcy proceeding pending? ☐ Yes ☐ No

If "Yes," provide the Business Entity involved, the relationship to the submitting Business Entity, the bankruptcy chapter number, the court name and the docket number. Indicate the current status of the proceedings as "Initiated," "Pending" or "Closed." Provide answer below or attach additional sheets with numbered responses.

9.4 What is the Business Entity's Bonding Capacity?

a. Single Project

b. Aggregate (All Projects)

9.5 List Business Entity's Gross Sales for the previous three (3) Fiscal Years:

1st Year (Indicate year)
Gross Sales

2nd Year (Indicate year)
Gross Sales

3rd Year (Indicate year)
Gross Sales

9.6 List Business Entity's Average Backlog for the previous three (3) fiscal years:
(Estimated total value of uncompleted work on outstanding contracts)

1st Year (Indicate year)
Amount

2nd Year (Indicate year)
Amount

3rd Year (Indicate year)
Amount

9.7 Attach Business Entity's most recent annual financial statement and accompanying notes or complete Attachment C – Financial Information, found at www.osc.state.ny.us/vendrep/documents/questionnaire/ac3296s.xls.
(This information must be attached.)

**NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT CONSTRUCTION (CCA-2)**

X. FREEDOM OF INFORMATION LAW (FOIL)

10.0 Indicate whether any information provided herein is believed to be exempt from disclosure under the Freedom of Information Law (FOIL).

☐ Yes ☐ No

Note: A determination of whether such information is exempt from FOIL will be made at the time of any request for disclosure under FOIL. Attach additional pages if necessary.

If "Yes," indicate the question number(s) and explain the basis for the claim.

NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE FOR-PROFIT CONSTRUCTION (CCA-2)

Certification

The undersigned: (1) recognizes that this questionnaire is submitted for the express purpose of assisting New York State government entities (including the Office of the State Comptroller (OSC)) in making responsibility determinations regarding award or approval of a contract or subcontract and that such government entities will rely on information disclosed in the questionnaire in making responsibility determinations; (2) acknowledges that the New York State government entities and OSC may, in their discretion, by means which they may choose, verify the truth and accuracy of all statements made herein; and (3) acknowledges that intentional submission of false or misleading information may result in criminal penalties under State and/or Federal Law, as well as a finding of non-responsibility, contract suspension or contract termination.

The undersigned certifies that he/she:

- is knowledgeable about the submitting Business Entity's business and operations;
- has read and understands all of the questions contained in the questionnaire;
- has not altered the content of the questionnaire in any manner;
- has reviewed and/or supplied full and complete responses to each question;
- to the best of his/her knowledge, information and belief, confirms that the Business Entity's responses are true, accurate and complete, including all attachments, if applicable;
- understands that New York State government entities will rely on the information disclosed in the questionnaire when entering into a contract with the Business Entity; and
- is under an obligation to update the information provided herein to include any material changes to the Business Entity's responses at the time of bid/proposal submission through the contract award notification, and may be required to update the information at the request of the New York State government entities or OSC prior to the award and/or approval of a contract, or during the term of the contract.

Signature of Owner/Official _____

Printed Name of Signatory _____

Title _____

Name of Business _____

Address _____

City, State, Zip _____

Sworn to before me this _____ day of _____, 20____;

_____ Notary Public

NEW YORK STATE
VENDOR RESPONSIBILITY QUESTIONNAIRE
ATTACHMENT A – COMPLETED CONSTRUCTION CONTRACTS

Vendor Name:

NYS Vendor ID:

Question 3.0: List the ten most recent construction contracts the Business Entity has completed. If less than ten, include most recent subcontracts on projects up to that number:

1.	Agency/Owner			Award Date	Amount	Date Completed
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable
2.	Agency/Owner			Award Date	Amount	Date Completed
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable
3.	Agency/Owner			Award Date	Amount	Date Completed
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable
4.	Agency/Owner			Award Date	Amount	Date Completed
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable
5.	Agency/Owner			Award Date	Amount	Date Completed
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable

NEW YORK STATE
VENDOR RESPONSIBILITY QUESTIONNAIRE
ATTACHMENT A – COMPLETED CONSTRUCTION CONTRACTS

Vendor Name:

NYS Vendor ID:

Question 3.0: List the ten most recent construction contracts the Business Entity has completed. If less than ten, include most recent subcontracts on projects up to that number:

6.	Agency/Owner			Award Date	Amount	Date Completed
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable		EIN of JV, if applicable	
7.	Agency/Owner			Award Date	Amount	Date Completed
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable		EIN of JV, if applicable	
8.	Agency/Owner			Award Date	Amount	Date Completed
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable		EIN of JV, if applicable	
9.	Agency/Owner			Award Date	Amount	Date Completed
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable		EIN of JV, if applicable	
10.	Agency/Owner			Award Date	Amount	Date Completed
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer		
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable		EIN of JV, if applicable	

NEW YORK STATE
VENDOR RESPONSIBILITY QUESTIONNAIRE
ATTACHMENT B – UNCOMPLETED CONSTRUCTION CONTRACTS

Vendor Name:**NYS Vendor ID:**
Question 3.1: List all current uncompleted construction contracts:

1.	Agency/Owner					Award Date	Completion Date
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer			
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable	
			Total Contract Amount	Amount Sublet to others	Uncompleted Amount		
2.	Agency/Owner					Award Date	Completion Date
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer			
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable	
			Total Contract Amount	Amount Sublet to others	Uncompleted Amount		
3.	Agency/Owner					Award Date	Completion Date
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer			
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable	
			Total Contract Amount	Amount Sublet to others	Uncompleted Amount		
4.	Agency/Owner					Award Date	Completion Date
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer			
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable	
			Total Contract Amount	Amount Sublet to others	Uncompleted Amount		

NEW YORK STATE
VENDOR RESPONSIBILITY QUESTIONNAIRE
ATTACHMENT B – UNCOMPLETED CONSTRUCTION CONTRACTS

Vendor Name:**NYS Vendor ID:****Question 3.1: List all current uncompleted construction contracts:**

5.	Agency/Owner					Award Date	Completion Date
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer			
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable	
			Total Contract Amount	Amount Sublet to others	Uncompleted Amount		
6.	Agency/Owner					Award Date	Completion Date
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer			
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable	
			Total Contract Amount	Amount Sublet to others	Uncompleted Amount		
7.	Agency/Owner					Award Date	Completion Date
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer			
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable	
			Total Contract Amount	Amount Sublet to others	Uncompleted Amount		
8.	Agency/Owner					Award Date	Completion Date
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer			
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable			EIN of JV, if applicable	
			Total Contract Amount	Amount Sublet to others	Uncompleted Amount		

NEW YORK STATE
VENDOR RESPONSIBILITY QUESTIONNAIRE
ATTACHMENT B – UNCOMPLETED CONSTRUCTION CONTRACTS

Vendor Name:**NYS Vendor ID:**

Question 3.1: List all current uncompleted construction contracts:

9.	Agency/Owner				Award Date		Completion Date	
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer				
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable				EIN of JV, if applicable	
				Total Contract Amount		Amount Sublet to others		Uncompleted Amount
10.	Agency/Owner				Award Date		Completion Date	
	Contact Person		Telephone No.	Designer Architect and /or Design Engineer				
	Contract No.	Prime or Sub	Joint Venture (JV) Name, if applicable				EIN of JV, if applicable	
				Total Contract Amount		Amount Sublet to others		Uncompleted Amount

Grand Total All Uncompleted Contracts	\$0.00

NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE
ATTACHMENT C - FINANCIAL INFORMATION

NYS Vendor ID: _____

As of Date: _____

ASSETS

Current Assets

1. Cash		\$	_____	-
2. Accounts receivable - less allowance for doubtful accounts	\$	_____	-	
Retainers included in accounts receivable	\$	_____	-	
Claims included in accounts receivable not yet approved or in litigation	\$	_____	-	
Total Accounts Receivable		\$	_____	-
3. Notes receivable - due within one year		\$	_____	-
4. Inventory - materials		\$	_____	-
5. Contract costs in excess of billings on uncompleted contracts		\$	_____	-
6. Accrued income receivable				
Interest	\$	_____	-	
Other (list) _____	\$	_____	-	
_____	\$	_____	-	
Total Accrued Income Receivable		\$	_____	-
7. Deposits				
Bid and Plan _____	\$	_____	-	
Other (list) _____	\$	_____	-	
_____	\$	_____	-	
Total Deposits		\$	_____	-
8. Prepaid Expenses				
Income Taxes	\$	_____	-	
Insurance	\$	_____	-	
Other (list) _____	\$	_____	-	
_____	\$	_____	-	
Total Prepaid Expenses		\$	_____	-
9. Other Current Assets				
Other (list) _____	\$	_____	-	
_____	\$	_____	-	
Total Other Current Assets		\$	_____	-
10. Total Current Assets				\$ _____ -
11. Investments				
Listed securities-present market value	\$	_____	-	
Unlisted securities-present value	\$	_____	-	
Total Investments				\$ _____ -

NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE
ATTACHMENT C - FINANCIAL INFORMATION

NYS Vendor ID: _____

12. Fixed Assets

Land	\$	-	
Building and improvements	\$	-	
Leasehold improvements	\$	-	
Machinery and equipment	\$	-	
Automotive equipment	\$	-	
Office furniture and fixtures	\$	-	
Other (list) _____	\$	-	
	\$	-	
Total		\$	-
Less: Accumulated depreciation		\$	-
Total Fixed Assets - Net			\$ -

13. Other Assets

Loans receivable			
Officers	\$	-	
Employees	\$	-	
Shareholders	\$	-	
Cash surrender value of officers' life insurance	\$	-	
Organization expense – net of amortization	\$	-	
Notes receivable - due after one year	\$	-	
Other (list) _____	\$	-	
	\$	-	
Total Other Assets			\$ -

14. TOTAL ASSETS

\$ -

NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE
ATTACHMENT C - FINANCIAL INFORMATION

NYS Vendor ID: _____

LIABILITIES

Current Liabilities

15. Accounts payable	\$	_____	-
16 a. Loans from shareholders - due within one year	\$	_____	-
16 b. Other Loans - due within one year	\$	_____	-
17. Notes payable - due within one year	\$	_____	-
18. Mortgage payable - due within one year	\$	_____	-
19. Other payables - due within one year			
Other (list) _____	\$	_____	-
	\$	_____	-
Total Other Payables - due within one year	\$	_____	-
20. Billings in excess of costs and estimated earnings	\$	_____	-
21. Accrued expenses payable			
Salaries and wages	\$	_____	-
Payroll taxes	\$	_____	-
Employees' benefits	\$	_____	-
Insurance	\$	_____	-
Other	\$	_____	-
Total Accrued Expenses Payable	\$	_____	-
22. Dividends payable	\$	_____	-
23. Income taxes payable			
State	\$	_____	-
Federal	\$	_____	-
Other	\$	_____	-
Total Income Taxes Payable	\$	_____	-
24. Total current liabilities	\$	_____	-
25. Deferred income taxes payable			
State	\$	_____	-
Federal	\$	_____	-
Other	\$	_____	-
Total Deferred Income Taxes	\$	_____	-
26. Long Term Liabilities			
Loans from shareholders - due after one year	\$	_____	-
Other Loans - due within one year			
Principle	\$	_____	-
Interest	\$	_____	-
Notes payable - due after one year	\$	_____	-
Mortgage - due after one year	\$	_____	-
Other payables - due after one year	\$	_____	-
Other (list) _____	\$	_____	-
	\$	_____	-
Total Long Term Liabilities	\$	_____	-

**NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE
ATTACHMENT C - FINANCIAL INFORMATION**

NYS Vendor ID: _____

27. Other Liabilities

Other (list) _____	\$ _____
_____	\$ _____
_____	_____

Total Other Liabilities

\$ _____

28. TOTAL LIABILITIES

\$ _____

NET WORTH

29. Net Worth (if proprietorship or partnership)

\$ _____

30. Stockholders' Equity

Common stock issued and outstanding	\$ _____
Preferred stock issued and outstanding	\$ _____
Retained earnings	\$ _____
Total	\$ _____
Less: Treasury stock	\$ _____

31. TOTAL STOCKHOLDERS' EQUITY

\$ _____

32. TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY

\$ _____

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**COUNTY OF ERIE DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

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OFFICE OF THE COMMISSIONER**

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**COUNTY OF ERIE DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

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Regarding Local Law No. 3-2018

APPENDIX A – EQUAL EMPLOYMENT OPPORTUNITY FORMS

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BUSINESS UTILIZATION REPORT – PART A

ERIE COUNTY MINORITY/WOMEN BUSINESS ENTERPRISE & SERVICE-DISABLED VETERANS
BUSINESS UTILIZATION REPORT – PART B

ERIE COUNTY MINORITY/WOMEN BUSINESS ENTERPRISE & SERVICE-DISABLED VETERANS
UTILIZATION REPORT – PART C

ERIE COUNTY MINORITY/WOMEN BUSINESS ENTERPRISE & SERVICE-DISABLED VETERANS
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BUILDING PERMIT APPLICATION

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COUNTY OF ERIE STANDARD INSURANCE CERTIFICATE

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EXECUTIVE ORDER NO.18 – FIRST SOURCE HIRING POLICY FOR COUNTY CONSTRUCTION
PROJECTS

RULES AND REGULATIONS IMPLEMENTING ERIE COUNTY EXECUTIVE MARK C. POLONCARZ
ORDER #18 SPECIFIC TO THOSE ERIE COUNTY CONSTRUCTION PROJECTS NOT
INITIATED IN THE ERIE COUNTY DEPARTMENT OF ENVIRONMENT AND PLANNING
DIVISION OF SEWERAGE MANAGEMENT

COUNTY OF ERIE EXECUTIVE ORDER #18 MONITORING AND REPORTS

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FIRST SOURCE POLICY TARGETED ZIP CODES – ERIE COUNTY ZIP CODES WITH 20% POVERTY
RATE OR HIGHER

GENERAL CONDITIONS OF THE CONTRACT

SECTION 1 - DEFINITIONS

- 1.01 CONTRACT DOCUMENTS - The Contract comprises all the documents listed in the Table of Contents of the Project Manual, including all additions, deletions and modifications incorporated therein before the execution of the Contract:
- A. Legal and Procedural Documents
 - B. General Conditions of the Contract
 - C. Supplementary General Conditions
 - D. Application for Payment
 - E. Detailed Specifications
 - F. Drawings
- 1.02 ARCHITECT / ENGINEER is the Architect, Architect / Engineer or Engineer named in the Contract Documents, or the representative duly authorized in writing to act for such Architect, Architect / Engineer or Engineer.
- 1.03 OWNER is the County of Erie. With respect to approval of the Contract Award, Change Orders and Final Payment, as well as the appropriation of funds therefore, the County Legislature shall be the Owner's representative. For Contract execution, the County Executive shall be the Owner's representative. In legal matters, the County Attorney shall be the County's representative. In all other matters, the County's representative shall be the Commissioner of Public Works, or in his absence, his duly authorized representative.
- 1.04 CONTRACTOR is the Contractor named in the Contract Documents.
- 1.05 SUBCONTRACTOR is any person, firm or corporation who has a direct contract with the Contractor and who acts for or in behalf of the Contractor in executing any part of the Contract, but does not include one who merely furnishes material or equipment.
- 1.06 PROPOSAL: The offer of a Bidder to perform the work described by the Contract Documents when made out and submitted on the prescribed Proposal Form, properly signed and guaranteed.
- 1.07 PROPOSAL GUARANTY: The Bid Bond, which shall accompany each Proposal submitted by the Bidder, is a guarantee that the Bidder will enter into a contract with the Owner for the construction of the work if the contract is awarded to him.
- 1.08 PERFORMANCE LABOR AND MATERIAL PAYMENT BOND: The Owner's standard bond document and the only approved form of security to be submitted by the contractor and his surety as a guarantee to faithfully execute the work in accordance with the terms of the contract and to pay all amounts owed by him to all laborers, tradesmen and suppliers in connection with the work covered by his contract.
- 1.09 SURETY is the person, firm or corporation that executes the Contractor's Performance Bond.
- 1.10 PROJECT MANUAL shall mean the Legal and Procedural Documents, General Conditions of the Contract, together with the modifications thereof, and the Detailed Specifications, with all addenda thereto.

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- 1.11 DRAWINGS are those enumerated in the contract documents.
- 1.12 WRITTEN NOTICE shall be considered as served when delivered in person or sent by registered or certified mail to the individual, firm or corporation or to the last business address of such known to him who serves the notice.
- A. Notice to Owner - All required notices to the Owner shall be delivered to the Erie County Department of Public Works – Office of the Commissioner, 14th Floor Rath Building, 95 Franklin Street, Buffalo, NY 14202.
- B. Change of Address - Each party shall advise the other parties to the Contract promptly as to any change in his business address until completion of the Contract.
- 1.13 ACT OF GOD means an earthquake, flood, tornado or other cataclysmic phenomenon of nature. Rain, wind, flood or other natural phenomenon of normal intensity for the locality shall not be construed as an Act of God and no reparation shall be made to the Contractor for damaged to the work resulting there from.

SECTION 2 - DRAWINGS, SPECIFICATIONS AND RELATED DATA

- 2.01 INTENT OF DRAWINGS AND SPECIFICATIONS - The intent of the Drawings and Specifications is that the Contractor furnish all labor and materials, equipment and transportation necessary for the proper execution of the work unless specifically noted otherwise. The Contractor shall do all the work shown on the Drawings and described in the Specifications and all incidental work considered necessary to complete the work included in the contract in a substantial and acceptable manner, and to fully complete the work or improvement, ready for use, occupancy and operation by the Owner.
- 2.02 CONFLICT - If there is conflicting variance between the Drawings and the Specifications, the provisions of the Specifications shall control. In case of conflict between the General Conditions of the Contract or any modifications thereof and the Detailed Specification Requirements, the Detailed Specification Requirements shall control.
- 2.03 DISCREPANCIES IN DRAWINGS - Any discrepancies found between the Drawings and Specifications and site conditions or any errors or omissions in the Drawings or Specifications shall be immediately reported to the Architect / Engineer , who shall promptly correct such error or omission in writing. Any work done by the Contractor after his discovery of such discrepancies, errors or omissions shall be done at the Contractor's risk.
- 2.04 DRAWINGS AND SPECIFICATIONS - The complete requirements of the work to be performed under the Contract shall be set forth in Drawings and Specifications to be supplied through the Architect / Engineer or by the Architect / Engineer as consultant to the Owner.
- 2.05 ADDITIONAL INSTRUCTIONS - Further instructions may be issued by the Architect / Engineer during the progress of the work by means of Drawings or otherwise to make more clear or specific the Drawings and Specifications or as may be necessary to explain or illustrate changes in the work to be done.
- 2.06 COPIES OF DRAWINGS AND SPECIFICATIONS FURNISHED - Except as provided for otherwise, all required copies of Drawings and Specifications necessary for the execution of the work shall be furnished to the Contractor without charge.
- 2.07 DRAWINGS AND SPECIFICATIONS AT JOB SITE - One complete set of all Drawings and Specifications shall be maintained at the job site and shall be available to the Architect / Engineer at all times.

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- 2.08 OWNERSHIP OF DRAWINGS AND SPECIFICATIONS - Except as otherwise provided in the Owner's Contract with the Architect / Engineer, all original or duplicated Drawings and Specifications and other data prepared by the Architect / Engineer shall remain the property of the Owner and/or Architect / Engineer, and they shall not be reused on other work, but shall be returned upon completion of the work.
- 2.09 DIMENSIONS - Figured dimensions on the plans will be used in preference to scaling the Drawings. Where the work of the Contractor is affected by finish dimensions, these shall be determined by the Contractor at the site, and he shall assume the responsibility therefore.
- 2.10 MODELS - All models prepared for this work shall become the property of the Owner at the completion of the work.
- 2.11 SAMPLES - All samples called for in the Specifications or required by the Architect / Engineer shall be furnished by the Contractor and shall be submitted to the Architect / Engineer for his approval. Samples shall be furnished so as not to delay fabrication, allowing the Architect / Engineer reasonable time for the consideration of the samples submitted.
- A. Samples of Tests - Contractor shall furnish such samples of material as may be required for examination and test. All materials and workmanship shall be in accordance with approved samples. All samples of materials for tests shall be taken according to methods provided in the Specifications.
- 2.12 SHOP DRAWINGS – A schedule of shop drawings, setting data, and other manufacturer's data shall be submitted by the Contractor for approval of the Architect/Engineer. This schedule shall be coordinated with the project construction schedule and shall be submitted within 30 days after award of contracts.
- A. The shop drawings schedule should list the following information:
1. Description of items for which shop drawings and data shall be submitted.
 2. Approximate date for first submittal.
 3. Approximate number of calendar days required for fabrication and delivery after final approval.
 4. Number of copies each item for preliminary and final submittals.
- B. The Contractor shall be responsible for the accuracy, completeness, and suitability of the information furnished or shop drawings prepared by the subcontractors and vendors. The Contractor shall check and approve all shop drawings before they are submitted to the Architect/Engineer. Such approval shall be understood to indicate the Contractor's assurances that the items proposed by the drawings and data sheets are in accordance with the contract. Shop drawings shall include setting drawings, schedules, catalogs, brochures, manufacturer's data and other information required to evaluate and install.
- C. Shop drawings may be disapproved by the Architect/Engineer for the following reasons:
1. Drawing has not been approved by the Contractor.
 2. Drawings have been prepared without due regard for information and requirements called for or logically implied by the Contract Documents.
 3. The information is not sufficiently complete or accurate to verify that that the work represented is in accordance with the Contract Documents.
- D. Shop drawings and submitted data shall be graded by the Architect/Engineer as follows:

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1. Reviewed

- a. There shall be no correction marks on drawings.
- b. The work may be fabricated.

2. Make Noted Corrections

- a. Corrections shall be of a minor nature.
- b. The work may be fabricated at the Contractor's option, except where otherwise noted.
- c. Corrected copies shall be submitted within a reasonable time for final approval.
- d. Not Approved

3. Rejected

- a. Drawings are not acceptable.

4. Revise and Re-submit

- a. Drawings are basically correct, but due to the nature and/or extent of the corrections and/or revisions required, work shall not be fabricated.

5. Submit Item Specified

- a. Contractor shall submit item as specified in the specifications.

6. The Architect / Engineer shall, within fourteen (14) days of the submittal of any shop drawings, return one copy to the contractor marked with all corrections and changes.

E. The Architect/Engineer's approval of shop drawings is subject to the following conditions:

- 1. Approval does not authorize changes to contract requirements unless so stated in a separate letter or change order.
- 2. The Contractor shall verify all dimensions.
- 3. Checking and approval of shop drawings shall be only for conformance with the design concept of the project and compliance with the information given in the Contract Documents. Contractor shall be responsible for the dimensions to be confirmed and correlated at the jobsite; for all quantities, for information that pertains solely to the fabrication processes or to techniques or construction, and for coordination of the work of all trades.

F. Shop drawings should generally provide the following information:

- 1. Job Title and Shop Drawing Number.
- 2. Date of Drawing and Revisions.

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3. Certification that drawing has been checked by Contractor and is in compliance with the Contract Documents.
4. Details of Fabrication, Assembly and Erection.
5. Materials Used.
6. Required Dimensions.
7. Details of connections of related work.
8. Designation of the other subcontractor, trade or Contractor who provides related work shown on drawings. If not shown, this information should be provided by the Contractor before the first submittal is transmitted to the Architect / Engineer.
9. Information relating to the capacities, controls and other specification data for items or equipment.
10. Schedule, where pertinent, information on finishes or protective coating, including color samples as required.

G. Distribution Procedure:

1. In general, all shop drawings and submittals shall be received by the Architect / Engineer under a covering transmittal memorandum from the Contractor.
2. Unless otherwise indicated, initial and subsequent submissions, except final submissions shall consist of one (1) reproducible transparency and two (2) prints. The two (2) prints will be retained by the Architect /Engineer and the reproducible transparency will be returned to the Contractor.
3. Submission of catalogs, brochures and other data, where reproducible transparencies are not feasible, shall consist of a minimum of four (4) copies, two (2) of which shall be retained and two (2) returned to the Contractor. Final submittal shall include extra copies as maybe be required by the Contractor.
4. The Contractor shall make all necessary corrections to conform to the corrections and changes requested by the Architect / Engineer.
5. When shop drawings are "approved" and so stamped, the Contractor shall then submit an additional three (3) copies to the Architect/ Engineer which will be retained.
6. The Contractor shall make a minimum distribution of "approved" copies as follows:
7. One or more copies to the fabricator and /or manufacturer's representative.
8. One copy in the contractor's office.
9. One copy to file and keep in good condition at the site.

- 2.13 QUALITY OF EQUIPMENT AND MATERIALS - In order to establish standard of quality, the Architect / Engineer may, in the Detailed Specifications, refer to certain products by name and catalog number. This procedure is not to be construed as eliminating from competition other products of equal or better quality by other manufacturers where fully suitable for performance, capacity and design.

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- A. The Contractor shall furnish the complete list of proposed desired substitutions at the time of bidding, in the space provided on the Proposal Form, together with such engineering and catalog data as the Architect / Engineer may require.
- B. Substitutions
1. Requests for substitutions will be considered under the following time limitations and situations:
 - a. Not less than ten (10) calendar days before bids are due.
 - b. Work or equipment specified becomes unavailable through unforeseen events such as strikes, loss of manufacturers' plant through fire, flood or bankruptcy.
 2. Requested substitutions will be reviewed and adjudged. Failure of the Owner to raise objection shall not constitute a waiver of any of the requirements of the Contract Documents.
 3. Request for substitutions shall include complete data with drawings and samples as required, including the following:
 - a. Quality Comparison – Proposed substitution versus the specified product.
 - b. Changes required in other work because of the substitution.
 - c. Effect on the construction schedule.
 - d. Cost Data – Resulting from the proposed substitution versus the specified product. The Contractor shall certify that the cost data presented is complete and includes all related costs under this Contract.
 4. When proposing a substitution, the Contractor represents that:
 - a. They have investigated the proposed substitution and have determined that it is equal to or better than the product specified.
 - b. They will guarantee the substitution in the same manner as the product specified.
 - c. They will coordinate and make other changes as required in the work as a result of the substitution.
 - d. They waive all claims for additional costs as a result of the substitution, with the exception of those identified above under "cost data".
 5. The Owner will be sole judge of the acceptability of the proposed substitution.
 6. The Owner will have authority to approve or reject substitutions or to change the specified standards of quality. However, neither this authority to act under this provision nor any decision made in good faith, either to exercise or not to exercise this authority, shall give rise to any duty or responsibility of the Owner to the Contractor, any Subcontractor, any Sub-Subcontractor, any of their agents or employees, or any other persons performing the work or offering to perform the work.
- C. The Contractor shall abide by the Architect / Engineer's judgment when proposed substitute materials or items of equipment are judged to be unacceptable and shall furnish the specified material or item of equipment in such case. All proposals for substitutions shall be submitted in writing by the Contractor and not by sub-contractors, individual trades or material suppliers. The Architect / Engineer will approve or disapprove proposed substitutions in writing. No substitute materials or equipment shall be used unless approved in writing.

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- 2.14 EQUIPMENT APPROVAL DATA - The Contractor shall furnish one copy of complete catalog data for every manufactured item of equipment and all components to be used in the work, including specific performance data, material description, rating, capacity, working pressure, material gage or thickness, brand name, catalog number and general type.
- A. This submission shall be compiled by the Contractor and approved by the Architect / Engineer before any of the equipment is ordered.
 - B. Each data sheet or catalog in the submission shall be indexed according to specification section and paragraph for easy reference.
 - C. After written approval, this submission shall become a part of the Contract, and may not be deviated from except upon written approval of the Architect / Engineer and Owner.
 - D. Catalog data for equipment approved by the Architect / Engineer does not in any case supersede the Architect / Engineer's Contract Documents. The approval of the Architect / Engineer shall not relieve the Contractor from responsibility for deviations from Drawings or Specifications, unless he has in writing called the Architect / Engineer's attention to such deviations at the time of submission, nor shall it relieve him from responsibility for errors of any sort in the items submitted. The Contractor shall check the work described by the catalog data with the Architect / Engineer's Contract Documents for deviations and errors.
 - E. It shall be the responsibility of the Contractor to insure that items to be furnished fit the space available. He shall make necessary field measurements to ascertain space requirements, including those for connections, and shall order such sizes and shapes of equipment that the final installation shall suit the true intent and meaning of the Drawings and Specifications.
 - F. Where equipment requiring different arrangement of connections from those shown is approved, it shall be the responsibility of the Contractor to install the equipment to operate properly, and in harmony with the intent of the Drawings and Specifications, and to make all changes in the work required by the different arrangement of connections without extra cost to the Owner.
- 2.15 SURVEYS - Unless otherwise specified, the Owner shall establish all base lines for the location of the principal component parts of the work together with a suitable number of bench marks adjacent to the work. Based upon the information provided by the Owner, the Contractor shall develop and make all detail surveys necessary for construction, including slope stakes, batterboards, stakes for pile locations and other working points, lines and elevations. The Contractor shall have the responsibility to carefully preserve bench marks, reference points and stakes, and, in the case of destruction thereof by the Contractor or resulting from his negligence, the Contractor shall be charged with the expense and damage resulting there from and shall be responsible for any mistakes that may be caused by the unnecessary loss or disturbance of such bench marks, reference points and stakes.
- 2.16 RECORD DOCUMENT SUBMITTALS
- A. Record Drawings: Prior to acceptance by the Owner of all work covered by the contract each contractor shall furnish to the Architect/ Engineer project record documents as required under Division 1.
 - B. Operation and Maintenance Manuals: Prior to acceptance by the Owner of all work covered by the contract each contractor shall furnish to the Architect/ Engineer operation and maintenance manuals as required under Division 1.

SECTION 3 - RELATIONS AMONG OWNER, CONTRACTOR AND ARCHITECT / ENGINEER

- 3.01 ARCHITECT / ENGINEER 'S RESPONSIBILITY AND AUTHORITY - All work shall be done under the general administration of the Architect / Engineer. The Architect / Engineer shall decide any and all questions which may arise as to the quality and acceptability of materials furnished, work performed, rate or progress of work, interpretation of Drawings and Specifications and all questions, other than legal questions, as to the acceptable fulfillment of the Contract on the part of the Contractor.
- 3.02 ARCHITECT / ENGINEER'S DECISIONS - All decisions of the Architect / Engineer concerning the intent of the drawings and specifications shall be final. No changes may be made in the drawings or specifications involving more or less quantities of materials, changes in the quality of materials or workmanship, or changes in design or in the amount of labor or machine time involved, regardless of whether or not a change in contract price is sought, until a request in writing has been submitted to the Owner for his approval and such approval has been granted.
- 3.03 SUSPENSION OF WORK - The Owner's representative and/or the Architect / Engineer shall have the authority to suspend the work, wholly or in part, for such periods as he may deem necessary due to unsuitable weather or such other conditions as are considered unfavorable for prosecution of the work, or failure on the part of the Contractor to carry out the provisions of the Contract or to supply materials meeting the requirements of the Specifications. The Contractor shall not suspend operation without the Owner's representative and/or the Architect / Engineer's permission.
- 3.04 INSPECTION OF WORK - All materials and each part or detail of the work shall be subject at all times to inspection by the Owner's representative and/or the Architect / Engineer, and the Contractor will be held strictly to the true intent of the Specifications in regard to quality of materials, workmanship, and the diligent execution of the Contract. Such inspection may include mill, plant, or shop inspection, and any material furnished under these Specifications is subject to such inspection. The Owner's representative and/or the Architect / Engineer shall be allowed access to all parts of the work and shall be furnished with such information and assistance by the Contractor as is required to make a complete and detailed inspection.
- 3.05 EXAMINATION OF COMPLETE WORK - If the Architect / Engineer requests it, the Contractor at any time before acceptance of the work shall remove or uncover such portions of the finished work as maybe directed. After examination, the Contractor shall restore said portions of the work to the standard required by the Specifications. Should the work thus exposed or examined prove acceptable, the uncovering or removing, and the replacing of the covering or making good of the parts removed shall be paid for as Extra Work, but should the work so exposed or examined prove unacceptable, the uncovering, removing and replacing shall be at the Contractor's expense.
- 3.06 CONTRACTOR'S SUPERINTENDENCE - The Contractor shall designate a qualified superintendent, acceptable to the Owner's representative and the Architect / Engineer, who shall be maintained on the project and give efficient supervision to the work until its completion. The superintendent shall have full authority to act in behalf of the Contractor, and all directions given to the superintendent shall be considered given to the Contractor. In general, the Architect / Engineer's instructions shall be confirmed in writing and always upon written request from the Contractor. The Contractor's superintendent or other authorized managerial level representative shall be required to attend all scheduled job meetings.
1. Delays caused by the contractor due to lack of attendance at a scheduled job meeting and/or lack of coordination will be at the contractor's expense. This would be inclusive of all costs related to the delayed work caused by a given prime contractor and/or its subcontractors affecting any contractor (prime or sub) on the Project.

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- 3.07 LANDS BY OWNER - The Owner shall provide the lands shown on the Drawings upon which the work under the Contract is to be performed and to be used for rights-of-way for access. Any unreasonable delay in furnishing these lands by the Owner shall be deemed proper cause for adjustment in the Contract Amount and/or in the time of completion.
- 3.08 LANDS BY CONTRACTOR - Any additional land and access thereto, not shown on the Drawings, that may be required for temporary construction facilities or for storage of materials shall be provided by the Contractor with no liability to the Owner. The Contractor shall confine his apparatus and storage of materials and operation of his workmen to those areas described in the Drawings and Specifications and such additional areas which he may provide as approved by the Owner's representative and the Architect / Engineer.
- 3.09 PRIVATE PROPERTY - The Contractor shall not enter upon private property for any purpose without obtaining permission, and he shall be responsible for the preservation of all public property, trees, monuments, etc. along and adjacent to the street and/or right-of-way, and shall use every precaution necessary to prevent damage or injury thereto. He shall use suitable precautions to prevent damage to pipes, conduits, and other underground structures, and shall protect carefully from disturbance or damage all monuments and property marks until an authorized agent has witnessed or otherwise referenced their location and shall not remove them until directed.
- 3.10 ASSIGNMENT OF CONTRACT - The Contractor shall be bound by Section 109 of the General Municipal Law relating to the assignment of Public Contracts. The following extracts are directed to the attention of bidders:
- A. "Prohibiting any contractor, to whom any contract shall be let, granted or awarded, as required by law, from assigning, transferring, conveying, subletting or otherwise disposing of the same, or of his right, title or interest therein, or his power to execute such contract, to any other person or corporation without the previous consent in writing of the officer, board or agency awarding the contract."
- B. "If any contractor, to whom any contract is let, granted or awarded, as required by law, by any officer, board or agency of a political subdivision, or of any district therein, shall without the previous written consent specified in subdivision one of this section, assign, transfer, convey, sublet or otherwise dispose of such contract, or his right, title or interest therein, or his power to execute such contract, to any other person or corporation, the officer, board or agency which let, made, granted or awarded such contract shall revoke and annul such contract, and the political subdivision or district therein, as the case maybe, and such officer, board or agency shall be relieved and discharged from any and all liability and obligations growing out of such contract to such contractor, and to the person or corporation to which such contract shall have been assigned, transferred, conveyed, sublet or otherwise disposed of, and such contractor, and his assignees, transferees or sub lessees shall forfeit and lose all moneys, theretofore earned under such contract, except so much as may be required to pay his employees. The provisions of this section shall not hinder, prevent or affect any assignment by any such contractor for the benefit of his creditors made pursuant to the laws of this state."
- 3.11 REMOVAL OF CONSTRUCTION EQUIPMENT, TOOLS AND SUPPLIES - At the termination of this Contract, before acceptance of the work by the Architect / Engineer , the Contractor shall remove all of his equipment, tools and supplies from the property of the Owner. Should the Contractor fail to remove such equipment, tools and supplies, the Owner shall have the right to remove them.
- 3.12 SUSPENSION OF WORK BY OWNER - The work or any portion thereof may be suspended at any time by the Owner provided that he give the Contractor five (5) days' written notice of suspension, which shall set forth the date on which work is to be resumed.

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- 3.13 OWNER'S RIGHT TO CORRECT DEFICIENCIES - Upon failure of the Contractor to perform the work in accordance with the Contract Documents, including any requirements with respect to the Schedule of Completion, and after five (5) day's written notice to the Contractor and receipt of written approval from the Architect / Engineer, the Owner may, without prejudice to any other remedy he may have, correct such deficiencies.
- 3.14 OWNER'S RIGHT TO TERMINATE CONTRACT AND COMPLETE THE WORK - The Owner shall have the right to terminate the employment of the Contractor after giving ten (10) days' written notice of termination to the Contractor in the event of any default by the Contractor and upon receiving written notice from the Architect / Engineer certifying cause for such action. In the event of such termination, the Owner may take possession of the work and of all materials, tools and equipment thereon and may finish the work by whatever method and means he may select. It shall be considered a default by the Contractor whenever he shall:
- A. Declare bankruptcy, become insolvent, or assign his assets for the benefit of his creditors.
 - B. Disregard or violate important provisions of the Contract Documents or Architect / Engineer's Instructions, or fail to prosecute the work according to the agreed progress schedule, including extensions thereof.
 - C. Fail to provide a qualified superintendent, competent workmen or sub-contractors, or proper materials, or fail to make prompt payment therefore.
- 3.15 CONTRACTOR'S RIGHT TO SUSPEND WORK OR TERMINATE CONTRACT - The Contractor may suspend work or terminate Contract upon ten (10) days' written notice to the Owner and the Architect / Engineer, if an order of any court, or other public authority causes the work to be stopped or suspended for a period of ninety (90) days through no act or fault of the Contractor or his employees.
- 3.16 RIGHTS OF VARIOUS INTERESTS - Wherever work being done by the Owner's forces or by other contractors is contiguous to work covered by this Contract, the respective rights of the various interests involved shall be established by the Architect / Engineer to secure the completion of the various portions of the work in general harmony.
- 3.17 SEPARATE CONTRACTS - The Owner may let other contracts in connection with the work of the Contractor. The Contractor shall cooperate with other Contractors with regard to storage of materials and execution of their work. It shall be the Contractor's responsibility to inspect all work by other Contractors affecting their work and to report to the Architect / Engineer any irregularities which will not permit them to complete their work in a satisfactory manner. Their failure to notify the Architect / Engineer of such irregularities shall indicate the work of other Contractors has been satisfactorily completed to receive their work. The Contractor shall not be responsible for defects of which he could not have known, which develop in the work of others after the work is completed. It shall be the responsibility of the Contractor to measure the completed work in place and report to the Architect / Engineer immediately any difference between completed work by others and the Drawings.

It is the responsibility of each Prime Contractor under separate contracts associated with the same project to coordinate the activities of their respective subcontractors and the work between other prime contracts that affects their scope of work in a cooperative manner to prevent delays and/ or additional costs to the extent practical. It will be the responsibility of the Architect/ Engineer in conjunction with the Owner to evaluate delays and/or additional costs should they arise. Owner reserves the right to withhold payment per Section 7.05 as deemed necessary.

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3.18 CONTRACTORS OWN WORKFORCE – The Contractor shall perform with their own workforce contract work amounting to not less than 25 percent of the original total contract price, except those items designated by the County as “Specialty Items” so performed shall be deducted from the original total contract price before computing the amount of work required to be performed by the Contractor with their own workforce.

- A. “Their own workforce” shall be construed to include only worker’s employed and paid directly by the Contractor and equipment owned or rented by the Contractor, with or without operators.
- B. “Specialty Items” shall be construed to be limited to work that requires specialized knowledge, craftsmanship or equipment not ordinarily available in contracting organizations qualified to bid on the contract as a whole and, in general, are to be limited to minor components of the overall contract.

The following list of “Specialty Items” are work items which require special skills and comprise work which is not relevant to the general type of construction contained in this contract:

NONE

CONTRACTOR’S OWN WORKFORCE

(This form must be submitted with the Contractor’s bid proposal)

Pursuant to Section 3.18 – Contractor’s Own Workforce, of the General Conditions, the Contractor submitting a bid proposal acknowledges that they will perform a minimum of 25% of the work with their own workforce as follows:

Task	Value of Work
Total Value of Workforce	
Percentage of Total Bid	%

- 3.19 SUBCONTRACTS - Within 48 hours (not counting Saturdays, Sundays or holidays) after the time of bidding, the Contractor shall submit in writing to the Owner for approval by the Architect / Engineer the names of the sub-contractors proposed for the work. After such approval, sub-contractors may not be changed except at the request of, or with the approval of the Architect / Engineer. The Contractor is responsible to the Owner for the acts and omissions of his sub-contractors, and of their direct and indirect employees, to the same extent as he is responsible for the acts and omissions of his employees. The Contract Documents shall not be construed as creating any contractual relation between any sub-contractor and the Owner. The Contractor shall bind every sub-contractor by the terms of the Contract Documents.
- A. For convenience of reference and to facilitate the letting of Contracts and sub-contracts, the Specifications are separated into titled sections. Such separations shall not, however, operate to make the Architect / Engineer an arbiter to establish limits to the contracts between Contractor and sub-contractors.
- 3.20 WORK DURING AN EMERGENCY - The Contractor shall perform any work and shall furnish and install any materials and equipment necessary during an emergency endangering life or property. In all cases he shall notify the Architect / Engineer of the emergency as soon as practicable, but he shall not wait for instructions before proceeding to properly protect both life and property.
- 3.21 ORAL AGREEMENTS - No oral order, objection, claim or notice by any party to the others shall affect or modify any of the terms or obligations contained in any of the Contract Documents, and none of the provisions of the Contract Documents shall be held to be waived or modified by reason of any act whatsoever, other than a definitely agreed waiver or modification thereof in writing, and no evidence shall be introduced in any proceeding of any other waiver or modification.

SECTION 4 - MATERIALS AND WORKMANSHIP

- 4.01 MATERIALS FURNISHED BY THE CONTRACTOR - All materials sold to the Owner and/or used in the work shall meet the requirements of the respective Specifications, and no material shall be used until it has been approved by the Architect / Engineer. All materials not otherwise specifically indicated shall be furnished by the Contractor.
- 4.02 MATERIALS FURNISHED BY THE OWNER - Materials specifically indicated shall be furnished by the Owner. The fact that the Owner is to furnish material is conclusive evidence of its acceptability for the purpose intended, and the Contractor may continue to use it until otherwise directed. If the Contractor discovers any defect in material furnished by the Owner, he shall notify the Architect / Engineer. Unless otherwise noted or specifically stated, materials furnished by the Owner, which are not of local occurrence, are considered to be f.o.b. the nearest railroad station. The Contractor shall be prepared to unload and properly protect all such material from damage or loss. The Contractor shall be responsible for material loss or damage after receipt of material at the point of delivery.
- 4.03 STORAGE OF MATERIALS - Materials shall be so stored as to insure the preservation of their quality and fitness for the work. When considered necessary, they shall be placed on wooden platforms or other hard, clean surfaces, and not on the ground, and/or they shall be placed under cover. Stored materials shall be located so as to facilitate prompt inspection. Request for payment of offsite storage shall be in accordance with Section 7.02.c.

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- 4.04 CHARACTER OF WORKMEN - The Contractor shall at all times be responsible for the conduct and discipline of his employees and/or any sub-contractor or persons employed by sub-contractors. All workmen must have sufficient knowledge, skill, and experience to perform properly the work assigned to them. Any foreman or workman employed by the Contractor or sub-contractor who, in the opinion of the Architect / Engineer, does not perform his work in a skillful manner, or appears to be incompetent or to act in a disorderly or intemperate manner shall, at the written request of the Architect / Engineer, be discharged immediately and shall not be employed again in any portion of the work without the approval of the Architect / Engineer.
- 4.05 REJECTED WORK AND MATERIALS - All materials which do not conform to the requirements of the Contract Documents, are not equal to samples approved by the Architect / Engineer, or are in any way unsatisfactory or unsuited to the purposes for which they are intended, shall be rejected. Any defective work whether the result of poor workmanship, use of defective materials, damaged through carelessness or any other cause shall be removed within ten (10) days after written notice is given by the Architect / Engineer, and the work shall be re-executed by the Contractor. The fact that the Architect / Engineer may have previously overlooked such defective work shall not constitute an acceptance of any part of it.
- A. Should the Contractor fail to remove rejected work or materials within ten (10) days after written notice to do so, the Owner may remove them and may store the materials.
- B. Correction of Faulty Work after Final Payment shall be in accordance with Paragraph 7.18.
- 4.06 MANUFACTURER'S DIRECTIONS - Manufactured articles, material and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directed by the manufacturer unless herein specified to the contrary.
- 4.07 CUTTING AND PATCHING - The Contractor shall do all necessary cutting and patching of the work that may be required to properly receive the work of the various trades or as required by the Drawings and Specifications to complete the structure. He shall restore all such cut or patched work as directed by the Architect / Engineer. Cutting of existing structure that shall endanger the work, adjacent property, workmen or the public, shall not be done unless approved by the Architect / Engineer and under his direction.
- 4.08 CLEANING UP - The Contractor shall remove from the Owner's property, and from all public and private property, all temporary structures, rubbish and waste materials resulting from his operation or caused by his employees, and shall remove all surplus materials leaving the site smooth, clean and true to line and grade. If all materials described above related to a contractor's scope of work are not removed in a timely manner, the contractor will be issued a written notice of unsatisfactory demobilization / cleanup which shall be addressed within 24 hours. If satisfactory corrective action is not completed within 24 hours the County shall have the situation remedied as deemed necessary by the County and the contractor shall be responsible for the costs through a withhold of retention and/or invoice to the contractor equaling the cost to clean up the construction site.
- 4.09 GUARANTY PERIOD - The Contractor shall warrant all materials and equipment furnished and all work performed by him for a period of two (2) years, or for such longer period as may be specified in the Detailed Specifications, from the date of written acceptance of the work or "Notice of Substantial Completion". (Note: The warranty period, in regard to any facilities or portions thereof which are essentially completed and have been accepted for use and occupancy by the Owner shall commence with the date of the "Notice of Substantial Completion".)
- A. Correction of Faulty Work after Final Payment shall be as provided in Paragraph 7.18, except that where a period longer than two years is specified in the Detailed Specifications, such longer period shall apply.

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- B. As a condition precedent to final payment, the Contractor shall execute a guaranty in the form provided by the Architect / Engineer warranting the work under his contract free from defects of materials and workmanship and agreeing to replace at his expense any materials or equipment found defective within the two years after final acceptance by the Owner, and to replace any other work found unsatisfactory because of settlement or displacement within such longer period as may be specified in the Detailed Specifications, and to do such replacing or corrective work at such times and in such manner as not to interfere with the Owner's use of the premises.

SECTION 5 - INSURANCE, BONDS, SAFETY, ETC.

- 5.01 INSURANCES REQUIRED - Insurance shall be procured by the successful bidder before commencing work, no later than seven (7) days after notice of an award and maintained without interruption for the duration of the contract, in the kinds and amounts specified below.

	<u>Each Occurrence</u>	<u>Aggregate</u>
A. Commercial General Liability	\$1,000,000	\$2,000,000
Premises and Operations		
▪ Products and Completed Operations	\$2,000,000	
▪ Independent Contractors	Not Excluded or Limited	
▪ Contractual	Not Excluded or Limited	
▪ Broad Form Property Damage	Not Excluded or Limited	
▪ X,C,U	Not Excluded or Limited	
B. Automobile Liability, including	\$1,000,000 CSL	
▪ Owner		
▪ Hired		
▪ Non-Owned		
C. Excess Umbrella Liability		\$5,000,000
D. Worker's Compensation	Statutory (IC-1, Section IX)	
E. New York Disability	Statutory (IC-1, Section IX)	
F. Builders' Risk-All Risk. The policy is required. The Prime Contractors shall procure and maintain Insurance against loss by fire, extended coverage, vandalism and malicious mischief upon all work in place and all materials and equipment stored on and off the building site. This insurance shall be in an amount equal to the full insurable value at all times and shall be for the benefit of the Owner and each Prime Contractor, as their interest might appear. The Policy must carry the County of Erie as the named insured.		

5.02 CERTIFICATES OF INSURANCE

- A. Shall be made to the "County of Erie"
95 Franklin Street, Buffalo, New York, 14202.
- B. Coverage must comply with all requirements of "Instructions for County of Erie Standard Insurance Certificate" page IC-1 of this Project Manual.

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- C. Executed by an insurance company and/or agency or broker which is licensed by the Insurance Department of the State of New York. If executed by a broker, notarized copy of authorization to bind or certify coverage must be attached.
- D. All policies in which the County of Erie is named as an additional insured shall provide that:
- E. "The insurance company or companies issuing the policies shall have no recourse against the County of Erie for payment of any premiums or for assessments under any form of policy."
- F. "The insurance shall apply separately to each insured (except with respect to the limit of liability)."
- G. During the term of this Agreement, the Contractor agrees to maintain insurance coverage consistent with the insurance requirements attached hereto. Contractor agrees to name the "County of Erie" as an additional insured on all such insurance policies, and to provide to the County Attorney certificate(s) of insurance evidencing such insurance coverage prior to the commencement of any work on the Project. All insurance certificates shall be subject to approval by the office of the County Attorney.

- 5.03 PERFORMANCE, LABOR AND MATERIAL PAYMENT BOND - The Contractor shall furnish, as required elsewhere in the General Conditions. A Performance, Labor and Material Payment Bond in a sum equal to the Contract amount, including change order values. The form of such bond shall be the Owner's Standard Performance, Labor and Material Payment Bond which is exhibited elsewhere in the Project Manual. The bond shall be written with a Surety Company licensed or otherwise authorized to do business in the State of New York.

The Performance Bond shall be submitted by the successor bidder no later than 7 days after notice of an award.

- 5.04 PATENTS AND ROYALTIES - If any design, device, material or process covered by letters, patent or copyright is used by the Contractor, he shall provide for such use by legal agreement with the Owner of the patent or a duly authorized licensee of such owner, and shall save harmless the Owner from any and all loss or expense on account thereof, including its use by the Owner.

- 5.05 PERMITS - All permits and licenses necessary for the prosecution of the work shall be secured by the Contractor as required and/or as directed by the Architect/ Engineer as described within the Project Documents.

The Contractor shall apply for and obtain a Building Permit from the Department of Public Works prior to the start of the work. The Contractor shall also submit proof of NYS Worker's Compensation and NYS Disability Benefit's Insurance on forms as prescribed by NYS. No work shall be started until the County has issued a valid Building Permit to the Contractor. Building in violation of a valid Building Permit is cause for the County to issue a Stop Work Order. The Contractor will not be required to submit stamped drawings as part of the application process. Building Permit Forms are included in Appendix B.

- 5.06 LAWS TO BE OBSERVED - The Contractor shall give all notices and comply with all Federal, State and Local Laws, Ordinances and Regulations in any manner affecting the conduct of the work, and all such order and decrees as exist, or may be enacted by bodies or tribunals having any jurisdiction or authority over the work, and shall indemnify and save harmless the Owner against any claim or liability arising from or based on, the violation of any such law, ordinance, regulation, order or decree, whether by himself or his employees.

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- 5.07 PROTECTION OF PROJECT AND PUBLIC - The Contractor shall provide adequate signs, barricades, flashing and/or red lights and take all necessary precautions for the safety of the public and the protection of the work against loss or damage. All barricades and obstructions shall be protected at night by signal lights which shall be kept burning or flashing from sunset to sunrise. Barricades shall be of substantial construction and shall be so painted or coated as to increase their visibility at night. Suitable warning signs shall be so placed and illuminated at night as to show in advance where construction, barricades or detours exist. The Contractor shall inform himself as to conditions likely to be applicable to the site and shall, in any case, provide such watchmen, guards, watchdogs or other services as appear necessary to protect the work and workmen from damage or injury from vandalism, malicious mischief or other hazard.
- 5.08 TRAFFIC SAFETY AND CONVENIENCE - The Contractor shall at all times so conduct his work as to insure the least possible obstruction to traffic and to minimize inconvenience to the general public and the residents in the vicinity of the work, and to insure the protection of persons and property in a manner satisfactory to the Architect/Engineer. No road or street shall be closed to the public except with the permission of the Architect/Engineer and proper governmental authority. Fire hydrants on or adjacent to the work shall be kept accessible to firefighting equipment at all times. Temporary provisions shall be made by the Contractor to insure the use of sidewalks and the proper functioning of all gutters, sewer inlets, drainage ditches and irrigation ditches, which shall not be obstructed except as approved by the Architect/Engineer under conditions assuring satisfactory detour and/or by-pass facilities.
- 5.09 CROSSING UTILITIES - When new construction crosses highways, railroads, streets or utilities under the jurisdiction of State, County, City or other public agency, public utility or private entity, the Contractor shall secure written permission from the proper authority before executing such new construction. A copy of this written permission must be filed with the Owner before any work is done. The Contractor will be required to furnish a release from the proper authority before final acceptance of the work.
- 5.10 SANITARY PROVISIONS - The Contractor shall provide and maintain such sanitary accommodations for the use of his employees and those of his subcontractors as may be necessary to comply with the requirements and regulations of the local and State departments of health and as directed by the Architect/Engineer.

SECTION 6 - PROGRESS AND COMPLETION OF WORK

- 6.01 NOTICE TO PROCEED - Following authorization of the Contract by the Owner, written Notice to Proceed with the work shall be given to the Contractor. The Contractor shall begin and shall prosecute the work regularly and uninterruptedly thereafter (unless otherwise directed in writing by the Owner) with such labor force as to secure the completion of the work within the time stated in the Proposal.
- 6.02 LAYING OUT WORK
- A. The Contractor shall, immediately upon entering the project site for the purpose of beginning work, locate all general reference points and take such action as is necessary to prevent their destruction. He shall lay out his own work and be responsible for all lines, elevations and measurements of structures, grading, paving, utilities and other work executed by him under the Contract. He must exercise proper precaution to verify figures shown on drawings before laying out work and will be held responsible for any error resulting from his failure to exercise such precaution.
- B. The Contractor shall be responsible for correlation of all work.
- 6.03 METHODS OF MATERIALS
- A. If alternate methods or materials from those specified are accepted and approved by the Owner, the Contractor shall be responsible for the equivalent operation and performance, and the proper installation in the space designated of the substituted material or system.

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B. When job conditions require reasonable changes in indicated locations and arrangements, such changes shall be made without extra cost to the Owner.

6.04 CONTRACT TIME - The Contractor shall complete, in an acceptable manner, all of the work contracted for in the time stated in the Agreement, commencing with the date of Notice to Proceed.

6.05 PROGRESS SCHEDULE

A. The Contractor shall prepare a progress schedule to indicate the proposed progress of work. The progress schedule shall be in the form of a bar graph or other approved method.

B. The progress schedule shall be submitted to the Owner for application of work sequencing approval within fourteen (14) days of Notice to Proceed.

6.06 CHANGES IN THE WORK - The Owner may, as the need arises, order changes in the work through additions, deletions, or modifications without invalidating the Contract. Compensation and time of completion affected by the change shall be adjusted at the time of ordering such change, and shall be specified in a written Change Order approved by the Owner on recommendation by the Architect / Engineer.

6.07 EXTRA WORK - New and unforeseen items of work found to be necessary and which cannot be covered by any item or combination of items for which there is a Contract price shall be classed as Extra Work. The Contractor shall do such Extra Work and furnish such materials as may be required for the proper completion or construction of the whole work contemplated upon written Change Order by the Owner on recommendation by the Architect / Engineer. Materials to be incorporated into the project shall be sold to the Owner separately and apart from the furnishing of work, labor and other items required for the construction of the project in the same manner and with the same effect as if specified in the Bid Documents. In the absence of such written order, no claim for Extra Work shall be considered. Extra Work shall be performed in accordance with these Specifications where applicable and work not covered by the Specifications or special provisions shall be done in accordance with the best practice as approved by the Architect / Engineer. Extra Work required in an emergency to protect life and property shall be performed by the Contractor as required.

6.08 EXTENSION OF CONTRACT TIME - A delay beyond the Contractor's control occasioned by an Act of God, or act or omission on the part of the Owner by strikes, lockouts, fire, etc. may entitle the Contractor to an extension of time in which to complete the work as determined by the Architect / Engineer, provided, however, that the Contractor shall immediately give written notice to the Architect / Engineer of the cause of such delay. If an extension of time is granted, the approved Progress Schedule shall be updated and a change order issued covering the extension of time. The Contractor's signature on the change order shall signify the Contractor's acceptance of the updated Progress Schedule.

6.09 USE OF COMPLETED PORTIONS - The Owner shall have the right to take possession of and use any completed or partially completed portions of the work, notwithstanding that the time for completing the entire work or such portions may not have expired; but such taking possession and use shall not be deemed an acceptance of any work not completed in accordance with the Contract Documents. If such prior use increases the cost of or delays the completion of uncompleted work or causes refinishing of completed work, the Contractor shall be entitled to such extra compensation, or extension of time or both, as the Owner and Contractor may agree.

6.10 EXISTING UTILITIES - The operation of existing active utilities, including gas, water, sewer, electric and telephone lines, shall not be disturbed except as required to connect new utilities thereto.

6.11 SITE CONDITIONS - The Contractor shall maintain the site so as to avoid unhealthful, hazardous and noisome conditions. He shall maintain excavations free of the accumulation of excess water.

- 6.12 PREVENTION OF DELAY - The Contractor agrees that there will be no interruption in the performance of the work under this agreement due to labor strife or unrest. The Contractor and his subcontractors will not employ on the work, any labor, materials or means whose employment or utilization during the course of this contract may tend to or in any way cause or result in strikes, work stoppages, delays, suspension of work or similar troubles by workmen employed by the Contractor or his subcontractors or by any of the trades working in or about the buildings and premises where work is being performed under this contract, or by other contractors or their subcontractors pursuant to other contracts, or on any other building or premises owned or operated by the County of Erie. Any violation by the Contractor of this requirement will be considered proper and sufficient cause for the County, through the Department of Public Works – Office of the Commissioner to consider such interruption a breach of the agreement and to cancel the contract without any penalty to the County, and to recover any damages from the Contractor that may have been caused by labor strife and unrest.

SECTION 7 - MEASUREMENT AND PAYMENT

- 7.01 DETAILED BREAKDOWN OF CONTRACT AMOUNT - Except in cases where unit prices form the basis for payment under the Contract, the Contractor shall within ten (10) days of receipt of Notice to Proceed submit a complete breakdown of the Contract Amount showing the value assigned to the materials sold to the Owner for, and separately, the labor and other costs assigned to each part of the work, including any allowances as part of the base bid. Upon approval of the breakdown of the Contract Amount by the Architect / Engineer, it shall be used as the basis for all Requests for Payment.

Allowances and any future approved change orders shall be shown on the request for payment worksheets as separate line items. Request for payment worksheet can be found in specification Section 011500 – Application For Payment.

7.02 REQUESTS FOR PAYMENT

- A. The Contractor may submit periodically, but not more than once a month, a Request for Payment for work done. The Contractor shall furnish the Architect / Engineer all reasonable facilities required for obtaining the necessary information relative to the progress and execution of the work. Each Request for Payment shall be computed on all items listed in the Detailed Breakdown of Contract Amount, less 5% to be retained until substantial completion and acceptance of the work and less previous payments. See Specification Section 011500 'Application for Payment' for additional information
- B. Upon the issuance of a letter of substantial completion by the Owner, the Contractor shall prepare a detailed listing of all items of work or corrections yet to be performed on the project with monetary value assigned to each. He shall forward said list to the Architect/Engineer and the Owner, who may modify such list at their discretion. The Owner reserves the sole right to reduce the retention previously withheld to any amount equal to two times the value of the outstanding work items and corrections yet to be performed with monetary values assigned to each as determined by the Owner, 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 Owner shall promptly pay, upon receipt of a requisition, for these items less amount necessary to satisfy any claims, liens or judgments against the Contractor which have not been suitably discharged. Where unit prices are specified, the Request for Payment shall be based on the quantities expended.
- C. For purposes of monitoring the payment progress, the Contractor shall submit a detailed breakdown on a proper County form indicating items of work and separately listing labor and material cost for each item.

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- D. The Owner will make payments for stored materials at off-site locations provided said materials are suitably stored (a) in public warehouses, or (b) at the contractor's place of business or other location approved by the Owner, in which case the materials shall be segregated and have affixed to them in prominent locations placards stating "this material is the property of the County of Erie". All materials to be considered for payment shall be stored within a 100 mile radius of the County of Erie. The materials shall be completely covered by insurance. The required insurance shall be an all-risk policy, in an amount equal to the full insurable value at all times and shall be for the benefit of the County of Erie (named insured). In addition to the necessary insurance, a notarized affidavit shall be provided at the time of request for payment, indicating the location of the stored material. The Owner shall have the right of access to inspect the material at any time during normal working hours. All other appropriate insurance requirements and procedures as stipulated in Section 5 of the Erie County General Conditions shall apply.

7.03 ARCHITECT / ENGINEER'S ACTION ON A REQUEST FOR PAYMENT - Within ten (10) days of submission of any Request for Payment by the Contractor, the Architect / Engineer shall:

- A. Approve the Request for Payment as submitted; or
- B. Approve such other amount as he shall decide is due the Contractor, informing the Contractor in writing for his reasons for approving the amended amount; or
- C. Withhold the Request for Payment, informing the Contractor in writing of his reasons for withholding it.

7.04 OWNER'S ACTION ON AN APPROVED REQUEST FOR PAYMENT - Within forty-five days (45) from the date of approval of a Request for Payment by the Architect / Engineer, the Owner shall:

- A. Pay the Request for Payment as approved, or
- B. Pay such other amount in accordance with Paragraph 7.05 as he shall decide is due the Contractor, informing the Contractor and the Architect / Engineer in writing of his reasons for paying the amended amount; or
- C. Withhold payment in accordance with paragraph 7.05, informing the Contractor and the Architect / Engineer of his reasons for withholding payment.

7.05 OWNER'S RIGHT TO WITHHOLD PAYMENT OF AN APPROVED REQUEST FOR PAYMENT - The Owner may withhold payment in whole or in part on an approved Request for Payment to the extent necessary to protect himself from loss on account of any of the following causes discovered subsequent to approval of a Request for Payment by the Architect / Engineer :

- A. Defective work.
- B. Evidence indicating the probable filing of claims by other parties against the Contractor.
- C. Failure of the Contractor to make payments to sub-contractors, material suppliers and suppliers of labor.
- D. Damage to another contractor.

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- E. Lack of progress of work for by a contractor that affects the progress of work of other contractors under a separate contract related to the same project. The County reserves the right to withhold payment until work has progressed to a satisfactory manner and/or to compensate other contractors under separate contracts related to any project delays. This would include but not be limited to; labor, materials and equipment associated with any necessary rework, compensation for extended completion of work duration, extended schedule of work, mobilization/ remobilization of other prime contractors.

The above does not include unforeseen work and/or unforeseen conditions that add time and/or costs to the project that is unavoidable by contractors.

- 7.06 RESPONSIBILITY OF THE CONTRACTOR - Unless specifically noted otherwise, the Contractor shall furnish and pay for all materials and services and perform all the work described by the Contract Documents, or shall have all materials and services furnished and all the work, performed at his expense. It shall also be the Contractor's responsibility to pay for:
 - A. Replacement of survey benchmarks, reference points and stakes provided by the Owner under Paragraph 2.15.
 - B. Lands by Contractor provided in accordance with Paragraph 3.08.
 - C. Insurance obtained in accordance with Paragraph 5.01.
 - D. Fire Insurance obtained in accordance with Paragraph 5.01.
 - E. Performance Labor and Material Payment Bond obtained in accordance with Paragraph 5.04.
 - F. Royalties required under Paragraph 5.05.
 - G. Permits and Licenses required of the Contractor and all subcontractors.
 - H. All applicable taxes and fees, including sales and compensating use taxes except sales and compensating use taxes of the State of New York and of cities and counties of the State, on all materials sold to the Owner under this Contract.
- 7.07 PAYMENT FOR UNCORRECTED WORK - Should the Architect / Engineer direct the Contractor not to correct work that has been damaged or that was not performed in accordance with the Contract Documents, an equitable deduction from the Contract Amount shall be made to compensate the Owner for the uncorrected work.
- 7.08 PAYMENT FOR REJECTED WORK AND MATERIALS - The removal of work and materials rejected under Paragraph 4.05 and the re-execution of acceptable work by the Contractor shall be at the expense of the Contractor, and he shall pay the cost of the replacement of work of other contractors destroyed or damaged by the removal of the rejected work or materials and the subsequent replacement of acceptable work.
 - A. Removal of rejected work or materials and storage of materials by the Owner in accordance with Paragraph 4.05 shall be paid by the Contractor within thirty (30) days after written notice to pay is given by the Owner. If the Contractor does not pay the expenses of such removal and after ten (10) days' written notice being given by the Owner of his intent to sell the materials, the Owner may sell the materials at auction or at private sale and shall pay to the Contractor the net proceeds there from after deducting all the costs and expenses that should have been borne by the Contractor.

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- 7.09 PAYMENT FOR EXTRA OR OMITTED WORK - The Contractor after receiving instructions to submit a proposal for Extra Work or for the Omission of Work shall within ten (10) days, except in an emergency endangering life and/or property, furnish the Architect / Engineer with a Change Order Proposal for transmittal to the Owner. The Contractor shall also submit to the Architect / Engineer an itemized sheet or sheets showing the labor, and separately, the materials to be sold to the Owner involved in the Change Order, together with (1) a maximum mark-up for overhead and profit of 15% on the sum of the aforementioned where the work is to be performed solely by the Contractor, or (2) a maximum mark-up for overhead and profit of 10% by a sub-contractor where the work is to be performed by the sub-contractor with a 5% maximum mark-up by the contractor on the total sub-contractor cost proposal. The Architect / Engineer shall promptly review the change order proposal and forward it to the Owner, together with his recommendations. The addition to or deduction from the contract amount shall be a sum for the materials sold to the Owner and a separate sum for labor and other costs, based on the Contractor's proposal, approved by the Architect / Engineer and accepted by the Owner.

The County is due a credit or a reduction in the total contract amount for omitted work that was originally included in the scope of work; whether it was included in the base bid or by an increase contract amendment (change order). The work previously agreed upon that is not performed by the contractor will result in a decrease contract amendment (credit change order) at a negotiated price between the design consultant (if applicable), The County and contractor.

If the decrease contract amendment is in relation to a previously approved change order, the Overhead and Profit percentages as described above will still apply to the portion of said change order that is being credited. If the credit change order is related to work removed from the original base scope of work associated with the Project at the direction of the Owner, a reasonable Overhead and Profit (O&P) percentage is to be included as part of the change order. It is understood that the Contractor submits bid proposal price at their discretion and therefore the O&P percentage will be proposed by the Contractor and negotiated or approved by the Owner and/or Architect/ Engineer.

- 7.10 PAYMENT FOR WORK SUSPENDED BY THE OWNER - If the work or any part thereof shall be suspended by the Owner, the Contractor will then be entitled to payment for the cost of all work done on the portions so abandoned, but such payment shall not exceed the value of such portion of the work as established under Paragraph 7.01.
- 7.11 PAYMENT FOR WORK BY THE OWNER - The cost of the work performed by the Owner in removing construction equipment, tools and supplies in accordance with Paragraph 3.11 and in correcting deficiencies in accordance with Paragraph 3.13 shall be paid by the Contractor.
- 7.12 PAYMENT FOR WORK BY THE OWNER FOLLOWING HIS TERMINATION OF THE CONTRACT - Upon termination of the Contract by the Owner in accordance with Paragraph 3.14, no further payments shall be due the Contractor until the work is completed. If the unpaid balance of the Contract Amount shall exceed the cost of completing the work, including all overhead cost, the excess shall be paid to the Contractor. If the cost of completing the work shall exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The cost incurred by the Owner, as herein provided, and the damage incurred through the Contractor's default, shall be certified by the Owner, and approved by the Architect / Engineer.
- 7.13 PAYMENT FOR WORK TERMINATED- Upon suspension of the work or termination of the Contract by the Owner, the Contractor shall recover payment from the Owner for the work performed as negotiated with the owner. See Section 7.09 above for additional information.
- 7.14 PAYMENT FOR SAMPLES AND TESTING OF MATERIALS - Samples furnished in accordance with Paragraph 2.11 shall be furnished by the Contractor at his expense.
- A. Testing of samples and materials furnished in accordance with Paragraph 2.11 shall be arranged and paid for by the Owner unless otherwise specified in the detailed specifications.

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- 7.15 RELEASE OF LIENS - The Contractor shall deliver to the Owner a complete release of all liens arising out of this Contract before the retained percentage or before the final Request for Payment is paid.
- 7.16 ACCEPTANCE AND FINAL PAYMENT - When the Contractor shall have completed the work in accordance with the terms of the Contract Documents, the Architect / Engineer shall certify his acceptance to the Owner and his approval of the Contractor's final Request for Payment, which shall be the Contract Amount plus all approved additions less all approved deductions and less previous payments made. The Contractor shall furnish evidence that he has fully paid all debts for labor, materials, and equipment incurred in connection with the work, following which the Owner shall accept the work and release the Contractor except as to the conditions of the Performance Bond, any legal rights of the Owner, required guarantees, and Correction of Faulty Work after Final Payment, and shall authorize payment of the Contractor's final Request for Payment. The Contractor must allow sufficient time between the time of completion of the work and approval of the final Request for Payment for the Architect / Engineer to assemble and check the necessary data.
- 7.17 TERMINATION OF CONTRACTOR'S RESPONSIBILITY - The Contract will be considered complete when all work has been finished, the final inspection made by the Architect / Engineer, and the project accepted in writing by the Owner. The Contractor's responsibility shall then cease, except as set forth in his Performance Bond, as required by the Guaranty Period in accordance with Paragraph 4.09, and as provided in Paragraph 7.18.
- 7.18 CORRECTION OF FAULTY WORK AFTER FINAL PAYMENT - The approval of the final Request for Payment by the Architect / Engineer and the making of the final payment by the Owner to the Contractor shall not relieve the Contractor of responsibility for faulty materials or workmanship. The Owner shall promptly give notice of faulty materials or workmanship and the Contractor shall promptly replace any such defects discovered within two years from the date of written acceptance of the work, or within such longer period as may be incorporated in the Detailed Specification Requirements. The Architect / Engineer shall decide all questions arising under this paragraph.

SECTION 8 - WAGES AND LABOR CONDITIONS

- 8.01 WORKING HOURS - No laborer, workman or mechanic in the employ of the Contractor, subcontractor or other person doing or contracting to do the whole or a part of the work contemplated by this contract shall be permitted or required to work more than eight hours in any one calendar day or more than five days in any one week, except in the emergencies set forth in the Labor Law.
- 8.02 WAGE RATES AND SUPPLEMENTS - Each laborer, workman or mechanic, employed by the Contractor, subcontractor or other person about or upon such public work, shall be paid not less than the prevailing rates of wages and shall be provided supplements not less than the prevailing supplements, as determined by the Industrial Commissioner of the State of New York (see "Information for Bidders").
- 8.03 DISCRIMINATION
- A. In the hiring of employees for the performance of work under this contract or any subcontract hereunder, no Contractor, subcontractor nor any person acting on behalf of such Contractor or subcontractor, shall by reason of race, creed, color 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;
 - B. No contractor, subcontractor, nor any person on his behalf shall, in any manner, discriminate against or intimidate any employee hired for the performance of work under this contract on account of race, creed, color or national origin;

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- C. There may be deducted from the amount payable to the Contractor by the County of Erie under this contract a penalty of five dollars for each person for each calendar day during which such person was discriminated against or intimidated in violation of the provisions of the contract;
- D. This contract may be cancelled or terminated by the County of Erie and all moneys due or to become due hereunder may be forfeited, for a second or any subsequent violation of the terms or conditions of this section of the contract; and
- E. The aforesaid provisions of this section covering every contract for or on behalf of the County of Erie for the manufacture, sale or distribution of materials, equipment or supplies shall be limited to operations performed within the territorial limits of the State of New York.
- F. General Regulation No. 1 as issued by the State Commission Against Discrimination states: "It is hereby agreed by and between the parties hereto that every contractor and subcontractor engaged in the public work described in this contract shall post and maintain at each of his establishments and at all places at which the public work described hereunder is being conducted, the Notice of the State Commission Against Discrimination indicating the substantive provision of the Law Against Discrimination, where complaints may be filed, and other pertinent information. Such Notice shall be posted in easily accessible and well lighted places customarily frequented by employees and applicants for employment."
- G. Provision of the State Law Against Discrimination also prohibits discrimination in employment because of age.

8.04 EQUAL EMPLOYMENT OPPORTUNITY

In the performance of work under Erie County Contracts or any subcontract, no Contractor, subcontractor, nor any person acting on behalf of such Contractor, or subcontractor, in their employment practices, shall by reason of race, color, national origin, sex, age, religion, marital status, or disability discriminate against any citizen of the State of New York who is qualified and available to perform the work to which the employment relates. Reference Title VI of the Civil Rights Act of 1964 (42 USC 200d).

Executive Order 11245, 30 Federal Regulation 12319 (1965) (Equal Opportunity Clause)

During the performance of Erie County contracts, the Contractor agrees:

- A. The Contractor will not discriminate against any employee or applicant for employment because of race, color, national origin, sex, age, religion, marital status, or disability. The Contractor will take affirmative action to ensure the applicants are employed and employees are treated during employment, without regard to their race, color, national origin, sex, age, religion, marital status, or disability. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.
- B. The Contractor agrees to appoint an Equal Employment Opportunity (EEO) officer whose function will be to assure that said Contractor participates fully and effectively in the County of Erie Affirmative Action Program in compliance with the requirements of the County of Erie Contract.
- C. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the EEO officer setting forth the provisions of this non-discrimination clause.

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- D. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor; state that all qualified applicants will receive consideration for employment without regard to race, color, national origin, sex, age, religion, marital status, or disability.
- E. The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided by the organization EEO officer, advising the labor union or workers' representative of the Contractor's commitment under Executive Order No. 11246 on September 24, 1965 and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- F. The Contractor will file, by the fifteenth day of each month with the EEO office and the Contracting Agency, a monthly manpower utilization report of his work force on the Erie County project for the preceding month, broken down by racial groups, craft status, and job classification and including (a) the number of minority workers he has secured and (b) the type of On-the-Job Training he has provided on the Erie County project, the classification of said minority participants (apprentices, journeymen, and trainees), the specific crafts in which they have received training, and the number of hours they have worked.
- G. The Monthly Manpower Utilization Report shall be attached to every Request for Payment Application. Payment Requests will not be reviewed unless the manpower utilization report is attached.
- H. The Contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1965 and all relevant rules, regulations, and orders of an Erie County Contract and the Erie County Affirmative Action Program.
- I. In the event of the Contractor's non-compliance with the nondiscrimination clauses of an Erie County Contract or with any such rules, regulations, or orders that contract may be cancelled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Erie County contracts in accordance with the procedures authorized in Executive Order No. 11246 or as otherwise provided by law.
- J. The Contractor will include the provisions of paragraphs a. through i. in every subcontract or purchase order unless specifically exempted by the rules, regulations, or orders, of an Erie County contractual agreement, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontractor or purchase order as the Contracting Agency may direct as a means of enforcing such provisions including sanctions for non-compliance; provided, however, that in the event the Contractor becomes involved in, or is threatened with litigation with any subcontractor or vendor as a result of such direction by the Contracting Agency, the Contractor may request the County of Erie to enter into such litigations to protect the interests of the County of Erie.

8.05 MONITORING

- A. The EEO Office has the responsibility of administering the Monitoring Program for the County of Erie and its Affirmative Action Program. During the monitoring of an organization, the EEO Office shall receive the full cooperation of the Contracting Agency in dealing with organizations needing remedial actions.
- B. The objective of the County of Erie's Monitoring Program is a systematic review, by the EEO Office, of the Contractor's performance in meeting the goals of minority utilization at each level of his work force. There will be two basic results from the County of Erie's monitoring process:

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- C. Acceptable achievement or progress, according to the program for construction contracts on County of Erie projects, toward the County of Erie's goal of 13.2% minority manpower utilization, and in addition, the County of Erie's goal for the utilization of women in the area of construction shall be in accordance with the U.S. Department of Labor's goal of 6.9%.
 - 1. Insufficient progress toward goals according to the program; if an organization is found to be unwilling to correct deficiencies after a recommended non-compliance investigation, the County of Erie may:
 - a. Summon the Contractor to a hearing
 - b. Withhold progress payments in part or in full
 - c. Cancel the Contract
 - d. Bar the award of future contracts until the Contractor can demonstrate that he will comply
- D. The County of Erie's Monitoring Program will consist of both Off-Site and On-site monitoring.
- E. Off-Site monitoring program shall consist of Monthly Employment Utilization reports submitted via LCPtracker. Due to the regular turnover of the work force of a construction Contractor and because of Federal Compliance reporting requirements, all Contractors and subcontractors must submit these monthly reports to the Erie County EEO Office and the Contracting Agency. These reports will state an employee's EEO identification trade, classification, hours worked, and the percentage of completion for each County of Erie project for each reporting month.
- F. On-Site monitoring, for the purpose of verifying these monthly reports, will be dependent on but not limited to:
 - 1. The compliance status of each Contractor for each County of Erie construction project.
 - 2. Length of the contract, subcontract, or grant and its percentage of completion.
 - 3. Size of the labor force of the organization.
 - 4. Degree of employment opportunity the County of Erie contract, subcontract, or grant will offer to minority workers.
 - 5. Past record of affirmative action achievement of the organization.
 - 6. Past record of affirmative action compliance performance under the EEO Office.
- G. The EEO Office will have an ongoing Master File, dealing with each Contractor or subcontractor for each County of Erie construction project participated in for reference of the past performance of each Contractor.
- H. In the event any deficiencies are found during an Off-Site or On-Site analysis, organization officials shall receive a summary of these deficiencies and the audits made for each reporting month. Any violations found will be fully explained and discussed with the Contractor or subcontractor. During discussions with the EEO Office and the Contracting Agency, alternative solutions to particular problems will be explored. At this time, attempts will be made to obtain the Contractor's agreement to take action by specified dates and a duplicate copy of the agreement will be sent to the Contractor or subcontractor.

8.06 COUNTY OF ERIE MINORITY AND WOMEN'S BUSINESS ENTERPRISE COMMITMENT
Minority/Women's Business & Service-Disabled Veteran Owned Business Utilization Commitment:

- A. Erie County's Minority and Women's Business Utilization Local Law. No. 6, 1987 requires all prime contractors awarded construction contracts let by the County of Erie to exemplify Affirmative Action and subcontract to minority and women's business enterprises MBE/WBE.
1. For the purpose of these regulations, the term "Minority Business Enterprise" refers to a business at least fifty-one percent (51%) of which is owned and controlled by minority group members. Minority group members are citizens of the United States who are Blacks, Hispanics, Asian Americans, American Indians, Eskimos and Aleuts. MBE's must be certified by the Erie County and/or the Erie County City of Buffalo Joint Certification Committee.
 2. For the purpose of these regulations the term "Women's Business Enterprise" refers to a business at least fifty-one percent (51%) of which is owned and controlled by women. WBE's must be certified by Erie County and/or the Erie County/City of Buffalo Joint Certification Committee.
 3. For the purpose of these regulations, the term "Service-Disabled Veteran Owned Business" (SDVOB) refers to a business that is a certified service-disabled veteran-owned business under the New York State Service-Disabled Veteran-Owned Business Act.
 4. Be it further understood that in order for a Minority and/or Women's Business to be certified as such by Erie County and/or the Erie County City of Buffalo Joint Certification Committee and the proposed business is incorporated, that the MBE/WBE must own and control 51% of the stock authorized to be issued by the corporation. Such authorization is made in the Certificate of Incorporation.
 5. The County of Erie has determined that a goal of six percent (6%) of the total contract value represents a fair share of SDVOB utilization, ten percent (10%) of the total contract value represents a fair share of minority business utilization and two percent (2%) of the total contract value represents a fair share of women's business utilization on each construction contract awarded.
 6. This local law requires that positive efforts be made by recipients of Erie County construction contracts to utilize service-disabled veteran owned business as well as minority and women owned business sources for supplies, services and professional services, allowing these sources the maximum feasible opportunity to compete for contracts, subcontracts and third-tier contracts to be performed.
 7. All prime contractors awarded Erie County contracts estimated to exceed \$100,000 are to take positive steps "to afford fair opportunities to SDVOB, MBE's and WBE's". Positive steps shall include but not be limited to:
 - a. Utilizing a source list of bona fide service-disabled veteran owned business, minority and women's business enterprises.
 - b. Solicitations of bids from SDVOB's, MBE's and WBE's particularly of those located in Erie, Niagara, Cattaraugus and Chautauqua Counties.
 - c. Giving service-disabled, minority and women firms' sufficient time to submit proposals in response to solicitations.

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- d. Maintaining records showing minority and women's business enterprises and specific efforts to identify and award contracts to these companies.
 - e. Each contractor bidding on a County of Erie Contract is to contact SDVOB's, MBE's and WBE's and solicit bids for various aspects of each project. The contractor is to supply the County MBE/WBE office with information regarding contracts for services and products with minority and women's business enterprises and the dollar amount of each contract on the Minority Business Utilization Report.
8. Where the SDVOB, MBE or WBE is a supplier, a credit of one hundred percent (100%) of the dollar value of the subcontract between the SDVOB, MBE or WBE and the Contractor shall be awarded toward the fulfillment of the appropriate goal.
9. For purposes of this Section, a SDVOB, MBE or a WBE will be considered a supplier when it:
- a. Assumes actual and contractual responsibility to furnish supplies and/or materials and is the manufacturer of those supplies and/or materials; or
 - b. Is recognized by the manufacturer involved as a distributor of its supplies and/or materials; and
 - c. Owns or leases a warehouse, yard, building or other facility which is necessary and customary to carry out the purported function of the business; and
 - d. Distributes, delivers and services the supplies and/or materials with its' own staff.
10. Where an SDVOB, MBE or WBE performs a sales function, which is customarily performed as a distinct and necessary part of the supply process, a credit of twenty-five percent (25%) of the dollar value of the subcontract between the MBE or WBE, the Contractor will be awarded toward the fulfillment of the appropriate goal.
11. Where the SDVOB, MBE or WBE performs a function or service which is commercially unnecessary, such as acting as a passive conduit in the supply process of duplicating a service provided by others in the same chain of supply from manufacturer to purchaser, no credit will be granted toward the appropriate goal.
12. The qualifications set forth in subsections, above of this Action shall be certified by the Erie County Equal Employment Opportunity Office.
13. All bidders shall submit a properly executed SDVOB/Minority/Women Business Enterprise Utilization Report Part A with their bid proposal at the time of bid.
14. In the event of a joint venture participating in this SDVOB and/or MBE/WBE Program, the Joint Venture Disclosure Affidavit must be submitted with the Minority/Women Business Enterprise Utilization - Prime Contractor Affidavit. Only to the extent that a minority and/or women's business enterprise contributes to and is paid for its participation in a Joint Venture will that dollar amount be credited towards the 10% and/or 2% respectively goal of minority/women's participation in the County of Erie MBE/WBE Program.
15. SDVOB's, MBE's and WBE's must be certified before their participation may be credited toward the respective 6%, 10% and 2% goal. Where the proposed MBE and/or WBE are not certified by Erie County or the Erie County/City of Buffalo Joint Certification Committee, the appropriate Certification Disclosure Affidavit must be filed with the appropriate Erie County/City of Buffalo Department. Forms and lists of certified MBE's/WBE's may be obtained by calling 858-7542.

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16. Should a bidder conclude that they would be unable to satisfy the SDVOB and/ or the MBE/WBE goal, the bidder shall submit a properly executed applicable Waiver Request Form with their bid proposal. Waivers shall be granted only where the availability of SDVOB's, MBE's and/or WBE's in the market area of the project is less than the respective 6%, 10% and 2% goals.
17. Sufficient information must be provided on the SDVOB, Minority and/or Women's Business Enterprise Utilization Waiver Request to ascertain whether a waiver should be approved, conditionally approved or rejected by the Department of Public Works on the advice of the EEO Office.
18. A waiver approval limits the contractor's obligation to solicit SDVOB's, MBE's and/or WBE's for a particular project only. It does not relieve the contractor of MBE/WBE utilization for any other County of Erie project on which he submits a bid.
19. Conditional approval of the waiver request makes it necessary for the contractor to continue soliciting SDVOB's, MBE's and/or WBE's for contracting purposes, after he has been declared the low bidder.
20. A MBE/WBE Utilization Waiver Request will be rejected if the contractor:
 - a. Fails to provide information on the SDVOB, Minority and/or Women's Business Enterprise Utilization Report at the time of the Bid opening.
 - b. Provides fraudulent information on the SDVOB or MBE/WBE reports.
 - c. Fails to make an honest good faith effort to recruit a contractor with SDVOB or MBE's/WBE's.or
 - d. Takes any other action which is contrary to the spirit and intent of the law.
21. The information provided on the SDVOB/MBE/WBE Waiver Request and the SDVOB/MBE/WBE Utilization Report will be considered concurrently to determine if a waiver should be approved, conditionally approved or rejected.
22. The successful low bidder shall submit to the Erie County SDVOB/MBE/WBE Office within 15 business days of the bid opening, a schedule for service-disabled veteran owned business and minority/women's business enterprise participation as applicable, listing the business enterprise with whom the contractor intends to subcontract, specifying the agreed price to be paid for such work, and identifying in detail the contract item(s) or parts to be performed by each business enterprise.
23. A letter of intent to enter into a subcontract or purchase agreement, contingent upon contract award, indicating the agreed upon price and scope of work, shall be provided, signed by both the contractor and the SDVOB/MBE/WBE business enterprise. The prime contractor shall not substitute or delete the listed service-disabled veteran owned business minority and/or women's business enterprise without the written consent of Erie County.

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24. In the event that the SDVOB/MBE/WBE goal for the contract is not met, the contractor shall provide sufficient documentation to establish that every positive effort was made to identify, solicit and negotiate with SDVOB, MBE's and WBE's in pursuit of the goal. Such documentation includes, but is not limited to advertisement in minority-focus media, written contact with minority contractors' associations and community groups and copies of direct solicitation of individual minority businesses indicating sufficient time to prepare quotations. Where an SDVOB/MBE/WBE is rejected due to price, the contractor shall provide documentation of the successful bidder's price along with evidence showing the work to be performed in the same, and not a reduced portion thereof.

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25. The contractor shall provide to the Erie County EEO Office copies of all subcontracts and/or purchase agreements with minority/women's business enterprise within 15 days of contract award. A Notice to Proceed with construction shall not be issued until acceptable documentation is received.
26. Upon completion of the work, the contractor shall provide a properly executed SDVOB/Minority/Women Business Enterprise Utilization Report – Part A-Part D, certifying the total dollar amounts expended to the MBE's & WBE's subcontracted with. This report and all cancelled checks necessary to verify certification are to be submitted to the Erie County EEO Office, prior to final payment request.
27. In the event a contractor fails to comply with these provisions, Erie County may:
 - a. Summon the contractor to a hearing.
 - b. Withhold progress payments in part or in full.
 - c. Cancel the contract.
 - d. Bar award of future contracts until the contractor can demonstrate that he will comply.
28. It is, hereby, the County of Erie's commitment to assure that on all contracts awarded, prime contractors expend a fair share of the contract with bona fide Minority and Women Owned business enterprises in accordance with the goals set forth in the Minority Business Utilization Local Law, No. 1, 1987.
29. It is, hereby, the County of Erie's commitment to assure that on all contracts awarded, prime contractors expend a fair share of the contract with bona fide Service-Disabled Veteran Owned Business enterprises in accordance with the goals set forth in the fide Service-Disabled Veteran Owned Business Utilization Local Law, No. 3, 2023.
30. Failure to comply with the provisions of the law shall constitute a break of contract subject to all remedies available to Erie County.
31. The Prime Contractor and all Service-Disabled Veteran Owned Business, Minority and Women Owned Business subcontractors are bound by all requirements as put forth in the County of Erie Standard General Conditions and all modifications thereto contained in these Contract Specifications.

8.07 COUNTY OF ERIE EXECUTIVE ORDER #13 "PAY EQUITY CERTIFICATION ON COUNTY CONTRACTS"

- A. During the term of this Contract, the agency shall comply with Executive Order 13 (2014), and the Agency shall make such records available, upon request, to the County's Division of Equal Employment Opportunity for review. The County shall have the right, upon reasonable notice and at reasonable times, to inspect the books and records of the agency, its offices and facilities, for the purpose of verifying information supplies in the Erie County Equal Pay Certification and for any other purpose reasonably related to confirming the Agency's compliance with Erie County Executive Order No. 13 (2014). Violation of the provisions of Executive Order 13 (2014) which is attached hereto and made a part hereof, can constitute grounds for the immediate termination of this contract and may constitute grounds for determining that a bidder is not qualified to participate in future county contracts.

1. Refer to Appendix C for the Erie County Executive Order #13 and Equal Pay Certification Form.

2. The Equal Pay Certification Form shall be submitted with the bid proposal.

8.08 COUNTY OF ERIE EXECUTIVE ORDER #18 "FIRST SOURCE HIRING POLICY FOR COUNTY CONSTRUCTION PROJECTS"

- A. During the term of this Contract, Erie County Executive Order No. 18 (2017) may apply. Violation of the provisions of Executive Order 13 (2014) which is attached hereto and made a part hereof, can constitute grounds for the immediate termination of this contract and may constitute grounds for determining that a bidder is not qualified to participate in future county contracts.
1. Refer to Appendix D of the General Conditions for the Erie County Executive Order #18, Rules and Regulations, Erie County Local and Disadvantaged Worker Compliance Certification, County of Erie Executive Order #18 Monitoring and Reports, and First Source Policy Targeted Zip Codes.
 - a. First Source Policy Targeted Zip Codes are provided for information only and subject to change.
 - b. Be advised that the Contractor will be required to provide monthly reports demonstrating good faith effort to meet the required work force goals using LCPtracker web-based software.
 2. The Erie County Executive Order #18 Attestation and Statement of Workforce shall be submitted with the bid proposal.
- B. Requirements of Executive Order No.18 are as shown in Appendix D of the General Conditions and are summarized below. It should be noted that Executive Order No. 18 does not apply to work hours performed by individuals residing outside of New York State per the language of the Executive Order.
- a. 100% of the workforce must be from New York State's 8 Western Counties.
 - b. 70% of the workforce must be from County of Erie.
 - c. 30% of the workforce must be from the identified zip codes included in Appendix D and/or one of the following qualifying disadvantaged status as described below
 - i. Area Medium Income
 - ii. Released from prison in last 10 years
 - iii. Participated in Temporary Assistance for Needy Families Program
 - iv. Participated in Supplemental Nutritional Assistance Program
 - v. Was unemployed for a least 12 consecutive months.

SECTION 9 – ACCOUNTABILITY

- 9.01 The Contractor shall be fully accountable for his performance under this contract and agrees to answer under oath all questions relevant to the performance thereof and to any transaction, act, or omission had, done or omitted in connection therewith if called before any Judicial, County or State Officer or agency empowered to investigate the Contract or its performance.
- 9.02 It shall be the contractor's responsibility for providing and maintaining daily sign-in books for all persons on the project site including; employees, visitors or otherwise at all times during the duration of the project until the project has been completed. Copies of the sign in books are to be provided to the Owner if requested.
- 9.03 The Electrical Contractor (or General Contractor when there is no associated Electrical Contract associated with a given Project) will be responsible to replace all existing smoke detectors within the construction work area with heat detectors, when applicable, at the direction of the Owner.
- 9.04 It is the Contractor's responsibility to perform all work in accordance with the Occupational Safety and Health Administration (OSHA) rules and requirements. All contractors are to ensure that all employees assigned to the Project as defined within the Project Documents, have been OSHA 10 certified. Proof of certification to be uploaded to the LCPtracker software system.
- 9.05 Contractor to ensure that at least one (1) approved fire extinguisher device is on the contraction site at all times. Additional fire extinguishers to be provided at the locations, as applicable, as follows:
- At each stairway on all floor levels where combustible materials have accumulated.
 - In every storage and construction shed.
 - Additional portable fire extinguishers shall be provided where special hazards exist, such as the storage and use of flammable and combustible liquids

**SECTION 10 - THE ERIE COUNTY WORKFORCE DEVELOPMENT AND DIVERSIFICATION NEW YORK
STATE CERTIFIED WORKER TRAINING PROGRAM**

- 10.01 County of Erie Local Law No. 3-2018

**COUNTY OF ERIE
LOCAL LAW INTRO NO. 3 - 2018**

A LOCAL LAW in relation to a requirement for New York State Certified Worker Training Programs by contractors and subcontractors under construction contracts, as defined herein, with the County of Erie.

BE IT ENACTED BY THE ERIE COUNTY LEGISLATURE AS FOLLOWS:

Section 1. Legislative Intent.

The Erie County Legislature hereby finds, declares and determines that:

- A. New York Labor Law Section 816-b specifically authorizes this Local Law.
- B. There has been a long and productive history of partnership between labor and management in the training of workers in New York State.
- C. New York State Certified Worker Training Programs are valuable educational and training tools for the local workforce by reducing reliance on out-of-area labor for construction projects.

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- D. New York State Certified Worker Training Programs provide opportunities to residents in this area through training and education for skilled jobs.
- E. These skilled jobs allow us to reinvest our taxpayer dollars spent on local construction projects so that local workers and local tax dollars remain within the local community.
- F. It would be valuable to encourage labor and business/industry to participate in New York State Certified Worker Training Programs to meet the increased need for trade persons while providing residents the means to earn a better living and fostering the local and regional economies.
- G. It is valuable for local government to encourage broad participation in such New York State Certified Worker Training Programs by the residents of Erie County and to foster the equal opportunity of men and women of all races and backgrounds to participate in order to enhance workforce development and diversification, and to prevent exclusionary practices which have historically excluded women and minorities.
- H. The New York State Department of Labor sets objective standards and provides oversight for New York State Certified Worker Training Programs. These Programs are important because they require on-the-job training and classroom training, and provide objective industry standards. In effect these programs lead to a standardized, cost effective and skilled local workforce.
- I. Nothing in this Local Law should be read to abrogate the duty of Erie County with respect to its MBE/WBE requirements.

Section 2. Short Title.

This Local Law shall be known as "The Erie County Workforce Development and Diversification New York State Certified Worker Training Program."

Section 3. Definitions.

- A. "New York State Certified Worker Training Program" shall mean: a state registered and regulated apprenticeship program through the New York State Department of Labor that has been approved by the New York State Commissioner of Labor in accordance with Article 23 of the New York Labor Law, that includes the following standards:
 - i. An organized, written plan in place that embodies the terms and conditions of employment, and the training and supervision of one or more workers;
 - ii. A schedule of wages to be paid to the worker consistent with the skills required and approved by the New York State Department of Labor;
 - iii. Equal opportunity and affirmative action plans;
 - iv. Workforce development and diversification goals to ensure that the contractor will diligently work toward a minority workforce goal of 30% minority and female participation combined in project personnel including trades people, trainees, journeymen, apprentices and supervisory staff;
 - v. A minimum of ten percent (10%) of the total construction workers. Trades people, trainees, journeymen, and apprentices employed at any given time on a particular project by any and all contractors or subcontractors must be consist of persons participating in a New York State Certified Worker Training Program.

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- vi. In all cases, such Certified Apprenticeship Training Program must be specific to the type and scope of work which is being performed and must have a graduation rate of at least thirty percent (30%) as determined by the New York State Department of Labor.
- B. "Commissioner" shall mean the Commissioner of the Erie County Department of Public Works.
- C. "Construction contract" shall mean projects with a value in excess of \$250,000 where Erie County is a direct or indirect party to the contract which includes more than an incidental amount of construction type activity intended to benefit the public, including all work which is necessary, incidental or connected with the execution of the contract which is performed by construction workers. A public entity need not be party to the construction contract. A construction contract includes: projects that Erie County funds directly, projects that Erie County funds indirectly by providing funds to a separate entity to perform the construction type activity; privately financed construction projects specifically built with the intent of leasing them to any Department of Erie County government; and construction projects built under Erie County's direction and later paid for with Erie County funds.
- D. "Construction subcontract" shall mean any subcontract between a contractor who has a construction contract as defined in Section 3, subdivision C above.
- E. "Contractor" or "subcontractor" shall mean a contractor or subcontractor that directly employs construction workers, as defined below, under a construction contract or construction subcontract, as defined herein, for which a New York State Certified Worker Training Program is required.
- F. "Construction worker" shall mean an individual directly involved in the construction, reconstruction, improvement, rehabilitation, installation, alteration, renovation, demolition or otherwise providing for any building, facility, roads, highways, bridges, or physical structure of any kind, but does not include professional services employees or those construction workers for which a New York State Certified Worker Training Program does not exist.

Section 4. Requirements.

- A. Any contractor, prior to entering into a construction contract as set forth in section 3 (C) above, or any subcontractor entering into a construction subcontract with a contractor who has a construction contract with the County of Erie is required to have in place and provide written proof of same at the time of bid a New York State Certified Worker Training Program, either internally to the contractor or subcontractor and/or through an organization servicing several contractors or subcontractors, appropriate for the type and scope of work to be performed.
- B. Any contractor or subcontractor, as defined herein, shall strive to meet the minimum workforce development and diversification goals set forth in section 3(A) (iv) above. Such contractors and/or subcontractors shall provide the Commissioner or designated compliance officer with the following:
 - i. A monthly workforce census and such other employment and/or payroll records necessary to verify an attempt to achieve the workforce development and diversification goals set forth in Section 3(A)(iv) above.
 - ii. Access to and cooperation with the project compliance officer to review records on-site and/or at worksite premises to validate attempts to achieve the workforce development and diversification goals set forth in Section 3(A)(iv) above.
 - iii. With bid submission, a statement committing to providing apprenticeship training opportunities to workers, as well as details of workforce diversification recruiting program directed at attracting candidates to fill positions to meet the minimum workforce development and diversification goals set forth in Section 3(A)(iv) above.

Section 5. Rules & Regulations.

**COUNTY OF ERIE DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

As of the date this Local Law becomes effective, the Commissioner of the Erie County Department of Public Works shall promulgate such rules and regulations that are lawful, necessary and appropriate to implement, enforce or otherwise carry out the purposes of this Local Law, provided that the Legislature, by simple majority, has not voted to disapprove such rule or regulation within sixty (60) days from the Commissioner's written notice to the Legislature that such rule or regulation has been promulgated.

Section 6. Equal Employment Monitoring.

There shall be an Independent Monitor to report on the compliance of each County contractor and subcontractor with this Local Law's workforce development and diversification goals. The Commissioner of DPW shall develop regulations that provide for the compensation of the Independent Monitor.

The Monitor shall monitor and review every facet of construction to report what percentage of the goals that are established for minority and female participation are met or exceeded. The Monitor shall report to the Equal Employment Opportunity Office on the compliance of each contractor and subcontractor with the workforce development and diversification goals.

The Monitor shall file monthly reports with the Equal Employment Opportunity Office regarding the actual workforce development and diversification goals, including reporting all instances of non-compliance; make appropriate recommendations to the Equal Employment Opportunity Office when non-compliance is evident with supportive documentation; develop a database of the workforce of each contractor and subcontractor to provide a visual format of each contractor's workforce, both monthly and year-to-date cumulative totals on each construction contract.

Section 7. Compliance.

The Director of Erie County Division of Equal Employment shall ensure that all contractors and subcontractors entering into a construction contract as it is defined herein, maintain records which prove that each construction worker as it is defined herein, signs in and out at the beginning and end of each day, listing next to his or her name his or her craft, and status as journeyman or apprentice, if applicable.

Section 8. Penalties.

Violation of any provision of this Local Law shall constitute cause, grounds or other legal justification for termination of any contractual agreement with any contractor or subcontractor engaged in a construction contract or construction subcontract with the County, in accordance with County and state laws, rules and regulations governing the termination of such contractual agreements.

Section 9. Severability.

If any clause, sentence, paragraph, subdivision, section or part of this Local Law or the application thereof, to any person, individual, corporation, firm, partnership, entity or circumstance, shall be adjudged by any court of competent jurisdiction to be invalid or unconstitutional such order of judgment shall not affect, impair, or invalidate the remainder thereof, but shall be confined in its operation to the clause, sentence, paragraph, subdivision, section or part of this Local Law or in its application to the person, individual, corporation, firm, partnership, entity, or circumstance directly involved in the controversy in which such judgment or order shall be rendered.

Section 10. Applicability.

This Local Law shall apply to construction contracts advertised for bids on or after the effective date with the following condition:

**COUNTY OF ERIE DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

Apprenticeship agreements currently in place as of the effective date of this Local Law which are still in probationary status or apprenticeship agreements which were in probationary status during the period preceding the specific trade's program length as set forth in the New York State Prevailing Wage Schedule, shall be exempt from the 30% apprenticeship graduation requirement specified in Section 3 (A) (vi) for the period measured from the date the apprenticeship program is registered with the New York State Department of Labor plus the specific trade's program length plus two years.

Section 11. Effective Dates.

This Local Law shall take effect 30 days after the filing with the Secretary of State, in accordance with Section 27 of the New York State Municipal Home Rule Law.

SPONSORS: PATRICK BURKE
APRIL N.M. BASKIN
JOHN BRUSSO

**COUNTY OF ERIE DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

10.02 Rules and Regulations Adopted by the Erie County Commissioner of Public Works Regarding Local Law No. 3-2018

**RULES AND REGULATIONS ADOPTED BY THE
ERIE COUNTY COMMISSIONER OF PUBLIC WORKS
REGARDING:
COUNTY OF ERIE
LOCAL LAW NO. 3-2018**

A LOCAL LAW in relation to a requirement for New York State Certified Worker Training Programs by contractors and subcontractors under construction contracts, as defined herein, with the County of Erie.

Pursuant to Section 5 of Erie County Local Law No. 3-2018, "the Commissioner of the Erie County Department of Public Works shall promulgate such rules and regulations that are lawful, necessary and appropriate to implement, enforce or otherwise carry out the purposes of this Local Law..." Such rules and regulations are as follows:

1. Definitions.

"Bidders" – an individual or entity which submits a formal Bid for a Construction Contract, as hereinafter defined.

"Bids" – formal bids submitted for a Construction Contract, as hereinafter defined, in accordance with New York General Municipal Law.

"Commissioner" – Erie County Commissioner of Public Works

"Construction Contract" – a contract for a Project which includes more than an incidental amount of construction-type activity performed by persons in trades or careers for which there exists an NYSCATP, as hereinafter defined.

"Contracting Agency" – a department, division, board, agency or office of the County, an entity undertaking a Project that Erie County funds indirectly, or an entity undertaking a Project with the specific intent of leasing the completed Project to the County, which solicits and receives Bids for a Construction Contract.

"Local Law" – Erie County Local Law 3-2018

"Monitoring Agency" – the Erie County Equal Employment Opportunity Office

"New York State Certified Apprentice Training Program" or "NYSCATP" - a state registered and regulated apprenticeship program(s) approved by the Commissioner of the New York State Department of Labor in accordance with Article 23 of the Labor Law and the Rules and Regulations thereto.

"Prime Contractor" – the party with whom the Contracting Agency contracts with on a Project.

"Project" – the construction, reconstruction, improvement, rehabilitation, installation, alteration, renovation, demolition or otherwise of any building, facility, roads, highways, bridges, or physical structure of any kind, estimated by the Contracting Agency as having a cost to complete in excess of \$250,000, for which the County is a direct or indirect party to a Construction Contract. Projects include those: that Erie County funds directly, either in whole or in part; that Erie County funds indirectly, either in whole or in part, by providing funds to a separate entity to perform the construction-type activity; privately financed construction projects specifically built with the intent of leasing the completed project to Erie County; and construction projects built under Erie County's direction and later paid for with Erie County funds.

"Rules" – these rules and regulations promulgated by the Commissioner pursuant to the Local Law.

"Subcontractor" – A subcontractor to a Prime Contractor.

**COUNTY OF ERIE DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

“Workforce” – the total worker hours anticipated on the Construction Contract to be undertaken by workers in careers or trades for which there exists an NYSCATP.

2. Rules and Regulations.

- A. Each Contracting Agency shall include in its bid specifications provisions for the implementation of the Local Law and these Rules. Bids shall demonstrate a Bidder's ability to comply with the Local Law and these Rules and in the event that Bidder is a successful Prime Contractor on a Construction Contract.
- B. Bidder shall submit as part of the Bid a copy of the certification of approval of the NYSCATP by the New York State Department of Labor which will be used by the Bidder in connection with the Construction Contract. Such NYSCATP shall be a NYSCATP registered by the NYS Commissioner of Labor which will be utilized by the Bidder on the Construction Contract by the Bidder as a Prime Contractor or by the Bidder's Subcontractor(s).
- C. As part of its' Bid, Bidder shall provide a written plan demonstrating how apprentices will be utilized by the Bidder as Prime Contractor or by Subcontractor(s) to the Bidder as Prime Contractor. Such plan shall include at a minimum, but not be limited to the following:
 - i. An organized, written plan in place that embodies the terms and conditions of employment, training and supervision of one or more apprentices;
 - ii. A schedule of wages to be paid to the apprentices consistent with the skills required and approved by the New York State Department of Labor;
 - iii. Equal employment opportunity and affirmative action plans.
 - iv. Demonstration that ten percent (10%) of the Workforce of the Prime Contractor (inclusive of the workforce utilized by any Subcontractor(s) to the Bidder) shall consist of persons participating in New York State Certified Apprentice Training Programs.
- D. In the alternative Bidder may provide a statement as to the inapplicability of apprenticeship participation on the Prime Contract and the related subcontracts due to the lack of career opportunities in NYSCATP approved by New York State Department of Labor Commissioner or that the magnitude of the Construction Contract would make use of apprentices impracticable. In the event that Bidder provides a statement that there is a lack of such career opportunities or the use of apprentices on the Construction Contract is impracticable, said Bidder may not be deemed non-responsive by virtue of the submission of such a statement, as determined by the Monitoring Agency. Applicability of this section will be viewed within the total Workforce of each Prime Contract and not as a function of each subcontract of the Construction Contract as a whole.
- E. As part of its' Bid, Bidder shall provide affirmation of its commitment toward acceptable achievement or progress towards the County of Erie workforce development and diversification goal in all construction contracts of thirty percent (30%) minority and female participation combined in project personnel including trades people, trainees, journeymen, apprentices and supervisory staff.
- F. Contracting Agency may determine prior to the advertisement of bids for the Project or prior to the award of Bids that the nature of the Construction Contract does not provide an adequate opportunity for the use of NYSCATP for such reasons including, but not limited to, that:
 - i. 75% or more of the value of the Construction Contract involves material, equipment and/or supplies;
or

**COUNTY OF ERIE DEPARTMENT OF PUBLIC WORKS
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- ii. There is a lack of NYSCATP approved by the Department of Labor for at least 75% of the work hours anticipated to be spent on construction-type activity involved in the Construction Contract; or
 - iii. The Construction Contract is in response to an emergency condition; or
 - iv. The Project is estimated to cost less than \$250,000 or the Bid amount is less than \$250,000; or
 - v. None of the bids received were from Bidders who had an NYSTACP.
- G. All Bids shall be reviewed by the Monitoring Agency within 10 business days of delivery of the Bids by the Contracting Agency to the Monitoring Agency. A Contracting Agency shall not reject any Bid as being non-responsive to the requirements of the Local Law and these Rules, unless the Monitoring Agency, within 10 business days of receipt of Bids from the Contracting Agency, provides the Contracting Agency with a written report recommending non-responsiveness of the Bidder and the reasons therefore. Determination of a Bidder's compliance with the Local Law and these Rules shall be the responsibility of the Monitoring Agency.
- H. The Contracting Agency is permitted to require within the Bid specifications for a Project, a reasonable fee for the Prime Contractor to hire an independent monitor to review and report on the diversification goals of the Local Law

3. Effect

These Rules and Regulations shall become effective immediately. No Rule or Regulation promulgated herein shall be disapproved by the Erie County Legislature unless and until such time as the public, following 10 days advertised notice, is given the opportunity to comment upon such rule or regulation.

APPENDIX "A"

EQUAL EMPLOYMENT OPPORTUNITY FORMS

COUNTY OF ERIE DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER

BID DATE: _____

TODAY'S DATE: _____

**ERIE COUNTY MINORITY/WOMEN BUSINESS ENTERPRISE & SERVICE-DISABLED
VETERAN-OWNED BUSINESS UTILIZATION REPORT- PART A**

COMPANY: _____

AUTHORIZED REPRESENTATIVE: _____

ADDRESS: _____

TELEPHONE NUMBER: _____

PROJECT NAME: _____

PROJECT NUMBER: _____

- I. List actions taken to identify, solicit, and contact Minority Business Enterprise (MBE), Women Business Enterprise (WBE) & Service-Disabled Veteran-Owned Business (SDVOB) to bid on subcontracts for this project.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

- II. List all bona-fide Minority/Women Business Enterprise & Service-Disabled Veteran-Owned Businesses, sub-contractors, suppliers, professional personnel, solicited, contracted, or presently negotiating a contract in accordance with the minority business utilization goal set forth by the County of Erie.

MBE/WMB/SDVOB OWNED FIRMS	SUPPLY/ SERVICE	AMOUNT OF PROPOSAL	PRIOR CERTIFICATION	CONTRACT EXECUTED	REASON IF CONTRACT NOT AWARDED

NAME: _____

YES

ADDRESS: _____

CITY, STATE: _____

TELEPHONE: _____

NO

IRS #: _____

COUNTY OF ERIE DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER

MBE/WMB/SDVOB OWNED FIRMS	SUPPLY/ SERVICE	AMOUNT OF PROPOSAL	PRIOR CERTIFICATION	CONTRACT EXECUTED	REASON IF CONTRACT NOT AWARDED

NAME: _____

YES

ADDRESS: _____

CITY, STATE: _____

TELEPHONE: _____

NO

IRS #: _____

MBE/WMB/SDVOB OWNED FIRMS	SUPPLY/ SERVICE	AMOUNT OF PROPOSAL	PRIOR CERTIFICATION	CONTRACT EXECUTED	REASON IF CONTRACT NOT AWARDED

NAME: _____

YES

ADDRESS: _____

CITY, STATE: _____

TELEPHONE: _____

NO

IRS #: _____

MBE/WMB/SDVOB OWNED FIRMS	SUPPLY/ SERVICE	AMOUNT OF PROPOSAL	PRIOR CERTIFICATION	CONTRACT EXECUTED	REASON IF CONTRACT NOT AWARDED

NAME: _____

YES

ADDRESS: _____

CITY, STATE: _____

TELEPHONE: _____

NO

IRS #: _____

MBE/WMB/SDVOB OWNED FIRMS	SUPPLY/ SERVICE	AMOUNT OF PROPOSAL	PRIOR CERTIFICATION	CONTRACT EXECUTED	REASON IF CONTRACT NOT AWARDED

NAME: _____

YES

ADDRESS: _____

CITY, STATE: _____

TELEPHONE: _____

NO

IRS #: _____

COUNTY OF ERIE DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER

III. Assistance offered by contractor to MBE's/WBE's/SDVOB's as to bonding, union requirements obtaining work capital, etc.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

IV. Total Dollar Amount to be subcontracted to:

Minority Business Enterprise(s). \$ _____

Women Business Enterprise(s). (if applicable) \$ _____

Service-Disabled Veteran-Owned Business(s). \$ _____

V. Total Amount of Bid \$ _____

VI. MBE Percent (%) of project bid: (EC goal is 10%) _____ %

WBE Percent (%) of project bid: (EC goal is 2%) _____ %

SDVOB Percent (%) of project bid: (EC goal is 6%) _____ %

VII. YOU MUST ATTACH COPIES OF RELEVANT CORRESPONDENCE AND DOCUMENTS, INCLUDING RETURN RECEIPTS UPON LOW BIDDER STATUS TO EEO.

SIGNATURE OF AUTHORIZED REPRESENTATIVE

DATE

VIII. CONTRACTOR'S DESIGNATED EQUAL OPPORTUNITY OFFICER (EEO)

NAME

DATE

**COUNTY OF ERIE MINORITY/WOMEN BUSINESS ENTERPRISE
& SERVICE-DISABLED VETERAN-OWNED BUSINESS UTILIZATION REPORT PART – B**

Certificate of Expenditures at 30% Completion of Project

Contractor: _____ Contractor Name: _____

- I. List all bona-fide minority/women business enterprises & Service-Disabled Veteran-Owned Business, subcontractors, suppliers, professional personnel, or joint venture firms, with whom you have entered into a binding agreement in accordance with the MWBE/SDVOB Business Utilization Goal set forth by the County of Erie. Include (minority trucking) firms that will be utilized and include an estimated dollar amount. The information must be submitted to the County of Erie when the project is 30% complete.

MBE/WBE/SDVOB OWNED FIRMS (SEE REVERSE SIDE IF MORE SPACE IS NEEDED)	TYPE OF WORK	DATE CONTRACT EXECUTED	TOTAL EXPENDED TO DATE	ESTIMATED AMOUNT REMAINING

NAME: _____
ADDRESS: _____
CITY, STATE: _____
TELEPHONE: _____
IRS #: _____

MBE/WBE/SDVOB OWNED FIRMS (SEE REVERSE SIDE IF MORE SPACE IS NEEDED)	TYPE OF WORK	DATE CONTRACT EXECUTED	TOTAL EXPENDED TO DATE	ESTIMATED AMOUNT REMAINING

NAME: _____
ADDRESS: _____
CITY, STATE: _____
TELEPHONE: _____
IRS #: _____

Erie County reserves the right to require documentation including, but not limited to, cancelled checks to verify these amounts.

- II. Total Dollar Amount To Be Subcontracted To:
- Minority Business Enterprise(s). \$ _____
- Women Business Enterprise(s). (if applicable) \$ _____
- Service-Disabled Veteran-Owned Business(s). \$ _____
- III. Total Amount Expended To Date: \$ _____

OFFICE OF THE COMMISSIONER

- IV. Total Amount of Bid: \$ _____
- V. MBE Percent (%) of project bid: _____ %
- WBE Percent (%) of project bid: _____ %
- SDVOB Percent (%) of project bid: _____ %

I, _____

As an official representative of _____

do hereby certify that the information listed above is correct and complete.

NAME

DATE

TITLE

**MINORITY/WOMEN BUSINESS ENTERPRISE & SERVICE-DISABLED VETERAN-OWNED
BUSINESS UTILIZATION REPORT – PART C CERTIFICATION OF EXPENDITURES TO MBEs/WBEs**

(To Be Completed by the Prime Contractor and submitted at the 75% payment level.)

Contractor: _____

Contractor Name: _____

MBE / WBE	PART B CONTRACT AMOUNT OR ESTIMATE	TOTAL EXPENDED TO DATE	ESTIMATED AMOUNT REMAINING
MBE's			
WBE's			
SDVOB's			

Erie County Reserves the right to require documentation, including, but not limited to, cancelled checks to verify these amounts.

I, _____

As an official representative of _____

do hereby certify that the information listed above is correct and complete.

NAME

DATE

TITLE

MINORITY BUSINESS ENTERPRISE UTILIZATION REPORT-PART D
FINAL CERTIFICATION OF EXPENDITURE TO MBE's/WBE's/SDVOB's

(To be completed by the prime contractor and submitted when contract is complete)

Erie County reserves the right to require documentation, including, but not limited to, cancelled checks to verify these amounts.

Contractor:

Contractor Name:

MBE	TOTAL AMOUNT EXPENDED
WBE	TOTAL AMOUNT EXPENDED
SDVOB	TOTAL AMOUNT EXPENDED

TOTAL OF ALL MBE SUBCONTRACTS \$ _____

TOTAL OF ALL WOMEN SUBCONTRACTS (if applicable) \$ _____

TOTAL OF ALL SDVOB SUBCONTRACTS \$ _____

FINAL MBE PERCENTAGE _____ %

FINAL WBE PERCENTAGE (if applicable) _____ %

FINAL SDVOB PERCENTAGE _____ %

I, _____

As an official representative of _____

do hereby certify that the information listed above is correct and complete.

NAME DATE

TITLE

AUTHORIZATION FOR RELEASE OF MWBE/SDVOB INFORMATION TO ERIE COUNTY

I, _____ as principal officer of: _____

Hereby authorize Erie County's representative to have access to: _____

MWBE/SDVOB certification materials, filed with: _____

File documents may be released to Erie County's representative to expedite the County's M.B.E
certification process for: _____

SIGNED DATE

TITLE

*Sworn to before me

This _____ day of _____, 2023"

Notary Public / Commissioner of Deeds



County of Erie
Division of Equal Employment Opportunity
James Blackwell
Director

M/WBE WAIVER PACKET

Instructions for Prime Contractors:

The utilization of certified M/WBEs for non-commercially useful functions may not be counted towards utilization of certified M/WBEs in the Utilization Plan.

M/WBE firms must be certified by Erie County's Division of Equal Employment Opportunity ("DEEO") or by New York State ("NYS") in order to be counted towards satisfaction of M/WBE participation goals.

See the Bid Packet at or consult the DEEO for further guidance.

**Erie County Division of Equal Employment Opportunity
Minority- & Women- Owned Business Enterprise (M/WBE) Utilization Waiver
Attachment A**

Section 1: M/WBE Utilization Waiver Request: Letter of Explanation

The purpose of this letter is to provide the Project Manager and the Division of Equal Employment Opportunity ("DEEO") a summary of the steps taken by the Prime Contractor to obtain Minority-owned Business Enterprise ("MBE") and Women-owned Business Enterprise ("WBE") subcontractors and request a partial or full waiver from the M/WBE Participation Goals.

A summary of the steps taken, include:

- (1) Break out all subcontract opportunities;
- (2) Search the DEEO M/WBE Directory in those areas (a list of County certified M/WBEs can be found here: <https://www3.erie.gov/eeo/>). Additionally, search New York States ("NYS") M/WBE Directory (a list of NYS certified M/WBEs can be found here: <https://ny.newnycotntracts.com/?TN>)
- (3) Solicit bids from M/WBE firms:
Document at least two (2) contacts using two (2) different methods of contact; Contact more than one (1) M/WBE in each area – the number depends on how large the contract is); and
- (4) Document solicitations using the Solicitation Log (Attachment B). Keep copies of the DEEO and NYS M/WBE Directory search results, or any faxes, emails and quotes from Erie County and NYS certified M/WBEs.

The letter shall include:

- (1) A short description of the scope of work involved in the contract;
- (2) A short description of the subcontracting opportunities available. If there are limited subcontracting opportunities, explain the reason for the limited opportunities. For example, explaining that your company always self-performs the work is not a valid reason for granting a waiver.
- (3) Results of the DEEO M/WBE Directory search.
For example: were firms available; how many; were they qualified?
- (4) General results of solicitations.
For example: what happened? If a non-M/WBE bid lower than a M/WBE, did you negotiate?
 - a. Include specific information about the solicitation results in areas where M/WBEs weren't obtained you want the waiver reviewer to know about
- (5) Formally mention, in the letter, your request for a partial or full waiver.

**Erie County Division of Equal Employment Opportunity
Minority- & Women- Owned Business Enterprise (M/WBE) Utilization Waiver Checklist**

The following checklist is for the Project Manager to use when reviewing the M/WBE Utilization Waiver Request. Once the Project Manager is satisfied, they should forward the Waiver Request forms, along with this signed checked list, to the Director or Erie County's Division of Equal Employment Opportunity ("DEEO") for final review and approval/denial.

M/WBE Waiver Request Form

There are two types of requests: Full Waiver from meeting the M/WBE Goals or a Partial Waiver from meeting the full M/WBE Goals. The Waiver Request Form contains examples of Good Faith Effort documentation. However, the following checklist contains items that are required before submission to the DEEO.

- ☐ Letter of Explanation for Waiver Request
- ☐ Copies of advertisements for M/WBE Participation, if applicable
- ☐ Screenshots of search results (by business type) from the DEEO's and the NYS M/WBE Directory
- ☐ A completed Solicitation Log (See Attachment A). The log shall be broken out into separate areas for each task that is solicited (e.g. electrician, plumbing, drywall, painting, etc.). The log shall show: (1) each M/WBE firm was contacted at least twice, by two (2) different methods (e.g. phone, e-mail, fax, etc.), and (3) with whom the Requesting Firm spoke with at the potential M/WBE firm.

The following items are optional, depending on the type of request:

- ☐ Quotes from M/WBEs and non-M/WBEs to show the lowest responsible bidder
- ☐ Documentation of any negotiations Prime Contractor has/had with M/WBEs
- ☐ Any other documentation to show GFE, such as: e-mail correspondence, sign in sheet from any pre-bid meetings, etc.

Acknowledgement and Signature

- ☐ By checking this box and signing below, you affirm that all of the information requested is included in this package, and that all information is honest, true, and accurate to the best of your knowledge.

Prime Contractor – Print Name

Prime Contractor Signature

Date

**Erie County Division of Equal Employment Opportunity
Solicitation Log (Examples Included)
Attachment A**

Company Name	MBE or WBE	Work Type	Location	Contact 1 - Date	Contact 1 - Type	Result	Contact 2 - Date	Contact 2 - Type	Result	Overall Result/Reason Chosen or Not/Comments
ABC	MBE	Doors and Windows	Rochester	12-Apr	Fax	Went thru, No response	14-Apr	Phone	Left VM	No response
XYZ	MBE	Doors and Windows	Syracuse	12-Apr	Fax	Went thru, May bid	21-Apr	Phone	Spoke with Kathy.	Declined to bid.
123	WBE	Doors and Windows	Albany	12-Apr	Fax	Went thru, No response	14-Apr	Phone	Spoke with Bob.	Don't offer the items.
Tough guy	MWBE	masonry	Liverpool	12-Apr	Email	Undeliverable	12-Apr	Fax	Went thru, No response	No response
Quality	WBE	masonry	Plattsburgh	12-Apr	Fax	Went thru, will respond	16-Apr	Phone	Left VM	Received quote, too high
GENERAL CON	NA	masonry	Plattsburgh	12-Apr	Email	Responded low bidder	X	X	X	See quote comparison

**Erie County Division of Equal Employment Opportunity
Minority- & Women- Owned Business Enterprise (M/WBE) Utilization Plan & Waiver Request**

SECTION 3: SUPPORTING DOCUMENTATION

To be considered, the Request for Waiver Form must be accompanied by the documentation requested in items 1 – 9, as listed below. Copies of the following information and all relevant supporting documentation must be submitted along with the request. Please contact the DEEO for assistance.

1. A letter of explanation setting forth your basis for requesting a partial or total waiver and detailing the good faith efforts that were made.
2. Copies of advertisements in any general circulation, trade association, and minority- and women-oriented publications in which you solicited MWBEs for the purposes of complying with your participation goals, with the dates of publication.
3. Screenshots of search results (by business description or commodity code) from Erie County's Equal Employment Opportunity MWBE Directory of all certified MWBEs that were solicited for purposes of complying with your MWBE participation goals.
4. Copies of faxes, letters, or e-mails sent to MWBE firms to solicit participation and their responses.
5. A log of solicitation results, consisting of the list of MWBE firms solicited for the contract and the outcome of the solicitations. The log should be broken out into separate areas for each task that is solicited (e.g., trucking, materials, electricians) and clearly provide a rationale for firms included on the completed Utilization Plan as well as for those not chosen. The log should show: that each MWBE firm was contacted twice by two different methods (e.g., fax and phone); who was spoken to; what was said; and the final outcome of the solicitation.
6. A description of any contract documents, plans, or specifications made available to MWBEs for purposes of soliciting their bids and the date and manner in which these documents were made available. Specifically, include information on the scope of work in the contract and a breakout of tasks or equipment, such as a schedule of values for a construction contract or a proposal or excerpt from a professional services agreement.
7. Documentation of any negotiations between you, the Contractor, and the MWBEs undertaken for purposes of complying with your MWBE participation goals.
8. Any other information you deem relevant which may help us in evaluating your request for a waiver. Examples may include sign-in sheets from any pre-bid meetings where MWBE firms were invited, attendance at MWBE forums, etc.
9. The Project Manager and/or the DEEO reserve the right to request additional information and/or documentation.

Note: Unless a Total Waiver has been granted, Firms will be required to submit all reports and documents pursuant to the provisions set forth in the procurement and/or contract, as deemed appropriate by Erie County, to determine MWBE compliance. In cases where Erie County accepts a full or partial waiver of MWBE participation goals, the waiver request approval will be added to your file.

SIGNATURE

Prime Contractor Acknowledgement: ☐ I certify that the information submitted herein is true, accurate and complete to the best of my knowledge and that all M/WBE subcontractors will perform a commercially useful function.

Prime Contractor/Contractor's Authorized Representative's Name (Please Type):

Prime Contractor/Contractor's Authorized Representative's Signature:

Date:

**Erie County Division of Equal Employment Opportunity
Minority- & Women- Owned Business Enterprise (M/WBE) Utilization Plan & Waiver Request**

SECTION 4: DIVISION OF EQUAL EMPLOYMENT OPPORTUNITY INFORMATION (FOR THE DEEO USE ONLY)					
DEEO Director:		Email:		Phone #:	
Signature DEEO Director:			Date:		
DEEO Director Acknowledgement: ☐ I certify that the information submitted herein is true, accurate and complete to the best of my knowledge and belief.					
Complete if applicable:					
DEEO Director/Authorized Rep.:			Title:		
Email:			Phone #:		
Signature of DEEO Representative:			Date:		
DEEO Representative Acknowledgment: ☐ I certify that the information submitted herein is true, accurate and complete to the best of my knowledge and belief.					
<u>Comments:</u>					

APPENDIX “B”

**COUNTY OF ERIE – DEPARTMENT OF PUBLIC WORKS BUILDING PERMIT
APPLICATION AND INSURANCE REQUIREMENTS**

Exhibit 1B – Building Permit Application

Exhibit 2B – Contractor Insurance Requirements

MARK C. POLONCARZ
COUNTY EXECUTIVE



WILLIAM E. GEARY
COMMISSIONER OF PUBLIC WORKS

Building Permit Application

ECDPW Building Permit No.

Part I: General Information

1. Project Location and Information

Project Name:
Name and Address:
Building Name:

2. Architect/Engineer (Prime)

Name:
Address:
City, State, Zip: Phone Number:

3. Contractor

Name:
Address:
City, State, Zip: Phone Number:

4. Type of Construction or Improvement

☐ New Building: Proposed use is			
☐ Conversion:	Current use is	Proposed use is	
☐ Addition	☐ Alteration	☐ Repair/Replacement	☐ Relocation
☐ Demolition	☐ Sign	☐ Fence	☐ Equipment
☐ Other (Describe)			

NOTE: AN INCOMPLETE APPLICATION MAY DELAY THE TIMELY ISSUANCE OF YOUR PERMIT; PLEASE ENTER N/A IF A SECTION IS NOT APPLICABLE

5. Use and Occupancy Classification

☐ Assembly Group A	☐ Business Group B	☐ Education Group E	☐ Factory Group F
☐ High-Hazard Group H	☐ Institutional Group I	☐ Mercantile Group M	☐ Residential Group R
☐ Storage Group S	☐ Utility Group U		

If Assembly, Factory, High-Hazard, Institutional, Residential or Storage indicate Group subcategory type (e.g. Assembly A4) and Describe:

6. Special Inspections Required (3Rd Party) ☐ N/A

☐ Electrical	☐ Mechanical	☐ Plumbing	☐ Geotechnical
☐ Foundations	☐ Compaction	☐ Steel	☐ Equipment
☐ Asbestos	☐ Hazardous Materials	☐ Medical Specialties	☐ Other:
☐ Chapter 17 – Structural Tests and Special Inspections			

7. Dimensions of EXISTING Buildings:

Description:	Width:	Length:	Height:	No. of Stories:

8. Dimensions of NEW Buildings:

Description:	Width:	Length:	Height:	No. of Stories:

9. Lot Dimensions:

Description:	Width:	Length:	Height:	No. of Stories:

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10. Description of Project: (If need additional space please attach sheets to application). For any mixed occupancy, specify in detail the nature and extent of each use.

11. Estimated Project Cost

Cost of the work to be performed, **excluding** land costs:

CONTINUE TO PART TWO: DO NOT WRITE BELOW THIS LINE – OFFICIAL USE ONLY

Date Received:	Received by:	Forwarded to (for review):
Additional Approvals needed:		
☐ Historic Preservation	☐ Environmental Impact Statement	☐ Engineering:
☐ Attorney:	☐ Other (explain):	☐ None

Part II: Not Used

Part III: Project Location and Details

1. This application must be accompanied by two complete sets of plans and specifications. Depicting the scope of the work to be performed.
2. Location of the proposed structure or addition showing the number of stories and all exterior dimensions.
3. The distance of the proposal from all lot lines and any structure including neighboring structures.
4. The depth of the proposed foundation or footers.
5. The maximum percentage of the lot to be covered by building(s).
6. The Water Supply is: ☐ Municipal Water ☐ Existing Well ☐ New Well
7. Site is: ☐ Within Flood Plain ☐ **Not** within Flood Plain
☐ Designated as a Wetland ☐ **Not** Designated as a Wetland

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8. A drawing showing the existing conditions surrounding the project area. The drawing must include but not limited to adjacent: locations, exiting requirements, fire separations and functional areas, etc. Indicate with sufficient clarity and detail the nature and extent of the work proposed and its context. Failure to do so will interrupt the approval process until all the pertinent information is received.
9. Architectural and/or Engineered drawings are required. Drawings need to be prepared by a New York registered Architect or Licensed Professional Engineer. When the project floor area exceeds fifteen hundred (1,500) square feet and/or the project costs twenty thousand (\$20,000) dollars or more.

Part IV: Notices (Read before signing):

1. Work conducted pursuant to a building permit must be visually inspected by the Code Enforcement Official and must conform to the New York State Uniform Fire Prevention and Building Code, and all applicable local, County of Erie, state and federal: laws, codes, rules and regulations.
2. In the event that there are changes to the scope of work that has been approved on the building permit, the Erie County Department of Public Works, Office of the Commissioner **must be notified immediately** of the same.
3. Prior to the start of Demolition activities the potential for exposure to asbestos and any other hazardous materials must be identified. Accordingly, an abatement plan that complies with New York State Department of Labor rules must be implemented.
4. It is the owner's responsibility to contact the Erie County Department of Public Works, Office of the Commissioner at (716) 858-8301 (Monday through Friday from 8am to 4pm) at least **72** hours before the owner and/or contractor wishes to have an inspection conducted. Inspections will be performed by appointment only. More than one inspection may be necessary. This is especially true for "internal work" which will eventually be covered from visual inspection by additional work (i.e. electrical work later to be covered by a wall).

Part V: Inspections (Read before signing):

1. **PROVISIONS SHALL BE MADE FOR INSPECTION OF THE FOLLOWING ELEMENTS OF THE CONSTRUCTION PROCESS, WHERE APPLICABLE:**
 - a. Work site prior to the issuance of a permit
 - b. Fire rated construction
 - c. Footing and foundations
 - d. Fire rated penetrations
 - e. Preparation for concrete slab
 - f. Solid fuel burning heating appliances, chimneys, flues or gas vents
 - g. Framing
 - h. Energy code compliance

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- i. Rough-in of all building systems, including but not limited to: Electrical, Plumbing, Gas or Fuel Piping, Security, HVAC, Temperature Controls, etc.
 - j. A final inspection after all work authorized by the building permit has been completed
- 2. DO NOT PROCEED TO THE NEXT STEP OF CONSTRUCTION IF SUCH "INTERNAL WORK" HAS NOT BEEN INSPECTED. Otherwise, work may need to be removed at the contractor's expense to conduct the interior inspection. Close coordination with the Erie County Department of Public Works, Office of the Commissioner will greatly reduce this possibility.
- 3. All permitted electrical work to be performed will be inspected by a certified independent third party having the prior approval of the Department of Public Works. Such inspections shall be paid for by the Contractor.
- 4. Owner hereby agrees to allow the Erie County Department of Public Works, Office of the Commissioner to inspect the sufficiency of the work being done pursuant to this permit, provided however, that such inspection(s) is (are) limited to the work being conducted pursuant to this permit and any other non work related violations which are readily discernible from such inspection(s).
- 5. New York State law requires contractors to maintain Worker's compensation and Disability Insurance for their employees. The contractor, as part of their Building Permit Application, shall submit copies of their NYS Workmen's Compensation and NYS Worker's Disability Insurance Certificates on the prescribed New York State forms. The County also requires Certificates of Insurance as limited on the attached Schedule for Contractors performing work on County property whether contracted by the County or third party. Please use the attached Standard Insurance Certificate with the "County of Erie, 95 Franklin St, Buffalo, NY 14202" listed as Certificate Holder.
- 6. All drawings and specifications submitted with a Building Permit Application for a Building Permit shall bear the seal and signature of a NYS Registered Design Professional per the requirements of NYS law. Building Permit Applications submitted without the seal and signature of a registered NYS Design Professional will be returned as incomplete.
- 7. If a Certificate of Occupancy is required, the structure shall not be occupied until said certificate has been issued.
- 8. Work undertaken pursuant to this permit is conditioned upon and subject to any State and Federal regulations relating to Asbestos Material and any other Hazardous Material.
- 9. This permit does not include any privilege of encroachment in, over, under, or upon any city street or right-of-way.
- 10. The building permit card must be displayed so as to be visible from the street nearest to the site of the work being conducted.

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I, _____, the above named applicant, hereby attest that I am the contractor for the above referenced project and affirm under the penalty of perjury that all statements made by me on this application are true.

(Contractor Signature)

Date:

Please Return Completed Application to:

**Erie County
Department of Public Works
95 Franklin Street, Room 1400
Buffalo, NY 14202**

DO NOT WRITE BELOW THIS LINE – OFFICIAL USE ONLY

☐ Application Approved

Date:

Permit Number:

☐ Permit issued by:

Date:

CERTIFICATE OF OCCUPANCY OR COMPLIANCE MUST BE OBTAINED BEFORE OCCUPANCY USE.

☐ Certificate of Occupancy or Use by:

Date:

☐ Application Denied by:

Date:

NOTE: AN INCOMPLETE APPLICATION MAY DELAY THE TIMELY ISSUANCE OF YOUR PERMIT; PLEASE ENTER N/A IF A SECTION IS NOT APPLICABLE

INSTRUCTIONS FOR COUNTY OF ERIE STANDARD INSURANCE CERTIFICATE

- I Insurance shall be procured and certificates delivered before commencement of work or delivery of merchandise or equipment.
- II CERTIFICATES OF INSURANCE
 - A Shall be made to the "County of Erie, 95 Franklin St, Buffalo NY, 14202"
 - B Coverage must comply with all specifications of the contract.
 - C Must be executed by an insurance company, agency or broker, which is licensed by the Insurance Department of the State of New York. If executed by a broker, notarized copy of authorization to bind or certify coverage must be attached.
- III Forward the completed certificate to: County of Erie, (Department or Division) responsible for entering into the agreement for construction, purchase, lease or service.
- IV Minimum coverage with limits are as follows:

Vendor Classification	A Construction and Maintenance	B Purchase or Lease of Merchandise or Equipment	C Professional Services	D Property Leased To Others Or Use Of Facilities Or Grounds	E Concessionaires Services	F Livery Services	G All Purposes Public Entity Contracts
Commercial Gen. Liab.	\$1,000,000 per occ.	\$1,000,000 CSL	\$1,000,000 CSL	\$1,000,000	\$1,000,000 CSL	\$1,000,000	\$1,000,000 CSL
General Aggregate	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000
Products Completed Operations Liability	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000
Blanket Broad Form Contractual Liability	INCLUDE						
Contractual Liability		INCLUDE	INCLUDE	INCLUDE	INCLUDE	INCLUDE	INCLUDE
Broad Form P.D.	INCLUDE						
X.C.U. (explosion, collapse, Underground)	INCLUDE						
Liquor Law				INCLUDE	INCLUDE		
Auto Liab.	\$1,000,000 CSL		\$1,000,000 CSL	\$1,000,000 CSL	\$1,000,000 CSL	\$1,000,000 CSL	\$1,000,000 CSL
Owned	INCLUDE		INCLUDE	INCLUDE	INCLUDE	INCLUDE	INCLUDE
Hired	INCLUDE		INCLUDE	INCLUDE	INCLUDE	INCLUDE	INCLUDE
Non-Owned	INCLUDE		INCLUDE	INCLUDE	INCLUDE	INCLUDE	INCLUDE
Excess/Umbrella Liab.	\$5,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$5,000,000	\$1,000,000
Worker's Compensation & Employer's Liability	STATUTORY	STATUTORY	STATUTORY	STATUTORY	STATUTORY	STATUTORY	STATUTORY
Disability Benefits	STATUTORY	STATUTORY	STATUTORY	STATUTORY	STATUTORY	STATUTORY	STATUTORY
Professional Liability			\$5,000,000				
Erie County, To Be Named Add'l Insd.	Gen. Liab., Auto Liab., & Excess	Broad Form Vendors May Be Required	Gen. Liab., Auto Liab., & Excess	Gen. Liab., Auto Liab., & Excess	Gen. Liab., Auto Liab., & Excess	Gen. Liab., Auto Liab., & Excess	Gen. Liab., Auto Liab., & Excess

- V. Construction contracts require excess Umbrella Liability limits of \$5,000,000.
- VI Coverage must be provided on a primary-non contributory bases.
- VII. Designated Construction Project General Aggregate Limit Per Project Endorsement CG 25 03 is required.
In the event the concessionaire is required to have a N.Y.S. license to dispense alcoholic beverages an endorsement for liquor liability is required.
- IX. Waiver of Subrogation: Required on all lines unless noted
- X Transportation of people in buses, vans or station wagons requires \$5,000,000 excess liability.
- XI. Workers Compensation: State Workers' Compensation / Disability Benefits Law
Use Applicable Certificates Below:

Workers Compensation Forms	
CE-200	Exemption
C105.2	Commercial Insurer
SI-12	Self Insurer
GSI-105.2	Group Self Insured
U-26.3	New York State Insurance Fund

DBL (Disability Benefits Law) Forms

CE-200	Exemption
DB-120.1	Insurers
DB-155	Self Insured

- XII. The "ACORD" form certificate may be used in place of the County of Erie Standard Insurance Certificate, provided that all of the above referenced requirements are incorporated into the "ACORD" form certificate

Edition Date: 3/29/2012

Page 1 of 1

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County of Erie Standard Insurance Certificate

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER 	CONTACT NAME _____ PHONE (A/C No., Ext) _____ FAX (A/C No.) _____ EMAIL _____ ADDRESS _____ PRODUCER CUSTOMER ID #: _____														
INSURED 	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">INSURER(S) AFFORDING COVERAGE</th> <th style="text-align: left;">NAIC #</th> </tr> <tr><td>INSURER A:</td><td></td></tr> <tr><td>INSURER B:</td><td></td></tr> <tr><td>INSURER C:</td><td></td></tr> <tr><td>INSURER D:</td><td></td></tr> <tr><td>INSURER E:</td><td></td></tr> <tr><td>INSURER F:</td><td></td></tr> </table>	INSURER(S) AFFORDING COVERAGE	NAIC #	INSURER A:		INSURER B:		INSURER C:		INSURER D:		INSURER E:		INSURER F:	
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COVERAGES
CERTIFICATE NUMBER:
REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	GENERAL LIABILITY ☐ COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☐ OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: ☐ POLICY ☐ PROJECT ☐ LOC					EACH OCCURRENCE \$ _____ DAMAGE TO RENTED PREMISES (Ea occurrence) \$ _____ MED EXP (Any one person) \$ _____ PERSONAL & ADV INJURY \$ _____ GENERAL AGGREGATE \$ _____ PRODUCTS COMPI/OP AGG \$ _____ \$ _____
	AUTOMOBILE LIABILITY ☐ ANY AUTO ☐ ALL OWNED AUTOS ☐ SCHEDULED AUTOS ☐ HIRED AUTOS ☐ NON-OWNED AUTOS					COMBINED SINGLE LIMIT (Ea accident) \$ _____ BODILY INJURY (Per person) \$ _____ BODILY INJURY (Per accident) \$ _____ PROPERTY DAMAGE (Per accident) \$ _____ \$ _____ \$ _____
	☐ UMBRELLA LIAB ☐ OCCUR ☐ EXCESS LIAB ☐ CLAIMS-MADE ☐ DEDUCTIBLE ☐ RETENTION \$ _____					EACH OCCURRENCE \$ _____ AGGREGATE \$ _____ \$ _____ \$ _____
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICE/MEMBER EXCLUDED? (Mandatory in NH) ☐ Y/N If yes describe under DESCRIPTION OF OPERATIONS below	N/A				☐ WC STATU TORY LIMITS: ☐ OTH ER- \$ _____ E.L. EACH ACCIDENT \$ _____ E.L. DISEASE - EA EMPLOYEE \$ _____ E.L.DISEASE - POLICY LIMIT \$ _____

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

CERTIFICATE HOLDER
CANCELLATION

County of Erie 95 Franklin St Buffalo NY, 14202	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE _____

X. FOR COUNTY USE ONLY:

Name of County Dept. Requesting Certificate

Purchase Order or Contact Number

Vendor Insurance Classification

DPW OFFICE OF THE COMMISSIONER

(Rev 3/11)

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Owned	INCLUDE		INCLUDE	INCLUDE	INCLUDE	INCLUDE	INCLUDE
Hired	INCLUDE		INCLUDE	INCLUDE	INCLUDE	INCLUDE	INCLUDE
Non-Owned	INCLUDE		INCLUDE	INCLUDE	INCLUDE	INCLUDE	INCLUDE
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County of Erie Standard Insurance Certificate



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PRODUCER	CONTACT NAME	
	PHONE (A/C No. Ext)	FAX A/C No.
	EMAIL ADDRESS	
	PRODUCER CUSTOMER ID #	
	INSURER(S) AFFORDING COVERAGE	
	NAIC #	
INSURED	INSURER A:	
	INSURER B:	
	INSURER C:	
	INSURER D:	
	INSURER E:	
	INSURER F:	

COVERAGES

CERTIFICATE NUMBER:

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	GENERAL LIABILITY ☐ COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☐ OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: ☐ POLICY ☐ PRO-JECT ☐ LOC					EACH OCCURRENCE \$ DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ PRODUCTS COMP/OP AGG \$ \$
	AUTOMOBILE LIABILITY ☐ ANY AUTO ☐ ALL OWNED AUTOS ☐ SCHEDULED AUTOS ☐ HIRED AUTOS ☐ NON-OWNED AUTOS					COMBINED SINGLE LIMIT (Ea accident) \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$ \$
	UMBRELLA LIAB ☐ OCCUR EXCESS LIAB ☐ CLAIMS-MADE DEDUCTIBLE RETENTION \$					EACH OCCURRENCE \$ AGGREGATE \$ \$ \$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICE/MEMBER EXCLUDED? (Mandatory in NH) ☐ Y/N ☐ N/A If yes describe under DESCRIPTION OF OPERATIONS below					WC STATU TORY LIMITS: ☐ OTH ER- \$ E.L. EACH ACCIDENT \$ E.L. DISEASE - EA EMPLOYEE \$ E.L. DISEASE - POLICY LIMIT \$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

CERTIFICATE HOLDER

CANCELLATION

County of Erie 95 Franklin St Buffalo NY, 14202	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE

X. FOR COUNTY USE ONLY:

Name of County Dept. Requesting Certificate

Department of Public Works

Purchase Order or Contact Number

Vendor Insurance Classification

A-Construction and Maintenance

APPENDIX "C"

**COUNTY OF ERIE – EXECUTIVE ORDER NO.13 – PAY EQUITY CERTIFICATION ON
COUNTY CONTRACTS**

Pay Equity Certification on County Contracts

During the term of this Contract, the Awardee shall comply with Executive Order 13 (2014), and the Awardee shall make such records available, upon request, to the County's Division of Equal Employment Opportunity for review. The County shall have the right, upon reasonable notice and at reasonable times, to inspect the books and records of the Awardee, its offices and facilities, for the purpose of verifying information supplied in the Erie County Equal Pay Certification and for any other purpose reasonably related to confirming the Awardee's compliance with Erie County Executive Order No. 13 (2014). Violation of the provisions of Executive Order 13 (2014), which is attached hereto and made a part hereof, can constitute grounds for the immediate termination of this contract and may constitute grounds for determining that a bidder is not qualified to participate in future county contracts.

Executive Order #013

Pay Equity Certification on County Contracts

WHEREAS, federal law, including the Equal Pay Act of 1963, Title VII of the Civil Rights Act of 1964 and Federal Executive Order 11246 of September 24, 1965 (Equal Employment Opportunity) (together "Federal Equal Pay Law"), requires that men and women in the same workplace be given equal pay for equal work; and

WHEREAS, Section 194 of New York State Labor Law ("NYS Equal Pay Law") prohibits compensating men and women differently for the same work; and

WHEREAS, on average, a full-time working woman in New York State earns just 85 cents for every dollar that a man earns and the pay gap is even greater for African-American and Latina women; and

WHEREAS, females make up nearly fifty-two percent of Erie County's population; and

WHEREAS, women make up nearly half of the U.S. labor force and are a growing number of breadwinners in their families; and

WHEREAS, this pay differential shortchanges women and their families by thousands of dollars a year, and potentially hundreds of thousands of dollars over a lifetime, presenting a lifelong threat to those families' economic security and reducing their earnings through Social Security and other post retirement plans; and

WHEREAS, poverty is recognized as a leading cause of or contributing factor to many social problems, including but not limited to substance abuse, domestic violence, child abuse, improper nutrition, obesity, improper health care and criminal conduct; and

WHEREAS, the impact of pay differentials is exacerbated as workers age, causing underpaid workers to disproportionately rely upon various forms of public support in their retirement years; and

WHEREAS, pay inequity can significantly impact the County, necessitating the provision of various public subsidies for low income residents and leading to the lack of receipt of income by women residents which would be spent in our local economy; and

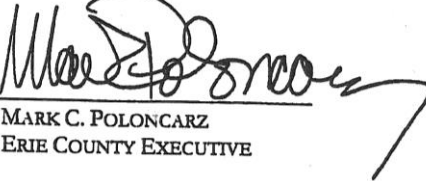
WHEREAS, through the enforcement of current state and federal laws that ban unequal pay for equal work, Erie County can help ameliorate the many negative consequences of pay inequality, thereby improving the lives of those who might otherwise be underpaid, strengthening families and protecting children, and

reducing the demand for public services, all positively impacting county, state and federal budgets.

NOW, THEREFORE, I MARK C. POLONCARZ, Erie County Executive, by virtue of the authority vested in me by the Erie County Charter § 302, do hereby order as follows:

1. It is ordered that on and after January 1, 2015, all Erie County offices, departments and administrative units, including but not limited to the Division of Purchase, fully implement a requirement in all bids, requests for proposals and other contract solicitations that the contractor submit an Erie County Equal Pay Certification which certifies the contractor's compliance with Federal Equal Pay Law and New York State Equal Pay Law (together, the "Equal Pay Laws"). Such certification shall be required prior to execution of the contract; and it is,
2. Further ordered that such certification shall include a representation by the contractor that it has not been the subject of an adverse finding under the Equal Pay Laws within the previous five years and shall include disclosure of any currently pending claims against the contractor; and it is,
3. Further ordered that violation of any provision of the Equal Pay Laws during the effective period of such a contract or the filing of a false or misleading Erie County Equal Pay Certificate may constitute grounds for immediate termination of such a contract; and it is,
4. Further ordered that violation of any provision of the Equal Pay Laws during the effective period of such a contract or the filing of a false or misleading Erie County Equal Pay Certificate may constitute grounds for determining a bidder or responder is not qualified to participate in future County contracts; and it is,
5. Further ordered that the Law Department prepare an Erie County Equal Pay Certification for use by Erie County offices, departments and administrative units and assure compliance with this Executive Order in the contract approval process; and it is,
6. Further ordered that the County Division of Equal Employment Opportunity ("EEO") establish a procedure for compliance monitoring and periodic auditing of certification records; and it is,

GIVEN, under my hand and the Privy Seal of the County of Erie in the City of Buffalo this 28th day of October, in the year two thousand fourteen.

COUNTY OF ERIE
By: 
MARK C. POLONCARZ
ERIE COUNTY EXECUTIVE

APPENDIX “D”

COUNTY OF ERIE – EXECUTIVE ORDER NO. 18 – FIRST SOURCE HIRING POLICY
FOR COUNTY CONSTRUCTION PROJECTS

Exhibit 1 - Executive Order # 18 Policy

Exhibit 2 - Executive Order # 18 Rules and Regulations

Exhibit 3 – Executive Order # 18 Monitoring and Reporting Requirements

Exhibit 4 – List of First Source Zip Codes



Executive Order #018
Erie County Construction Project Bid Documents Shall Include
Local and Disadvantaged Worker Requirements

Whereas, Erie County annually appropriates over \$25,000,000 in tax dollars for expenditures related to public works construction projects;

Whereas, Erie County awards contracts to private firms to provide the construction services associated with budgeted projects;

Whereas, while unemployment in Erie County as a whole is comparable to other metropolitan regions in the United States, the unemployment rate within certain zip codes located in Erie County is as high as 21.7% and the poverty rate as high as 44.7%;

Whereas, there are 182,200 working age individuals in the region who are either unemployed or underemployed and seeking work;

Whereas, low-income or otherwise disadvantaged individuals residing in Erie County experience higher rates of unemployment compared to other individuals;

Whereas, the purpose of this order is to foster construction employment opportunities for qualified local residents, underemployed individuals or otherwise disadvantaged workers on those construction projects located within the geographic boundaries of Erie County which are bid by the County of Erie ("Erie County construction project(s)").

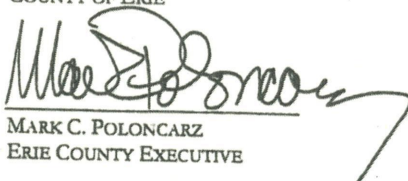
Now, Therefore, I, Mark C. Poloncarz, Erie County Executive, by virtue of the authority vested in me by Erie County's Charter Sections 301 and 302, do hereby order as follows:

1. It is ordered that on and after April 30, 2018, all bids for Erie County construction projects initiating out of the Erie County Department of Environment and Planning Division of Sewerage Management and on and after October 1, 2017, all other bids for Erie County construction projects wherever so initiated, and all associated contracts involving an expenditure of \$250,000 or greater which utilize not less than three workers to complete the project shall require that:
 - a) Entirely 100% of work hours performed by residents of New York State on an Erie County construction project will be worked by residents of the Local Labor Area (Erie County, Niagara County, Chautauqua County, Cattaraugus County, Allegany County, Wyoming County, Genesee County, Orleans County).
 - b) At least 70% of total work hours performed by residents of New York State on an Erie County construction project will be worked by residents of the County of Erie.
 - c) For the remainder of the calendar year subsequent to the effective date of this Order as specified above in Section 1, and for the entirety of the calendar year that follows, at least 20% of total work hours performed by residents of New York State, which percentage may be wholly or partly included within the hourly requirement contained in sub-section (b) above, used on an Erie County construction project will be worked by residents of Erie County who reside in zip codes with a poverty rate of 20% or higher, and/or, in any ratio, disadvantaged workers who

reside in Erie County. A disadvantaged worker is a resident who has a household income below 50% of the Area Median Income ("AMI"); or has been released from prison within the last 10 years; or participates in the Temporary Assistance for Needy Families program; or participates in the Supplemental Nutrition Assistance Program; or has been unemployed for at least 12 consecutive months.

- d) On the first day of the second full calendar year from such effective date and continuing thereafter, the applicable percentage of total work hours performed referenced in this subsection above will move upward from 20% to 30%. The applicable zip codes as referenced above will be determined annually by the Erie County Division of Equal Employment Opportunity and will be provided to potential contractors in all request for bids documents; and
2. It is further ordered that work hours performed by individuals residing outside of New York State will not be included in the requirements set forth above; and
3. It is further ordered that where an Erie County construction project is funded in whole or in part with Federal Highway Administration monies, those projects are exempt from the requirements specified above to avoid conflict with federal law or regulation; and
4. It is further ordered that failure to adhere to the requirements herein, as further delineated in all formal construction contracts and any rules and regulations promulgated pursuant to Section 5 below, will constitute grounds for immediate termination of the underlying contract and will further result in the Contractor being deemed a non-responsible bidder for a period of twelve months. Once grounds for immediate termination are established, actual contract termination will be at the discretion of Erie County; and
5. It is further ordered that the Erie County Department of Law must promulgate, and update annually where necessary, separate formal rules and regulations with respect to implementation of the requirements contained herein as applied respectively and distinctly to Erie County construction projects initiating out of the Erie County Department of Environment and Planning Division of Sewerage Management and to Erie County construction projects wherever else so initiated. The Erie County Department of Law must also assure compliance with this Executive Order within the contract approval process; and
6. It is further ordered that the Erie County Division of Equal Employment Opportunity establish a procedure for compliance monitoring and periodic auditing of construction contractor hiring rates.

Given, under my hand and the Privy Seal of the County of Erie in the City of Buffalo this twenty seventh day of September, in the year two thousand seventeen.

COUNTY OF ERIE
BY: 
MARK C. POLONCARZ
ERIE COUNTY EXECUTIVE

RULES AND REGULATIONS IMPLEMENTING ERIE COUNTY EXECUTIVE MARK C. POLONCARZ ORDER #18

PURPOSE

The Erie County Attorney's Office promulgates these Rules and Regulations pursuant to Section 5 of Erie County Executive Mark C. Poloncarz Order #18 dated September 27, 2017 ("EO #18"). These Rules and Regulations are intended to articulate guidelines for implementing the provisions of EO #18 as they relate to those Erie County construction projects.

DEFINITIONS

1. **ERIE COUNTY CONSTRUCTION PROJECT** shall mean construction projects bid by Erie County and located within the geographic boundaries of Erie County which involve an expenditure of \$250,000 or more and which utilize not less than three construction workers to complete the project.
2. **CONSTRUCTION SUBCONTRACT** shall mean any subcontract entered into by a contractor working on an Erie County Construction Project which, by its terms, engages such subcontractor to provide work hours on an Erie County Construction Project.
3. **CONTRACTOR OR SUBCONTRACTOR** shall mean a contractor or subcontractor that directly employs construction workers who provide work hours on an Erie County Construction Project.
4. **CONSTRUCTION WORKER** shall mean a laborer, workman or mechanic who resides in the local labor area (Erie County, Niagara County, Chautauqua County, Cattaraugus County, Allegany County, Wyoming County, Genesee County, Orleans County) and is directly involved in the construction, reconstruction, improvement, rehabilitation, installation, alteration, renovation, demolition or otherwise providing for any building, facility, roads, highways, bridges, or physical structure of any kind, but does not include professional services employees.

APPLICATION

All Erie County Construction Projects ("Project" or "Projects") as defined above are subject to the provisions of EO #18. The Commissioner or his/her Designee or the Division Head or his/her Designee of the Erie County Department or Division who solicits a bid for an Erie County Construction project ("the Commissioner") must, with the aid of the County Attorney when necessary, determine on a case by case basis the applicability of EO #18 to a given project. In order for a project to be subject to EO #18, the Commissioner must make the following findings:

1. **Location:** The Commissioner must find that work on a project will take place solely within the geographic boundaries of Erie County.

2. **Monetary Threshold:** The Commissioner must find that the cost of a project meets or exceeds \$250,000. In determining whether a project meets the expenditure threshold of \$250,000, the Commissioner shall calculate the total cost of the project based on the successful bidder's final bid submission. A project previously exempt because it did not meet the monetary threshold of \$250,000 may become subject to EO #18 because an amendment, modification, renewal, or extension increases the total cost of the project. In that case, the Commissioner will have the authority to unilaterally amend the project contract(s) to include the standard EO #18 contract language and certification specifically delineated below.
3. **Work Force Threshold:** The Commissioner must find that no less than three construction workers will be utilized by contractor and/or subcontractor for the completion of the project. In determining whether a project utilizes at least three construction workers to complete the Project, the Commissioner shall rely on the statement of work force contained within the attestation required by the mandatory request for bid language specifically delineated below. A project previously exempt because it did not meet the work force threshold may become subject to EO #18 because of an increase in work force during the course of work on the project. In that case, the Commissioner shall have the authority to unilaterally amend the project contract(s) to include the standard EO #18 contract language and certification specifically delineated below.

REQUEST FOR BID LANGUAGE

The Commissioner shall include the following language in all construction project Requests for Bids.

ERIE COUNTY EXECUTIVE ORDER #18: The project contemplated by this Request for Bids may be subject to Erie County Executive Order #18 which is attached hereto along with its Rules and Regulations for reference as Exhibit _____. The Erie County Department or Division letting the contract will advise the successful bidder if it must comply with Executive Order #18 at the time of award. All bids must include a verified attestation of intent to comply and statement of work force. Such attestation and statement is attached hereto as Exhibit _____. Any bids received which do not include such attestation or include an incomplete attestation will be deemed non-compliant and will not be considered for award. Be advised that the Contractor will be required to provide monthly reports demonstrating good faith efforts to meet the work force requirements using LCPtracker software.

CONTRACT LANGUAGE

The Commissioner shall include the following language in all award contracts for construction projects determined to be subject to EO #18.

ERIE COUNTY EXECUTIVE ORDER #18: The Commissioner or Division Director of the Erie County Department or Division letting the contract has determined that the project

contemplated herein is subject to the provisions of Erie County Executive Order #18 which is attached hereto for reference as Exhibit _____. Prior to the final execution of this Agreement, Contractor shall furnish to the County a fully executed and verified Local and Disadvantaged Worker Compliance Certification. A fillable Certification is attached hereto as Exhibit _____. Contractor will be required to provide monthly reports demonstrating good faith efforts to meet the work force requirements using LCPtracker software. Contractor shall make such records as deemed necessary available upon request to the Erie County Division of Equal Employment Opportunity for review. The County shall have the right, upon reasonable notice and at reasonable times, to inspect the books and records of the Contractor, for the purpose of verifying information supplied in the Local and Disadvantaged Worker Compliance Certification and for any other purpose reasonably related to confirming Contractor compliance with Erie County Executive Order #18. Notwithstanding any other termination provisions contained herein, violations of the provisions of Executive Order #18 will constitute grounds for immediate termination of the underlying contract and shall further result in the Contractor being deemed a non-responsible bidder for a period of twelve months. Once grounds for immediate termination are established, actual contract termination will be at the discretion of Erie County.

WAIVER PROCESS

When a Commissioner determines that a project is subject to the provisions of EO #18, he/she shall notify the successful bidder of such determination at the time of award. The successful bidder shall then have the opportunity to submit a partial waiver request to the Erie County Division of Equal Employment Opportunity for consideration. Waiver requests shall be made in writing and directed to the Erie County Division of Equal Employment Opportunity at 95 Franklin Street, Room 625, Buffalo, NY 14202 "Attention Director". In order to prevent undue project delays, any such request shall be made as soon as the successful bidder is aware that it cannot meet the full requirements of EO #18. Should a partial waiver be requested such request shall state which EO #18 requirement(s) cannot be met and shall further indicate how the successful bidder intends to partially comply. All waiver requests shall contain a narrative of the efforts employed by the successful bidder in attempting to comply with EO #18 by recruiting construction workers to work on the subject project and the reasons why such efforts were only partially successful. At a minimum, these efforts must include and the narrative must state the following:

- 1) Where a successful bidder has, through collective bargaining agreements or other legally binding agreements, any exclusive hiring arrangements with local unions such successful bidder must attempt to meet the mandates of EO #18 by following the hiring process outlined in their respective exclusivity agreements. The narrative provided in connection with any waiver request will describe the process followed and the results of those efforts. Where a successful bidder has no exclusive hiring agreements in place or where a successful bidder is unable to comply with EO #18 after following their exclusive hire process, such successful bidder must proceed to follow steps 2 through 4 below.
- 2) Posting the job opening(s) for construction worker(s) on or with each of the following:

- A) The New York State Department of Labor Database used by the Buffalo and Erie County Workforce System (www.jobzone.ny.gov)
 - B) The People United for Sustainable Housing located at 271 Grant Street, Buffalo, NY 14213
 - C) At least one private staffing firm to aid Contractor in locating qualified candidates
 - D) Any other staffing organization or web site if so directed by the Erie County Commissioner of Public Works
- 3) All job opening(s) posted pursuant to Section one above must be posted for a period of at least ten (10) consecutive calendar days. Proof of publication must be included in all waiver requests.
 - 4) The narrative provided with a waiver request shall state the number of candidates found via the job postings that would aid Contractor in meeting the requirements of EO #18, the number of those candidates that were subsequently interviewed for the opening(s), and if such candidates were not hired, the narrative shall include the reason(s) why the candidates were found to be unsuitable for the position(s).
 - 5) A copy of the waiver request shall be sent to the Project Manager/Point of Contact in the Erie County Department of Public Works located at 95 Franklin Street, 14th Floor, Buffalo, NY 14202

If the Erie County Division of Equal Employment Opportunity determines that a successful bidder has demonstrated a good faith effort to comply in whole with the provisions of EO #18, and yet for reasons delineated in its request still cannot do so, a partial waiver shall be granted to the successful bidder.

SPECIALIZED WORK EXEMPTION

Certain Erie County Construction Projects require the use of workers who possess specialized skills, training, or formal certification/licensing in order to complete the contemplated work. When a Commissioner or Director of an Erie County Department or Division believes that there are an insufficient number of construction workers that meet EO#18 requirements and possess the unique qualifications necessary to complete such specialized work, he/she may request a specialized work exemption from the Erie County Division of Equal Employment Opportunity. Where granted, a specialized work exemption removes the mandates of EO #18 in whole or in part for a given project.

A request for a specialized work exemption shall be made in writing by the commissioner or director bidding the subject project. The request shall be directed to the Erie County Division of Equal Employment Opportunity at 95 Franklin Street, Room 625, Buffalo, NY 14202 "Attention Director" and must include a narrative describing what the specialized work involves, what portion of the project such specialized work is needed for, the particular skills, training, or formal

certification/licensing needed to perform the work, and the steps taken to determine if workers meeting EO #18 requirements have the necessary expertise. Upon receipt of a specialized work exemption request, the Equal Employment Opportunity Director shall form an ad hoc committee, and select its members, in order to review the request and either grant or deny the specialized work exemption.

The specialized work exemption committee shall consist of four members to include the commissioner or director of the department or division bidding the project, the involved project manager, and one respective representative from the Erie County Department of Law and the Erie County Division of Equal Employment Opportunity. The committee shall convene as soon as practicable to consider the specialized work exemption request. In making a determination, the committee shall consider all information presented to it and shall solicit further information from any source available in order to aid in its deliberations. A determination as to whether or not to grant the specialized work exemption shall be made within a reasonable time so as not to frustrate the bidding process for the contemplated project. The committee's determination shall be memorialized in writing and shall include its specific findings and the information upon which such findings were made.

Where the committee finds that a specialized work exemption is warranted, a notice to bidders shall be included in the project bid specifications which shall clearly indicate what portion of the project is exempt from the provisions of EO #18 and shall further indicate that the remaining work, if any, may still be subject to EO #18. Where there is work remaining outside of the granted exemption, the attestation of work force must be completed to include that portion of work which falls outside of the exemption.

COMPLIANCE

The Director of the Erie County Division of Equal Employment Opportunity shall ensure that all contractors and subcontractors working on a Project as defined herein are in compliance with EO #18 or are in compliance with the provisions of any duly granted partial waiver or have been granted a full waiver.

PENALTY FOR NONCOMPLIANCE

Any failure to adhere to Erie County Executive Order #18 or the Rules and Regulations contained herein shall cause Contractor to be deemed noncompliant. Such noncompliance shall constitute grounds for immediate termination of the underlying contract and shall further result in the Contractor being deemed a non-responsible bidder for a period of twelve months. Once grounds for immediate termination are established, actual contract termination will be at the discretion of Erie County.

County of Erie Executive Order No. 18
Monitoring and Reports

All EMPLOYER/EMPLOYEE information reviewed or gathered, including Social Security Numbers, as a result of ERIE COUNTY'S Division of Equal Employment Opportunity (DEEO) monitoring and enforcement activities will be held confidential in accordance with all County, State and Federal confidentiality and privacy laws and used only for the purposes that it was reviewed or gathered.

- A. The Division of Equal Employment Opportunity (DEEO) shall monitor all Projects as authorized by Executive Order No. 18. The DEEO will require the following:
1. CONTRACTOR and Subcontractor whose projects are subject to ERIE COUNTY Executive Order No. 18 are to utilize their Certified Payroll Records when reporting their workforce compliance. That of the total work hours performed by residents of New York State on an Erie County construction project 100% are worked by residents of the Local Labor Area and 70% are worked by residents of the County of Erie.
 2. Monthly LCPtracker Reports to determine if the CONTRACTOR and/or Subcontractor's workforce is in compliance with the submitted Agreement and that Monthly Compliance Reports identify residents of Erie County who reside in zip codes with a poverty rate of 30% or higher, and/or, in any ratio, disadvantaged workers who reside in Erie County. (***A disadvantaged worker is (1). a resident who has a household income below 50% of the Area Median Income (AMI); or (2) has been released from prison within the last 10 years, or (3) participates in the Temporary Assistance for Needy Families Program; or (4) participates in the Supplemental Nutrition Assistance Program; or (5) has been unemployed for at least 12 consecutive months.***)
 3. Receive LCPtracker Reports; inspect certified payroll, personnel records and any other records or information necessary to ensure the required workforce utilization is in compliance with the EC Executive Order No. 18.
 4. Conduct desk reviews of Monthly Compliance Reports.
 5. Monitor and complete statistical reports that identify the overall project, contractor, and subcontractors' hiring or hours worked percentages in accordance with meeting Executive Order No. 18 stated requirements.
 6. Provide formal notification of non-compliance with the required workforce percentages or any alleged breach of Executive Order No. 18 to all contracting agencies, and stakeholders.

B. PENALTIES

Willful breach of the Executive Order No. 18 by the CONTRACTOR, failure to submit the Contract Compliance Reports via LCPtracker, deliberate submission of falsified data, or failure to reach specific hiring or hours worked requirements may result in:

1. Erie County immediate termination of the underlying contract.
2. The CONTRACTOR being deemed a non-responsible bidder for a period of twelve months.

**ERIE COUNTY DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

EO #18 - EXHIBIT # 4

First Source Policy Targeted Zip Codes – Erie County Zip Codes with 20% Poverty Rate or Higher:

Zip Code	Area
14201	Buffalo – Peace Bridge to Chippewa
14203	Buffalo – Downtown and the Outer Harbor
14204	Buffalo – Fruit Belt to the Old First Ward
14206	Cheektowaga
14207	Buffalo
14208	Buffalo
14209	Buffalo
14210	Buffalo
14211	Buffalo, Cheektowaga and Sloan – Kensington and Bailey
14212	Buffalo and Cheektowaga – Central Terminal and Broadway
14213	Buffalo – Peace Bridge to Buffalo State
14214	Buffalo – Delaware Park to UB (East Side)
14215	Buffalo and Cheektowaga – Intersection of Bailey Ave. and Route 33
14218	City of Lackawanna
14061	Farnham
14169	Wales Center

**COUNTY OF ERIE DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

SUPPLEMENTARY GENERAL CONDITIONS

The following supplements modify the “GENERAL CONDITIONS OF THE CONTRACT”. Where a portion of the General Conditions is modified or deleted by these Supplementary General Conditions, the unaltered portions of the General Conditions shall remain in effect.

**Item -1: SECTION 3 – RELATIONS AMONG OWNERS, CONTRACTOR AND ARCHITECT/
ENGINEER**

**3.14 Delete and replace with the following: “3.14 OWNER’S RIGHT TO TERMINATE
CONTRACT AND COMPLETE THE WORK**

A. The County, upon ten (10) days notice to the Contractor, may terminate this Agreement in whole or in part when the County deems it to be in its best interest. In such event, the Contractor shall be compensated and the County shall be liable only for payment for services already rendered under this Agreement prior to the effective date of termination at the values established under the approved Schedule of Values. Upon receipt of notice that the County is terminating this Agreement in its best interests, the Contractor shall stop work immediately and incur no further costs in furtherance of this Agreement without the express approval of the Commissioner of Public Works, and the Contractor shall direct any approved sub contractor to do the same.

In the event of a dispute as to the value of the Work rendered by the Contractor prior to the date of termination, it is understood and agreed that the Commissioner shall determine the value of such work rendered by the contractor. The Contractor shall accept such reasonable and good faith determination as final.

B. In the event the County determines that there has been a material breach by the Contractor of any of the terms of the Agreement and such breach remains uncured for forty-eight (48) hours after service on the Contractor of written notice thereof, the County, in addition to any other right or remedy it might have, may terminate this Agreement and the County shall have the right, power and authority to complete the Work provided for in this Agreement, or contract for its completion, and any additional expense or cost of such completion shall be charged to and paid by the Contractor. Without limiting the foregoing, upon written notice to the Contractor, repeated breaches by the Contractor of duties or obligations under this Agreement shall be deemed a material breach of this Agreement justifying termination for cause hereunder without requirement for further opportunity to cure.”

**COUNTY OF ERIE
DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

DPW PROJECT # **YEAR-LOCATION-#**
VENDOR #

AGREEMENT

This Agreement made as of the ____ day of _____, 2020 by and between the County of Erie, a municipal corporation of the State of New York, having its principal place of business at The Edward A. Rath, County Office Building, 95 Franklin Street, Buffalo New York 14202, hereinafter called "County" and **AWARDEE (VENDOR)** having its principal office at **VENDOR ADDRESS, CITY, STATE, ZIP** hereinafter called the "Contractor".

All notices or other communications including service under this contract shall be deemed to have been properly given when sent, first class, postage prepaid, return receipt requested to the addresses set forth below:

For the County:

Erie County Department of Public Works
95 Franklin Street, Suite 1400
Buffalo, New York 14202

For the Contractor:

VENDOR NAME
VENDOR ADDRESS
CITY, STATE ZIP

WITNESSETH That whereas the County intends to do **DISCIPLINE** construction work in connection with the **PROJECT NAME**, located at **PROJECT ADDRESS** hereinafter called the "Project" in accordance with the Contract Documents prepared by **AE DESIGN FIRM**, having its principal offices at **AE ADDRESS**.

NOW, THEREFORE, The County and the Contractor for the consideration hereinafter set forth, agree as follows:

The Contractor agrees to furnish all necessary labor, materials, equipment, tools and services necessary to perform and complete in a workman - like manner all work required for the construction of the **PROJECT**, in strict compliance with the Contract Documents herein mentioned, which are hereby made a part of the Contract, including the following Addenda:

Addendum # 1 DATE

Addendum # 2 DATE

COMPLETION TIME: Work shall commence immediately upon receipt of written Notice to Proceed and shall progress pursuant to the provisions set forth in the agreement. The Contractor hereby agrees substantially complete with the work of this agreement **within 000 calendar days** from the date of issuance of the Notice to Proceed.

SUB-CONTRACTORS: The Contractor agrees to bind every sub-Contractor by the terms of the Contract Documents. The Contract Documents shall not be construed as creating any contractual relation between any sub-Contractor and the County.

**COUNTY OF ERIE
DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

AGREEMENT AMOUNT: The County agrees to pay and the Contractor agrees to accept, in full payment for the performance of this Agreement, the total amount of: **AMOUNT LONG WRITTEN Dollars (\$00.00)**. And be funded from **SAP Account(s) X.00000**.

- a. Progress Payments will be made in accordance with the General Conditions of the Contract.

CONTRACT DOCUMENTS: the Contract is comprised of the documents listed in paragraph 1.01 of the General Conditions of the Contract. In the event that any provision of one Contract Document, conflicts with the provision of another Contract Document, the provision in that Contract Document first listed below shall govern, except as otherwise specifically stated:

- a. Agreement (This Instrument)
- b. Addenda to Contract Documents
- c. Legal and Procedural documents other than Bonds
 - 1. Proposal which is attached hereto as "Appendix A".
 - 2. Information for Bidders
 - 3. Advertisements
 - 4. Form of Affidavit for Final Payment
 - 5. Form of Guarantee
- d. Detailed Specifications Requirements
- e. Drawings
- f. General Conditions of the Contract (Sections 1 through 9, inclusive)
- g. Supplementary General Conditions
- h. Bonds
 - 1. Performance, Labor and Material Payment Bond
 - 2. Proposal Guaranty

AUTHORITY AND RESPONSIBILITY OF THE ARCHITECT - ENGINEERS: All work shall be done under the general administration of the Architect - Engineer. The Architect - Engineer shall decide any and all questions which may arise as to quality and acceptability of materials furnished, work performed, rate of progress of the work, interpretation of drawings and specifications, and all questions as to the acceptable fulfillment of the contract on the part of the Contractor.

SUCCESSORS AND ASSIGNS: This agreement and all of the covenants hereof shall inure to the benefit of and be binding upon the County and the Contractor respectively and his partners, successors, assigns and legal representatives. Neither the County nor the Contractor shall have the right to assign, transfer or sublet his interests or obligations hereunder without written consent of the other party.

INDEMNIFICATION: To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the County of Erie, its agents, officers and employees, from any and all liability, damage, claims, demands, costs, judgments, fees, attorney's fees or loss arising out of, directly or indirectly, or relating in any way to the performance or failure to perform under this Agreement by the Contractor or third parties under the direction or control of the Contractor, including but not limited to personal injuries. The Contractor shall defend the County, at its sole expense, against any and all claims, demands or causes of action directly or indirectly arising out of this Agreement and to bear all other costs and expenses related thereto.

**COUNTY OF ERIE
DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

EXECUTIVE ORDER No. 13 (2014): The Contractor shall comply with Erie County Executive Order 13 (2014) and agrees to complete the Certificate collectively attached hereto **as Appendix “C”** and made a part hereof. The Contractor shall make such records available, upon request, to the County’s Division of Equal Employment Opportunity for review. The County shall have the right, upon reasonable notice and at reasonable times, to inspect the books and records of the Contractor, its offices and facilities, for the purpose of verifying information supplied in the Erie County Equal Pay Certification and for any other purpose reasonably related to confirming the Contractors’ compliance with Erie County Executive Order 13 (2014). Notwithstanding the termination provisions contained herein, violation of the provisions of Executive Order 13 (2014) , may constitute grounds for the immediate termination of this Agreement and may constitute grounds for determining that the Contractor is not qualified to participate in future County contracts.

EXECUTIVE ORDER No. 18 (2017): The Commissioner or Division Director of the Erie County Department or Division letting the contract has determined that the project contemplated herein is subject to the provisions of Erie County Executive Order #18. Prior to the final execution of this Agreement, Contractor shall furnish to the County a fully executed and verified *Local and Disadvantaged Worker Compliance Certification*. A fillable Certification is included in **Appendix “D”**. Contractor shall make such records as deemed necessary available upon request to the Erie County Division of Equal Employment Opportunity for review. The County shall have the right, upon reasonable notice and at reasonable times, to inspect the books and records of the Contractor, for the purpose of verifying information supplied in the Local and Disadvantaged Worker Compliance Certification and for any other purpose reasonably related to confirming Contractor compliance with Erie County Executive Order #18. Notwithstanding any other termination provisions contained herein, violations of the provisions of Executive Order #18 will constitute grounds for immediate termination of the underlying contract and shall further result in the Contractor being deemed a non-responsible bidder for a period of twelve months. Once grounds for immediate termination are established, actual contract termination will be at the discretion of Erie County.

EXECUTORY: This Contract is executory only to the extent of funds appropriated and made available to the County, therefore, and no liability shall be incurred by the County beyond such available funds.

a. The Contractor agrees not to submit a Request for Payment until the Contractor receives an executed copy of this Agreement from the County.

COUNTY’S RIGHT TO TERMINATE:

a. The County, upon ten (10) days’ notice to the Contractor, may terminate this Agreement in whole or in part when the County deems it to be in its best interest. In such event, the Contractor shall be compensated and the County shall be liable only for payment for services already rendered under this Agreement prior to the effective date of termination at the values established under the approved Schedule of Values. Upon receipt of notice that the County is terminating this Agreement in its best interests, the Contractor shall stop work immediately and incur no further costs in furtherance of this Agreement without the express approval of the Commissioner of Public Works, and the Contractor shall direct any approved sub-contractor to do the same. In the event of a dispute as to the value of the Work rendered by the Contractor prior to the date of termination, it is understood and agreed that the Commissioner shall determine the value of such Work rendered by the Contractor. The Contractor shall accept such reasonable and good faith determination as final.

**COUNTY OF ERIE
DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

b. In the event the County determines that there has been a material breach by the Contractor of any of the terms of the Agreement and such breach remains uncured for forty-eight (48) hours after service on the Contractor of written notice thereof, the County, in addition to any other right or remedy it might have, may terminate this Agreement and the County shall have the right, power and authority to complete the Work provided for in this Agreement, or contract for its completion, and any additional expense or cost of such completion shall be charged to and paid by the Contractor. Without limiting the foregoing, upon written notice to the Contractor, repeated breaches by the Contractor of duties or obligations under this Agreement shall be deemed a material breach of this Agreement justifying termination for cause hereunder without requirement for further opportunity to cure.

SPECIAL PROVISIONS: The County and the Contractor mutually agree that this Agreement shall be subject to the following Special Provision:

The Contractor agrees that he will hold all of the Alternate and/or Unit Prices appearing in the PROJECT PROPOSAL, "Appendix A", for the duration of the Agreement with Owner. All materials and workmanship shall be in strict accordance with specifications and drawings. The Owner, reserves the right to either accept or reject any or all of the Alternate and/or Unit Prices in the PROJECT PROPOSAL, "Appendix A". The total amount of the contract as heretofore states, shall be accordingly increased or decreased, as the case may be.

INSURANCE: During the term of this Agreement, the Contractor agrees to maintain insurance coverage consistent with the insurance requirements attached hereto and incorporated herein as **Schedule B**. Contractor agrees to name the "County of Erie" as an additional insured on all such insurance policies, and to provide to the County Attorney certificate(s) of insurance evidencing such insurance coverage prior to the commencement of any work on the Project. All insurance certificates shall be subject to approval by the office of the County Attorney.

CONFIDENTIALITY: The County agrees to assist the Contractor with the scope of work described in the Contractor's Contract by providing applicable drawing files that may include but not be limited to; drawings, specifications, approved submittals and any other reasonable information necessary to perform the Contractor's scope of work. Any and all information provided to the Contractor by The County or the Design Consultant, shall be defined as "Confidential Information".

Contractor hereby agrees to maintain any Confidential Information received or learned in preparation of the underlying scope of work, (a) in confidence to the same extent the Contractor maintains its own proprietary industrial information of similar kind and value (but at a minimum the Consultant shall use commercially reasonable efforts); (b) the Contractor agrees not to disclose such Confidential Information to any Third Party without prior consent of the County; and (c) not use such Confidential Information for any purpose except those permitted by this Agreement.

RESOLUTION: This Agreement is made and executed pursuant to resolutions of **the Erie County Legislature adopted on the 00 day of MONTH, YEAR being Communication Number 00E-00**, copy(ies) of which are annexed hereto.

**COUNTY OF ERIE
DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

This Agreement document, together with the Contract Documents listed on page A2 of the Agreement constitutes the sole and complete agreement and understanding between the Parties.

County of Erie

VENDOR NAME

Mark Poloncarz/Lisa Chimera
County Executive/Deputy County Executive
Dated: _____

Print Name:
Title:
Date:

95 Franklin Street
BUSINESS ADDRESS

VENDOR ADDRESS
BUSINESS ADDRESS

Buffalo NY 14202

CITY STATE ZIP

CITY STATE ZIP

CITY STATE ZIP

APPROVED AS TO CONTENT
Electronically Signed

APPROVED AS TO FORM
Electronically Signed

COMMISSIONER OF PUBLIC WORKS
COUNTY OF ERIE, STATE OF NEW YORK

Document No. _____
ASSISTANT ERIE COUNTY ATTORNEY
COUNTY OF ERIE, STATE OF NEW YORK

CORPORATE ACKNOWLEDGEMENT

State of New York)
County of)

On the ____ day of _____, 2020, before me personally came _____,
to me known who, being by me duly sworn, did depose and say that he reside(s) in _____
_____; that he is the _____ of _____, the
corporation described in and which executed the above instrument; that he knows the seal of said corporation;
that the seal affixed to said instrument is such corporate seal; that it was so affixed by authority of the board of
directors of said corporation, and that he signed his name thereto by like authority.

Notary Public

Re: PROJECT I.D.

02/2023

A5

**COUNTY OF ERIE
DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

PERFORMANCE AND LABOR AND MATERIAL PAYMENT BOND

PROJECT No. 2023-956-01 ECCN Sports Fields

KNOW ALL MEN BY THESE PRESENTS, That we, _____
of _____ (hereinafter called Principal) and the
_____ a corporation of the State of _____
having its principal office in the City of _____ and authorized to do business in the State of New
York (hereinafter called Surety) and held and firmly bound unto the County of Erie, State of New York (hereinafter called
Obligee), in the amount of _____
(\$ _____) Dollars, lawful money of the United States of America, for the payment of which the
Principal and the Surety hereby bind themselves, their heirs, executors, administrators, successors and assigns jointly and
severally, firmly by these presents.

WHEREAS, the above bounden Principal has by written agreement dated _____ 20____ entered into a
contract with the Obligee for \$ _____ which contract and documents included therein by reference
made a part hereof (hereinafter called Contract), covering the following project, _____

NOW, THEREFORE, the condition of this obligation is such that if the Principal shall:

1. Well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said Contract during the original term of said Contract and any extensions thereof that may be granted by the Obligee, with or without notice to the Surety, and during the life of any guarantee required under the Contract, and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions and agreements of any and all modifications of said Contract that may hereafter be made, with or without notice to the Surety.
2. Promptly make payment to all persons having a direct contract with the Principal or with a subcontractor of the Principal supplying labor and material in the prosecution of the work provided for in said Contract and any and all modifications of said Contract that may hereinafter be made, notice of which modifications to the Surety being hereby waived; then this obligation shall be void, otherwise to remain in full force and effect.

**COUNTY OF ERIE
DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

PROVIDED, HOWEVER, and this bond is executed and accepted upon the following express conditions.

1. That all persons who have supplied labor and material as aforesaid shall have a direct right of action hereunder against the Principal and the Surety subject, however, to the prior right of the Obligee to recover hereunder on account of any loss or damage caused to it by the failure of the Principal to perform the Contract as aforesaid.
2. The Surety for value received hereby stipulates and agrees, if requested to do so by the Obligee, to fully perform and complete the work and furnish the materials mentioned and described in said contract pursuant to terms, conditions, and covenants thereof, if for any cause said principal fails or neglects to so fully perform said work; the said Surety further agrees to commence said work of completion twenty (20) days after notice thereof from the Obligee.
3. That the Obligee shall notify the Surety by registered letter, addressed and mailed to its Home Office, of any breach of said-Contract within sixty (60) days after such breach shall have come to the knowledge of the Obligee (Owner)
4. That the Surety shall not be liable hereunder for any damage or compensation recoverable under any Workmen's Compensation or Employer's Liability Statute.
5. That no suit, action or proceedings, for loss or damage caused by a breach of any of the conditions of this bond shall be brought against the Surety by the Obligee after one (1) year from the day of final acceptance of the work by the Owner.
6. That no suit, action or proceedings for loss caused by the failure of the Principal to pay all persons supplying labor and material in the prosecution of the work under said Contract shall be brought against the Surety after six (6) months from the day on which final payment of the Contract is made.

Signed, sealed and dated this ____ day of _____ 20____

(Principal) (seal)

(Principal) (seal)

By _____
President, Vice President, Secretary-Treasurer (seal)
(Surety)

**COUNTY OF ERIE DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER**

**CONTRACTOR'S & SUB-CONTRACTOR'S PAYMENT CERTIFICATION
TO THE COMPTROLLER OF THE COUNTY OF ERIE, NEW YORK**

BILLING PERIOD (to match invoice): From: _____ to: _____

Pursuant to the _____ work for

(type of work or contract)

shown on the attached payment request,

(name of project)

I CERTIFY

(1) That the following constitute all the sub-contractors employed by me on this work during the period covered by this request (any sub-contractor named below must also submit this form separately. If none, so state). If there are more contractors than lines shown below, please provide an attached list with the signed/ notarized form:

NAME

ADDRESS

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

(2) That the following constitute all claims by sub-contractors & suppliers for material, labor and/or supplies used by me on this work, which are due and payable and have not been paid (If none, so state):

NAME

ADDRESS

AMOUNT

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

(3) That the following constitute all laborers employed by me on this work who are unpaid and the amount due each (If none, so state):

NAME

ADDRESS

AMOUNT

_____	_____	_____
_____	_____	_____
_____	_____	_____

(4) That all employees engaged by me on this work have been paid the prevailing rate of wages on prevailing rate schedule case no. _____

(PRC)

Dated: _____

CONTRACTOR: _____

BY: _____

TITLE: _____

State of New York }
County of Erie }

_____ being duly sworn, deposed and says, that he is the
_____ of the above company; that he has read the above statement:
that he knows the contents thereof, and that the same is true of his own knowledge.

Commissioner of Deeds or Notary Public, Erie County



FINAL WAIVER OF LIEN AND CLAIM

To: County of Erie

(Owner)

From:

(Name of Contractor Company)

(Address of Contractor Company)

Project:

The undersigned Contractor, Subcontractor or Supplier Company (hereinafter "Contractor"), for and in consideration of the sum of \$ _____ being payment for any and all work performed, services rendered and / or materials furnished with respect to the aforementioned Project, under all contracts, orders and instructions, including extras, written, and for other goods and valuable consideration paid by Owner, the receipt and sufficiency of which is hereby acknowledged, hereby covenants and warrants:

1. Contractor does hereby waive, release and relinquish any and all claims, demands and rights of lien to the extent of the amount shown hereon and previously paid for all work, labor, materials, machinery or other goods, equipment or services done, performed or furnished for the construction located at the project described above.
2. Contractor warrants that it has not been delayed in the performance of its works to date and that it has incurred no extra costs in connection herewith. The undersigned specifically waives, relinquishes and releases any and all claims incurred or alleged in connection with its work to date except only those claims, if any, previously denominated as claims and warrants and represents that any and all valid labor and / or materials and equipment bills, now due and payable, on the project herein above described on behalf of the undersigned have been paid in full to date of this waiver, or will be paid from these funds.
3. Contractor hereby agrees to indemnify and defend the Owner and to hold them free and harmless from any and all loses, claims, damages and expenses, including attorney's fees, arising directly or indirectly from any inaccuracy recited in the facts herein, from any failure to the Contractor to pay in full all sums due its laborers, subcontractors, material men and suppliers on the project, or from any liens against the project moneys filed by any such laborer, subcontractor, material men or suppliers.

Total Contract to Date: \$ _____

Due on Total Contract (after above payment): \$ _____

Contractor

Notary Public

**Sworn to before me on this _____ Day
of**

Print Name: _____

Signature: _____

Title: _____

Signature: _____

(Affix Notary Stamp)

OFFICE OF THE COMPTROLLER

PUBLIC IMPROVEMENT CONTRACT CERTIFICATION

Name of Project: _____

Prime Contractor Certification

1. I am an officer of _____
and am duly authorized to make this affidavit on behalf of the prime contractor on public contract No. _____.
2. I fully comprehend the terms and provisions of Section 220-a of the New York State Labor Law.
3. Except as herein stated, there are no amounts due and owing to or on behalf of laborers employed on the project by the contractor. (Set forth any unpaid wages and supplements; if none, so state.)

Name	Amount
_____	_____
_____	_____
_____	_____
4. The contractor hereby files every verified statement required to be obtained by the contractor from the subcontractor(s).
5. Upon information and belief, except as stated herein, all laborers (exclusive of executive or supervisory employees) employed on the project have been paid the prevailing wage and supplements for their services through _____ (if more than one subcontractor, list name and date separately), the last day worked on the project by their subcontractor(s). Set forth any unpaid wages and supplements; if none, so state and utilize clause 6.

Name	Amount
_____	_____
_____	_____
_____	_____
6. The contractor has no knowledge of amounts owing to or on behalf of any laborers of its subcontractor(s).
7. Pursuant to Section 223 of the New York State Labor Law, the contractor shall be responsible if the State Commissioner of Labor determines that wages and/or supplements were not paid or provided to employees of its subcontractor(s) in accordance with the appropriate schedule.

COUNTY OF ERIE DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER

I have read the foregoing statements and any schedules attached hereto and know the contents thereof, and I hereby verify that the same is true of my own knowledge, except that the statement with respect to wages and supplements owing by subcontractor is certified upon information and belief.

Signature

Print Name

Title

ACKNOWLEDGEMENT:

STATE OF NEW YORK

COUNTY OF _____:SS: _____

On this _____ day of _____

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
executed the same.

Notary Public

County

If this affidavit is verified by an oath administered by a notary public in a foreign county other than Canada, it must be accompanied by a certificate authenticating the authority of the notary who administers the oath. (See CPLR Sect. 2309 (c); Real Property Law, Sect. 311, 312.)

COUNTY OF ERIE DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER

OFFICE OF THE COMPTROLLER

PUBLIC IMPROVEMENT CONTRACT CERTIFICATION

Subcontractor Certification

Name of Project: _____

1. I am an officer of _____
a subcontractor on public contract no. _____ and I am duly authorized to make this affidavit on behalf of the firm.
2. I make this affidavit in order to comply with the provisions of Section 220-a of the New York State Labor Law.
3. On _____ we received from _____, the prime contractor, a copy of the initial/revised schedule of wages and supplements.
Prevailing Rate Schedule Case Number _____ (PRC) specified in the public improvement contract.
4. I have reviewed such schedule(s) and agree to pay the applicable prevailing wages and to pay or provide the supplements specified therein.

Signature

Print Name

Title

ACKNOWLEDGEMENT:

STATE OF NEW YORK
COUNTY OF _____ :SS: _____

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

Notary Public

County

If this affidavit is verified by an oath administered by a notary public in a foreign county other than Canada, it must be accompanied by a certificate authenticating the authority of the notary who administers the oath. (See CPLR Sect. 23099c); Real Property Law, Sect. 311, 312.)

FORM OF GUARANTEE

DATE OF SUBSTANTIAL COMPLETION: _____

BUILDING: _____

OWNER: COUNTY OF ERIE

Gentlemen:

The undersigned guarantees the _____ work
(type of work)

for the _____ under its contract
(name of project)

dated _____ with the COUNTY OF ERIE and change orders thereto,
be in accordance with drawings and specifications prepared

by: _____
(Name of Architect or Engineer)

including approved modifications to said drawings and specifications, and to be free from imperfect
workmanship and/or materials.

Furthermore, the undersigned agrees to repair at its own expense, for a period of two (2) years from the date of
substantial completion,
all of the _____ work covered
(type of work)

under said contract and change orders, that may prove defective.

Furthermore, the undersigned also agrees to pay the cost of repairing all damages to other work resulting from
the defects in its own work and to pay the cost of replacing other work which the undersigned may disturb in
making good defects in its own work.

It is also understood that COUNTY OF ERIE and/or Architect/Engineer shall give notice of observed defects with
reasonable promptness, and all questions arising under this guarantee shall be decided by the COUNTY OF
ERIE.

All corrections to defective work are to be done promptly and at the convenience of the Owner. Access to the
work is to be scheduled by the Owner during normal working hours.

Contractor

By: _____

Witness: _____ Date: _____

Note: This form shall be executed in duplicate with original signatures.

COUNTY OF ERIE DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER

FORM OF AFFIDAVIT

FOR FINAL PAYMENT

STATE OF NEW YORK

COUNTY OF ERIE

_____ being duly sworn, deposes and
says that (s)he is the contractor for _____ in the
(kind of work)
construction of _____
(Name of Project)
for COUNTY OF ERIE, the Owner; and says that (s)he is the

(President or Vice President)

(Secretary or Treasurer)

of _____ the contracting corporation.
(Name of Firm)

Deponent states that all bills and claims against the undersigned and his sub-contractors for labor, materials and equipment employed in the performance of this contract have been paid in full except the bill and claims listed below or on the schedule attached hereto.

(IF NONE, SO STATE)

(Name of Contractor)

"SEAL"

By _____

Sworn to before me this

_____ day of _____, 20_____

Notary Public or Commissioner of Deeds

NOTE: This form shall be executed in duplicate with original signatures.

APPRENTICESHIP UTILIZATION
CERTIFICATION FOR FINAL PAYMENT

STATE OF NEW YORK

COUNTY OF ERIE

_____ being duly sworn, deposes and says that he is the Contractor for the work associated with _____

_____ for the COUNTY OF ERIE, the Owner; and says that he is the _____

_____, the contracting company.

Deponent certifies that in accordance with Erie County Local Law 3-2018, _____% is the final percentage of persons participating in an apprenticeship program that the undersigned employed in the performance of this Contract.

Deponent further states that he has read the above statement and knows the content thereof, and that the same is true of his own knowledge.

(Name of Contractor)

“CORPORATE
SEAL”

By_____

Sworn to before me this

_____ day of _____, 20_____.

Notary Public or Commissioner of Deeds

COUNTY OF ERIE DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE COMMISSIONER

**ERIE COUNTY LOCAL AND DISADVANTAGED
WORKER COMPLIANCE CERTIFICATION**

In order to comply with Erie County Executive Order #18 dated September 27, 2017 we hereby make the following certification for the _____ project:
(name of project)

_____ 1) We hereby certify that, including any and all subcontracted work hours used on the project, we are in full compliance with Erie County Executive Order #18.

OR,

_____ 2) We hereby certify that on _____, _____ we submitted a partial waiver request to the Erie County Office of Equal Employment Opportunity. Such request for partial waiver was granted on _____, _____. The conditions granted to us under this partial waiver allow for _____

We further certify that we are in compliance with all conditions granted to us under this partial waiver.

We understand that this certification is a material component of this contract. Violation of the provisions of Executive Order #18 will constitute grounds for the immediate termination of this Agreement and will further result in the Contractor being deemed a non-responsible bidder for a period of twelve months. Once grounds for immediate termination are established, actual contract termination will be at the discretion of Erie County.

Company

Signature

Verification

STATE OF NEW YORK)
COUNTY OF ERIE) SS:

A) _____, being duly sworn, states he or she is the owner of (or partner in) _____, and is making the foregoing Attestation and Statement of Workforce and that such representations made are true to his or her own knowledge.

B) _____, being duly sworn, states that he or she is the (Name of Corporate Officer) _____, of (Name of Corporation or Enterprise) _____, that he or she has read the Attestation and Statement of Workforce and that such representations made are true to his or her knowledge, and are made at the direction of the Board of Directors of the Corporation.

Sworn to before me this _____
Day of _____. 20____

Notary Public

EXECUTIVE ORDER NO. 18
ERIE COUNTY LOCAL AND DISADVANTAGED
WORKER COMPLIANCE CERTIFICATION – WAIVER REQUEST

COMPANY: _____
PROJECT NAME: _____
PROJECT NUMBER: _____
ADDRESS / PHONE: _____

Waiver Request Requirements are as follows:

1. Contractor has made a good faith effort to meet the requirements of Executive Order No. 18.
2. This waiver request form is to be accompanied with a detailed description of reasons to grant the waiver request on company letterhead per the requirements included in the Rules and Regulations “Waiver Process”.
3. In the event Contractor is seeking a waiver due to **workforce** challenges, Contractor must provide proof of the following:
 - a. Job postings per the Rules and Regulations and a description of candidate responses; and/or
 - b. A copy of the company’s collective bargaining or other legally binding agreement(s) (i.e. union signatory agreements or exclusivity agreements, etc.) and a description of how Contractor attempted to meet E.O. 18 requirements via this hiring process.
4. In the event Contractor is seeking a waiver due to **specialized work**, Contractor must provide a description of the specialized work, the particular skills and/or licenses required to complete such work and the reasons why a waiver is needed.
5. If a partial waiver is granted, Contractor is required to be in full compliance with the adjusted requirements.

A waiver provided for Executive Order No. 18, is hereby requested on the grounds that we have met the job posting requirements of the waiver process and are seeking a reduction of the following workforce requirements:

<u>Percentage Required</u>	<u>Percentage Requested</u>
Local Labor (100%):	_____
Erie County (70%):	_____
Disadvantaged (30%):	_____

-OR-

A waiver provided for Executive Order No. 18, is hereby requested due to the nature of specialized work and the revised dollar amounts of the contract are proposed to be as follows:

Original Awarded Contract Value: \$ _____

Proposed Decrease in Contract
Value subject to EO 18 requirements: \$ _____
(if requesting partial waiver)

Revised Contract Value subject to
subject to EO 18 requirements: \$ _____

SIGNATURE OF AUTHORIZED
REPRESENTATIVE

DATE

FOR ERIE COUNTY APPROVAL:

Office of Equal Employment Opportunity

Erie County Department Representative

SECTION 011200 - MULTIPLE CONTRACT SUMMARY

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 PROJECT DESCRIPTION

- A. The Project consists of site improvements at the athletic fields on campus, including new site lighting at playingl fields, dugouts, grandstands, bleachers, press box, new medium voltage ductbank and shed for electrical equipment .

1.3 DRAWINGS INCLUDED FOR BID CONTRACT DOCUMENTS

- A. Refer to Drawing Index of the Bid Drawing cover page for a list of drawings issued for bid.

1.4 CONTRACTS

- A. The work shall be constructed under coordinated, concurrent multiple prime contracts using SUNY's Bid Proposal for all contracts for Construction. Separation of work into contracts will be accomplished by the Project Coordinator and as described in this section. Prime contracts for this Project include the following:
 - 1. Contract No.01 - Bid Package No. 01 - Site/Utility
 - a. Scope of work includes.....
 - 2. Contract No. 02 - Bid Package No.02 - Electrical
 - a. Scope of work includes.....
- B. All work to be in strict accordance with the bidding documents and specifically this scope of work and the to Bidders.
- C. Each Contractor is responsible to review all Drawings and Specifications for every contract to gain a complete understanding and knowledge of the entire Project, to determine how the work of each contract is to interface with every other contract.

1.5 WORK BY OWNER

- A. General: Cooperate fully with Owner so work may be carried out smoothly, without interfering with or delaying work under the Contract or work by Owner. Coordinate the Work of the Contract with work performed by Owner as noted in the Contract Documents.

WENDEL
SUNY ERIE COMMUNITY COLLEGE
SPORTS PLAYING FIELD PROJECT PHASE 1
WENDEL PROJECT #: 279806
ECDPW PROJECT #: 2023-956-01 ECCN Sports Fields

1.6 SUMMARY

- A. Section includes a summary of each prime contract, including responsibilities for coordination.
- B. Specific requirements for Work of each contract are also indicated in individual Specification Sections and on Drawings.

1.7 DEFINITIONS

- A. Permanent Enclosure: As determined by Architect, the condition at which roofing is insulated and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures equivalent in weather protection to permanent construction.

1.8 PROJECT INFORMATION

- A. Project Identification: SUNY Erie North Campus Athletics Fields – Wendel Project No. 279806.
 - 1. Location: 6205 Main Street Williamsville NY 14221
- B. Owner: State University of New York
 - 1. Address: 6205 Main Street, Williamsville, NY 14221
- C. Architect and Engineer: Wendel
 - 1. Address: 375 Essjay Road, Williamsville, NY

1.9 COORDINATION ACTIVITIES

- A. Coordination activities of Owner's Representative include, but are not limited to, the following:
 - 1. Provide overall coordination of the Work.
 - 2. Coordinate shared access to workspaces.
 - 3. Coordinate, schedule, and approve interruptions of permanent and temporary utilities, including those necessary to make connections for temporary services.
 - 4. Coordinate construction and operations of the Work with work performed by each Contract and Owner's construction forces.
 - 5. Facilitate coordination drawings in collaboration with each contractor to coordinate work by more than one contract.
 - 6. Coordinate sequencing and scheduling of the Work. Include the following:
 - a. Initial Coordination Meeting: At earliest possible date, arrange and conduct a meeting with contractors for sequencing and coordinating the Work; negotiate reasonable adjustments to schedules.
 - 1) Daily Plan of the Day (POD) Meetings: Arrange and conduct daily POD Meetings with all Prime Contractor foreman/superintendents present. Discuss and coordinate each Contractor's work for the day.
 - b. Prepare a combined contractors' construction schedule for entire Project. Base schedule on preliminary construction schedule. Secure time commitments for performing critical construction activities from contractors. Show activities of

WENDEL
SUNY ERIE COMMUNITY COLLEGE
SPORTS PLAYING FIELD PROJECT PHASE 1
WENDEL PROJECT #: 279806
ECDPW PROJECT #: 2023-956-01 ECCN Sports Fields

each contract on a separate sheet. Prepare a simplified summary sheet indicating combined construction activities of contracts.

- 1) Submit schedules for approval.
 - 2) Distribute copies of approved schedules to contractors.
7. Coordinate sequence of activities to accommodate third party tests and inspections, and coordinate schedule of tests and inspections.
 8. Coordinate completion of interrelated punch list items.

1.10 GENERAL REQUIREMENTS OF EACH CONTRACT

- A. Extent of Contract: Unless the Agreement contains a more specific description of the Work of each Prime Contract, requirements indicated on Drawings and in Specification Sections determine which contract includes a specific element of Project.
1. Unless otherwise indicated, the work described in this Section for each prime contract shall be complete systems and assemblies, including products, components, accessories, and installation required by the Contract Documents. All Contractors are hereby notified that the scopes of work contained in specification section 011200 "Multiple Contract Summary" are to be used in conjunction with the Construction Documents to determine the full scope of work required by each contract.
 2. Trenches and other excavation for the work of each contract shall be the work of each contract for its own work.
 3. Backing panels, sleeves, and metal fabrication supports for the work of each contract shall be the work of each contract for its own work.
 4. Furnishing of access panels for the work of each contract shall be the work of each contract for its own work. Installation of access panels shall be the work of each contract for its own work.
 5. Each Contractor will supply administration, supervision, labor, materials, tools, incidentals, equipment, appliances, layout, delivery, trucking, shop drawings, submittals, quality assurance, quality control, safety monitoring, engineering, scaffolding, hoisting, rigging, insurances, bond costs, overhead, profit, and expenses to produce the construction required by the bidding and contract documents, complete in all respects.
 6. Each Contractor is responsible for information provided in all of the Contract Drawings and Specifications as it pertains to their work. Information may be indicated on one drawing or across several drawings. Consequently, each and every Contractor is responsible for information on each and every drawing and in each and every Specification section.
 7. All applicable Federal, State, and Local Government laws, codes, standards, rules and regulations including, but not limited to, zoning, planning, fire, health, tax, insurance, safety, OSHA, criminal, building code, plumbing code, mechanical code, electrical code, energy code, utility company, traffic, labor, transportation, environmental, and education, shall apply.
 8. Except where specifically indicated that certain components are not included in the Work, it shall be inferred that it is the intent of the Contract Documents that all systems, including all general, HVAC, electrical and plumbing systems, be complete and functionally operational. Provide all incidental items and components necessary to achieve this intent, including coordinated sized utilities to all equipment. Refer to submittal requirements for additional coordination requirements in this regard.

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9. Each Contractor understands that time is of the essence and will adequately staff the job to successfully complete the contract work in accordance with any project phasing or staging plans and milestone completion dates. The option to work extended hours and weekends may be made available to meet this schedule at the Contractor's expense under prior agreement with the Owner's Representative.
10. Each Contractor's proposal is to be predicated on any milestone completion dates contained in the bidding documents including all costs to meet said dates.
11. The intention of the work is to follow a logical sequence; however, the Contractor may be required by the Owner's Representative to temporarily omit or leave out any section of their work, or perform their work out of sequence. All such out of sequence work and come back time to these areas shall be performed at no additional cost. This requirement will remain in effect for the duration of the Contractor's respective Contract.
12. Each Contractor will coordinate their work with all other Contractors, Owner's Representative, Architect, Owner, third party testing and inspection agencies, and all utility companies. It is also the responsibility of each Contractor to coordinate any required shut downs and system change overs. The cost of any off-hours or shift work required for equipment installation or utility shut downs will be included in the Contract.
13. Each Contractor is hereby notified that the start of the Contractor's work over existing or substrates provided by other Contractors constitutes acceptance by that Contractor.
14. Unless otherwise included in other scopes of work, demolition, removal, and/or relocation of any existing item conflicting with the installation of new work is the specific responsibility of the Contractor installing the new work.
15. Each Contractor will provide any surveys, layouts, etc. required to accomplish their work. Each Contractor is responsible for layout by establishing, setting, and maintaining lines, locations and elevations for all their work, and is required to carry up all the lines and grades to correctly perform all their work. The Owner's Representative will provide one coordinated benchmark with coordinates but it is a specific requirement that each Contractor provide their own layouts, surveys, etc. from that point.
16. Damage to any existing survey points is the responsibility of the Contractor (who caused the damage) and must be replaced in a timely matter at no cost to the Owner.
17. Coordination Drawings: All contractors shall prepare and submit Coordination Drawings as described in section 013100 "Project Management and Coordination".
18. All Contractors are responsible for their own cutting, coring, drilling, and patching as required to complete their scope of work, unless specified or noted otherwise on the drawings. All concealed openings (piping, ductwork, conduit, etc.) must be repaired to comply with specified wall or deck conditions to meet all applicable codes. Cutting, coring, drilling and patching is to be done neatly with minimal damage to surrounding materials, and holes are to be patched and/or fire-safed as required to the satisfaction of the Architect.
19. All Contractors are responsible for fire-stopping of penetrations related to their work through floors, walls and ceilings in accordance with applicable specification sections, Federal, State and Local codes as required to maintain fire-rated assemblies. Openings provided by a Contractor for another Contractor shall be fire-stopped by the Contractor requiring the opening. Refer to Division 7 specifications.
20. All Contractors will provide all testing, calibrations, adjustments, certifications, commissioning and start-up as required to provide fully operational systems.
21. All Contractors will be responsible for the accuracy of building and site construction such as, but not limited to, locations such as underground utilities, pavements, foundations,

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- anchor bolts, steel, walls, etc. Contractors shall employ a licensed land surveyor to instrument survey the accuracy of the building construction. The instrument survey shall be sealed and three (3) hard copies and one electronic CAD file forwarded to the Owner's Representative for distribution to the Owner and Architect.
22. All Contractors shall make provisions as necessary to provide suitable access throughout the project areas to afford all Contractors and the Owner the opportunity to install their materials and equipment within the project area including but not limited to, Furniture, Fixtures and Equipment Installation, HVAC Equipment, Plumbing Equipment, Fire Protection Equipment and Electrical Equipment. Coordinate with each Contractor.
 23. Substitutions: If a substitution is approved prior to contract award, each prime contractor shall cooperate with other contractors involved to coordinate the approved substitutions with remainder of the work.
 24. Each Contractor shall provide all necessary permits, fees, inspections and approvals as it pertains to this scope of work. Owner is responsible for all special inspections as further defined in section 014100 "Special Inspections".
 25. Each Contractor shall provide required submittals, shop drawings, coordination drawings, qualifications, certificates, test reports, calculations, samples, mockups, inspection reports as required for this scope of work. Contractors must include reproduction costs.
 26. Each Contractor shall provide cleaning of substrates in accordance with manufacturer requirements prior to installation.
 27. Each Contractor shall provide O&M manuals, testing, commissioning, training, demonstrations, instructional video, maintenance service, attic stock as it applies to this scope of work.
 28. Each Contractor shall provide required warranties as they apply to this scope of work. Warranties for material and equipment shall commence upon review and acceptance by Architect at Substantial Completion of entire project, regardless of phasing.
 29. Each Contractor shall provide and maintain protection of all new and existing work and finishes scheduled to remain. Remove protection at final acceptance.
 30. Each Contractor shall be responsible to provide dewatering as required to perform this scope of work.
 31. Each Contractor will be required to prepare, submit, and actively implement a proper safety program throughout the duration of the project. Each Contractor will provide all necessary signs, bracing, special lighting, etc. for his own work at all individual locations as may be applicable.
 32. All Contractors will provide full time on-site supervision from commencement of their work activities until work is completed or such time as determined by the Owner's Representative. If supervision is reduced or terminated without the consent of the Owner's Representative, the Owner's Representative will appoint an individual to manage work under this Contract with all costs borne by this Contractor. The Contractor shall continue to assume all responsibilities for the individual and the work of this Contract.
 33. All Contractors will coordinate with the Owner's Representative to arrange for code inspections (By Contractor) and special inspections (By Owner's Representative). The Contractor must give the Owner's Representative a minimum of forty-eight (48) hours' notice prior to the scheduled inspection dates.
 34. All Contractors will employ the appropriate trade's people for their work as required. These people shall be experienced in their trades. A shortage of labor or labor strike in the industry shall not be accepted as an excuse for not properly staffing the project to

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- maintain the project schedule.
35. All Contractors will take all necessary measures to reduce the amount of noise generated by construction activities. Mitigate sources of noise generating equipment by using new equipment or properly maintained used equipment meeting new product noise emission standards. Control locations of noise by placing noise-generating equipment as far away from sensitive areas as possible. Perform work generating noise at times when people would be least affected, i.e. normal daytime business hours. Provide public notification of construction operations and methods to handle complaints.
 36. Each Contractor is expected to review all the plans and specifications for all Prime Contracts as it may affect their work and/or trade jurisdiction and to include in their proposal all costs necessary to make connections with or coordinate with those requirements whether expressly stated therein or implied. This is to include but not be limited to tie-ins to existing construction, field control wiring, etc. where normally claimed by trade jurisdiction of the Contractor.
 37. All Contractors will provide any and all support steel that is not shown on the structural contract drawings, but that is required for the installation of pipe, duct, cable tray, conduit hangers, door frames, structural steel and for all equipment supports. Steel shall be primed painted per Division 5 specification sections. Contractors will not be permitted to hang supports off existing work or other contractors work without prior approval.
 38. Each Prime Contractor is responsible for furnishing and installing equipment supports for equipment required in its contract.
 39. Contractors shall restore all areas disrupted in the performance of their work to the conditions that existed prior to the start of work.
 40. All Contractors shall be responsible for ventilation in all areas to exhaust toxic, noxious or otherwise hazardous fumes, gases, or dusts, etc., from welding, cad welding, painting, grinding, sawing, sweeping, or hazardous activity. Operations shall be kept to the absolute minimum and shall be vented directly to the outside by the Contractor performing the work. If said Contractor cannot keep the aforementioned to the absolute minimum or vent directly outside, and the aforementioned activity prohibits other Contractor's from performing work, said Contractor creating fumes, dust, etc. as mentioned above must make provisions to complete work creating problem at a time including, but not limited to, nights and weekends, so as to allow other Contractors to proceed with work at no additional cost to the Owner.
 41. No Contractors are permitted to use any of the Owners equipment.
 42. No radios, MP3 players or earphones will be allowed on job site at any time.
 43. Each Contractor shall identify and document, through the use of dated photographs and videos, existing conditions prior to taking over of any areas before demolition and/or construction. A copy shall be provided to Owner's Representative prior to the commencement of demolition and/or construction. Reference specification section 013233 "Photographic Documentation".
 44. All Contractors are to maintain and keep clear all life safety egress pathways.
 45. Smoking is not permitted on the project site at anytime.
 46. Blocking required for a Contractor's scope of work shall be furnished and installed by that Contractor, locations to be coordinated with work of other Contractors that may be impacted.
 47. Interior and/or exterior equipment pads required to support various pieces of equipment, shall be provided by the Contractor who will be furnishing and installing the piece of equipment which requires the concrete equipment pad.

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48. Openings in walls, floors, ceilings and roofs required for the work of each Contractor shall be coordinated with the Contractor who installed the wall, floor, ceiling roof, etc. to verify locations and confirm quantities to be maintained.

1.11 CONTRACT NO. 01 - BID PACKAGE NO. 01 - SITE/UTILITY

- A. Work in the Contract No. 01 - Site/Utility includes providing all labor, materials, tools, equipment, and supervision, including safety supervision, related to or necessarily involved with the performance of the Work, as detailed in this section, as indicated on any drawings included in the contract documents, and strict accordance with but not limited to the following specification sections:
 1. Project Manual:
 - a. Legal and Procedural Documents
 - b. General Conditions
 - c. Division 1 – General Requirements (All Sections)
 - d. Division 2 – Existing Conditions (All Sections)
 - e. Division 3 – Concrete (All Sections)
 - f. Division 5 – Metals (All Sections)
 - g. Division 10 – Specialties (All Sections)
 - h. Division 11 – Equipment (All Sections)
 - i. Division 13 – Special Construction (All Sections)
 - j. Division 31 – Earthwork (All Sections)
 - k. Division 32 – Exterior Improvements (All Sections)
 - l. All Addenda issued as part of this Bid Package.
- B. Construction drawings dated 11/27/2024 as they pertain to the scope of work for this bid package.
- C. The work of Site/Utility Contract to include, but is not limited to the following:
 1. Provide Site/Utility Construction work required for a complete and operating facility.
 2. Provide final cleaning for all work areas associated with this contract including all labor, equipment, and materials as required to achieve Final Cleaning. Owner to provide list of approved cleaning and maintenance products to be utilized by the Contractor. Contractor to verify compatibility of the Owner provided list of products with new construction.
Upon completion of the work, the Contractor is to leave the completed project ready for use without the need of further cleaning of any kind.
 3. Provide foundation preparation, proof rolling, under cutting, excavation, backfill, and compaction required for this scope of work.
 4. Provide and maintain the site staging area complete and including but not limited to the fencing, gates, traffic control, fabric and asphalt protection.
 5. Painting for the work of each contract shall be the work of the General Construction Contract.
 6. Provide all Entrance Floor Mats complete and in its entirety.
 7. Provide all Wall and Door Protection complete and in its entirety.
 8. All work obviously necessary for the completion of the Contract shall be included, whether or not specifically shown or specified.

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9. Contractor is responsible for any and all hot and cold weather and winter conditions, additional materials, labor, equipment (permanent or temporary) and protection required to complete the project in accordance with the project schedule.
 10. Specific civil/site work scope, outside of building foundations include concrete sidewalks, detectable warning strips, concrete curbs, concrete apron, flag pole & base, handicap signage and Alternate #1 Bollards; as further detailed within the Contract
- D. Temporary facilities and controls in the General Construction Contract as they pertain to the scope of work for this bid package, as described in Section 015000 – Temporary Facilities and Controls

1.12 CONTRACT NO. 02 - BID PACKAGE NO. 02 - ELECTRICAL

- A. Work in the Contract No. 03 - Electrical Contract includes providing all labor, materials, tools, equipment, and supervision, including safety supervision, related to or necessarily involved with the performance of the Work, as detailed in this section, as indicated on any drawings included in the contract documents, and strict accordance with but not limited to the following specification sections:
1. Project Manual:
 - a. Legal and Procedural Documents
 - b. General Conditions
 - c. Division 1 - General Requirements (All Sections)
 - d. Division 2 – Existing Conditions (All Sections)
 - e. Division 26 – Electrical (All Sections)
 - f. All Addenda issued as part of this Bid Package.
- B. Construction drawings dated 11/27/2024 as they pertain to the scope of work for this bid package.
- C. Electrical connections to equipment furnished by the General Construction Contract, Plumbing Contract, Fire Protection Contract, HVAC Contract, and Electrical Contract.
- D. Contractor is responsible for any and all hot and cold weather and winter conditions, additional materials, labor, equipment (permanent or temporary) and protection required to complete the project in accordance with the project schedule.
- E. Temporary facilities and controls in the Electrical Contract as they pertain to the scope of work for this bid package, as described in Section 015000 Temporary Facilities and Controls

1.13 CONSTRUCTION SCHEDULE

- A. All Work: Perform in accordance with a pre-determined Work Schedule agreed upon by Owner and Contractors. Each Prime Contractor shall submit a detailed Work Schedule in accordance with Specification Section 013200 “Construction Progress Documentation”. The Work shall be conducted in accordance with the following schedule milestones:
1. All Contracts:
 - a. Complete submission of all Submittals, Shop Drawings and Coordination Drawings within (45) calendar days of Notice to Proceed.
 - b. Approval of Contracts: 2/18/2025

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- c. Anticipated Notice of Award: 2/19/2025
 - d. Anticipated Notice to Proceed: 3/12/2025
 - e. Commencement of Construction Date: 3/17/2025
 - f. Substantial Completion Date: 8/15/2025
 - g. Final Completion Date: 9/12/2025
- B. All prime contractors understand that time is of the essence and will adequately staff the job to successfully complete the Contract Work in accordance with the project schedule and milestone dates. Each Prime Contractor's proposal is to be predicated on the project schedule milestone completion dates contained in the bidding documents. All costs associated with schedule recovery shall be at the Contractor's expense for failure to meet schedule dates.
- C. The date indicated for Substantial Completion is an essential condition of each prime contract. Each Contractor agrees that work shall be prosecuted diligently and uninterrupted at such a rate to insure Substantial Completion of all work and certificates of occupancy on or before the date stated in the Contract.
- D. It is expressly understood and agreed by each Prime Contractor and the Owner that the time for Substantial Completion and certificates of occupancy are reasonable, taking into consideration average climatic variations, restrictions concerning use of the site, and other conditions prevailing.
- E. Each Prime Contractor shall coordinate work with the Owner, Owner's Representative, other Contractors at the site, and all of its subcontractors, where sequencing and delineation of responsibility is involved, if applicable.
- F. It is the responsibility of each Prime Contractor to carefully interface all construction operations until they reach their final completion, so the Owner's programs and services can be carried on without interruptions. The Owner's Representative may dictate "out of sequence work" or "Leap Frogging" work plans to ensure smooth flow of all operations, for any trade, in order to maintain this requirement.
- G. Phasing – All contractors are required to coordinate their work with that of the other trades and to take all measures necessary to maintain a continuous operation of all systems associated with the phasing plans.

1.14 DEFINITION OF CONTRACT MILESTONES

- A. Complete Submission of all Submittals and Shop Drawings: As determined by the Project Coordinator; all submittals with the exception of closeout submittals are submitted for approval.
- B. Substantial Completion: As determined by the Project Coordinator; all work and systems are complete, operational, tested and ready for facility operations and certificate of occupancy. All closeout documentation, warranties, certifications, record documents, and operation and maintenance manuals are submitted.
- C. Project Final Completion: As determined by the Project Coordinator, all punch list work is complete; and closeout documentation, warranties, certifications, record documents, and operation and maintenance manuals are approved.

1.15 CONTRACTOR USE OF PREMISES (FOR EACH PRIME CONTRACTOR)

- A. Use of the Site: Limit use of the premises to work in areas indicated during work hours indicated. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.
 - 1. All deliveries to the Contractor at the site must be accepted at the site by the Contractor, regardless of time of delivery. The Owner's Representative and Owner will not accept deliveries for the Contractor at any time.
 - 2. Driveways and Entrances: Keep driveways and entrances serving premises clear and accessible to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials and equipment on site.
 - 3. Partial Owner Occupancy: Owner reserves the right to occupy and to place and install in completed areas of building before Final Completion, provided such occupancy does not interfere with completion of Work. Such placing of equipment and partial occupancy shall not constitute acceptance of total Work.
- B. Locations of trailers, storage areas, parking areas, building access points, and staging areas shall be coordinated with the Owner, Owner's Representative and Architect.
- C. Maintain the existing condition of public roads and sidewalks adjacent to the project. This will include the daily removal of construction debris from the surrounding properties, public sidewalks, and roads.
- D. Each Contractor to provide their own storage onsite as required for their scope of work. Location of storage will be at the direction of the Owner's Representative. The Owner's existing facilities are not to be used for storage. All deliveries to be scheduled and approved with the Owner's Representative with a minimum 48 hour notice. There will be limited room onsite for excessive storage. All Contractors shall provide off-site storage until such time that site and/or building is available for limited storage. Storage of equipment and materials in the building or on the site will be subject to the Owner's Representative's approval five days prior to delivery.
- E. The Owner reserves the right to perform selected construction operations with its own forces or to employ separate contractors on portions of the project.
- F. Do not unreasonable encumber site with materials and/or equipment as determined by the Construction Manager.
- G. Do not load structures with weight that will endanger structure.
- H. Each Contractor is responsible for protection and safekeeping of his materials, products and equipment stored on the premises or incorporated into the construction, until his contract is complete and accepted by the Owner.
- I. Move at the Contractor's cost any stored materials, products, or equipment which interfere with operations of the Owner or others, or as directed by the Construction Manager.

1.16 WORK RESTRICTIONS (FOR EACH PRIME CONTRACTOR)

- A. Work Restrictions, General: Comply with restrictions on construction operations.

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1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Limit work onsite to normal business working hours of 7:00 a.m. to 6:00 p.m., Monday through Friday, unless otherwise indicated.
 1. Weekend Hours: To be coordinated with Owners Representative, subject to Owner's approval.
 2. Early Morning Hours: To be coordinated with Construction Manager, subject to Owner's approval.
 3. Hours for Utility Shutdowns: To be coordinated with Owners Representative, subject to Owner's approval. Contractor to provide minimum 48 hours' notice of required utility shutdown.
- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities and premises occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
 1. Notify Owner's Representative not less than two days in advance of proposed utility interruptions.
 2. Obtain Owner's written permission before proceeding with utility interruptions.
- D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
 1. Notify Owner's Representative not less than two days in advance of proposed disruptive operations.
 2. Obtain Owner's written permission before proceeding with disruptive operations.
 3. Comply with Town of Williamsville ordinances and codes.
- E. Smoking is not permitted on the project site at any time. There will be no exceptions.
- F. Controlled Substances: Use of tobacco products and other controlled substances on the project site is not permitted.
- G. Employee Identification: Provide identification tags for Contractor personnel working on Project site. Require personnel to use identification tags at all times.

1.17 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 1. Abbreviated Language: Language used in the Specifications and other Contract Documents are abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
 2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by

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others when so noted.

- a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 3. Specification requirements are to be performed by Contractor unless specifically stated otherwise. If a conflict between Drawings and Specifications shall occur, the most stringent and/or more costly requirement shall govern.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 2. Abbreviations: Materials and products are identified by abbreviations scheduled on Drawings.
 3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

1.18 MISCELLANEOUS PROVISIONS

- A. Copies of Drawings and Project Manuals: It is the Contractor's responsibility to obtain the number of copies of the Drawings and Project Manual it requires for the project. Bidding documents can be obtained through the Avalon Plan Room. Refer to the "Notice to Bidders" for additional information. The Owner will not reimburse the Contractor for these copies.
- B. Licensed Contractors/Subcontractors: Prime Contractor and all Subcontractors must be licensed to work in the State of New York in each of their perspective fields of work on the Project.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 011500 - APPLICATION FOR PAYMENT

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. The Contractor for this work shall be held to have read: all of the Bidding Requirements, all of the County of Erie General Conditions, the Supplementary General Conditions, Information for Bidders, Division 1 and Contract Proposal Forms before submitting a tender for the proposed work, and in the execution of the work, he will be bound by all of the conditions and requirements therein.
- B. Drawings and general provisions of the Contract, Division 01 Specification Sections, apply to this Section. All work shall comply with the New York State Uniform Fire Prevention and Building Code, latest edition.

1.2 GENERAL REQUIREMENTS

- A. The Contractor shall submit an Application for Payment in accordance with the requirements stated in the General Conditions of the Contract Specifications and as specified in the Project Manual.
- B. Prime Contractor to submit a list of emergency contacts of on-site personnel to contact in the event of an emergency prior to commencing work.
- C. All documents required summarized herein are to be submitted to the Owner and the Architect/ Engineer via email or postal mail. The County will not approve pencil copies verbally. See Section 1.3 Review Procedure below for pencil copy procedure.
- D. During Construction, Monthly Applications for Payment can be approved at a construction progress meeting as scheduled and documented in the Meeting Minutes or by written approval via email or other means as determined by the Owner.

1.3 REVIEW PROCEDURE

- A. The Contractor shall submit a Schedule of Values in the 'Request For Payment Worksheet' format included within this specification to the Owner and the Architect/ Engineer for review and approval prior to submitting any pencil copy for approval or formal billing for any work.
 - a) All items already listed in the template provided shall be included as line items accordingly.
 - b) ALL subcontractors with their associated scope of work broken down by line item (row) shall be included as shown in the template provided in the attached. This includes all work that the prime contractor anticipates to be subcontracted to complete the project scope.
 - i. In the event a subcontractor has yet to be identified by the prime contractor, the anticipated scope of work for a subcontractor(s) shall be provided and broken down

- by line (row) item as shown to the best of the prime contractor's knowledge. The eventual subcontractor(s) used to complete a given scope of work can be listed and on future payment applications once a subcontractor is identified by the prime contractor.
- ii. Work cannot be billed for until the subcontractor (if applicable) is identified for that specific scope/ portion of work related to the project on the Schedule of Values.
- B. The Contractor, Architect/Engineer, Construction Inspector, and Construction Manager (when applicable) must review and approve all Preliminary Requests for Payment (Pencil Copies) prior to submission of the Monthly Application for Payment.
- a. Pencil copy Requests for Payment attempting to forecast work yet to be completed (billing projections) will not be reviewed
- b. The Contractor shall submit the pencil copy to the Owner and the Architect/ Engineer, billing for the work completed within the month prior, by the 15th of each month. At the contractors discretion and as authorized by the Owner, the Contractor may request to have the pencil copy submission date(s) and/or billing period for prior work completed modified.
- C. After the Pencil Copies are approved, the Contractor shall forward the formal Monthly Application for Payment with all the required documents to the Architect/Engineer.
- D. The Architect/Engineer must review the Applications for Payment to ensure that they are mathematically accurate and that all the required documents are included.
- E. If any of the required documentation is missing or inaccurate, the Owner reserves the right to reject the Application for Payment return to the Contractor. Such action will be recorded in the minutes of the Project Meeting and/or notified by the Owner by email. The Owner is under no obligation to provide a list of missing items but may do so as a courtesy.
- a. Rejected Applications for Payment must be corrected and re-submitted to the Architect/Engineer for approval.
- F. If the required documentation is complete and accurate the Monthly Application for Payment will be approved and submitted processing once signed by all parties; The Owner, Contractor, Architect/Engineer, Construction Inspector, and Construction Manager (when applicable).
- G. The Department of Public Works, Office of the Commissioner will receive and log-in the approved Monthly Application for Payment when received.

1.4 REQUIRED DOCUMENTS

- A. The Contractor's Monthly Application for Payment **must include** one (1) set of originals comprised of the following:
1. Invoice: Printed on the Prime Contractor's own Letterhead.
2. Certificate for Payment: Signature sheet for payment certification and approval.

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3. Request for Payment Worksheets: Labor and material costs itemized by Specification Division of Work and/or separated by scope of work of subcontractors.
 4. Contractor's & Sub-Contractor's Payment Certification (CPC-1 form): To be completed separately by Prime Contractor and ALL associated Sub-Contractors. This includes Sub-Contractors to the Prime Contractor as well as any associated Sub-Contractors to Sub-Contractors associates with the project.
 - a. Note that Sub-Contractor(s) and named on the Prime Contractor's CPC form must also complete this form separately. Sub-Contractors to Sub-Contractors to the Prime Contractor also need to complete a separate form.
 5. MBE/WBE/SDVOB Utilization Forms: Part B - at 30% completion, Part C - at 75% completion to be completed by Prime Contractor.
 - a. MBE/WBE/SDVOB Utilization Forms as required are included within the General Conditions – Appendix A
 6. Certified Payroll Records, from each Prime Contractor and from each Sub-Contractor associated with the project: Certified Payroll Records are to be submitted electronically via LCP Tracker per the General Conditions included as part of this project manual.
 - a. All contractors, including any associated subcontractor performing work on the project, are to submit certified "Non-performing weeks" if no work was performed. This is for all weeks for each (sub)contractor applicable to their respective scope of work from the when work commences to when the work is completed.
 - b. When each respective (sub) contractor scope of work is complete, the certified payroll for the last week on the project is to be marked "Final" in LCPtracker.
 7. Certificate of Insurance for Stored Materials (when applicable): To be completed by Prime Contractor only when billing for stored materials not yet delivered to the jobsite, per sections 4.03, 5.02, and 7.02 of the General Conditions.
- B. The Contractor's **FINAL** Application for Payment including **retention only must include** one (1) set of originals comprised of the following:
1. Invoice: Printed on the Prime Contractor's own Letterhead.
 2. Certificate for Payment: Signature sheet for payment certification and approval.
 3. Request for Payment Worksheets: Labor and material costs itemized by Division of Work and/or separated by scope of work of subcontractors.
 4. Final Waiver of Lien and Claim (FW-1 form): Affix with Notary Stamp. To be completed by Prime Contractor and ALL associated Sub-Contractors.
 5. Form of Guarantee (F.G.-1 form): To be completed by Prime Contractor only.

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6. Form of Affidavit For Final Payment (F.A.-1 form): To be completed by Prime Contractor only.
7. Public Improvement Contractor Certification (PICC-2 form): To be completed by Prime Contractor.
8. Public Improvement Contractor Certification (PICC-1 form): To be completed separately by all Sub-Contractors (if applicable).
9. MBE/WBE/SDVOB Utilization Form Part D - at 100% completion: To be completed by Prime Contractor only.
10. Executive Order 18 Workers Compliance Certification (EO18-1 form) (if applicable): To be completed by Prime Contractor only.
11. Apprenticeship Utilization Certification (AU-1 form) (if applicable): To be completed by Prime Contractor only.

ALL SIGNATURES ON ALL FORMS NOTED ABOVE MUST BE ORIGINAL SIGNATURES

1.5 DISTRIBUTION

- A. In addition to including MWBE/SDVOB forms with the payment application, the Prime Contractor must mail separately, one (1) copy of the MBE/WBE/SDVOB Utilization forms Part B, Part C, and Part D forms at 30% completion, 75% completion, and 100% completion respectively to the Erie County Division of Equal Employment Opportunity, 95 Franklin St., Buffalo, New York, 14202.
- B. If deemed applicable to the underlying project, the Prime Contractor and all subcontractors shall provide monthly reports demonstrating good faith efforts to meet the requirements outlined in Executive Order #18 dated September 27, 2017 and Local Law 3-2018 via LCPtracker.

1.6 STANDARD FORMS

- A. **THE ERIE COUNTY DEPARTMENT OF PUBLIC WORKS' STANDARD FORMS MUST BE USED IN ALL APPLICATIONS FOR PAYMENT. AIA (AMERICAN INSTITUTE OF ARCHITECTS) FORMS OR ANY OTHER FORMS WILL NOT BE ACCEPTED IN LIEU OF THE ABOVE. THE STANDARD FORMS ARE ANNEXED HERETO FOR CONTRACTOR'S REFERENCE AND USE.**

CONTRACTOR'S MONTHLY APPLICATION FOR PAYMENT CHECKLIST

PROJECT NAME: _____

PAYMENT NO.: _____

DPW PROJECT NO.: _____ CONTRACTOR NAME: _____

DATE: _____

*Prime/Sub-Contractor Name	Invoice	Certificate For Payment	Request for Payment Worksheet	Contractor's Payment Certification (CPC-1)	M/WBE& SDVOB Utilization Part B-30%	M/WBE& SDVOB Utilization Part C-75%	Certified Payroll Records	Certification for Stored Materials	*Subs Included in this Pay App.	Comments

*Prime Contractor shall list all sub-contractors included in their scope of work and shall make a check mark (Subs included column) for those sub-contractors covered under this payment application. Refer to Section 011500 - Application for Payment for additional payment information, requirements and procedures for Reduction in Retention and Final Payment.

SAMPLE INVOICE
(ON YOUR OWN LETTERHEAD)

X.Y.Z. CO., INC.

499 Elm Avenue
P.O. BOX 9-C
Buffalo, NY 14000
Telephone: (716) 666-8888

Date: _____

Payment No.: _____

To: COUNTY OF ERIE
DEPARTMENT OF PUBLIC WORKS – OFFICE OF THE COMMISSIONER
14TH FLOOR
95 FRANKLIN STREET, ROOM 1408
BUFFALO, NY 14202

Re: PROJECT NAME: _____
DPW PROJECT NO.: 2021-XXX-01
BILLING PERIOD: From 1/1/2021 to: 1/31/2021

ORIGINAL CONTRACT AMOUNT: \$ 0.00

CHANGE ORDER:	NO.: _____	\$ 0.00
	NO.: _____	\$ 0.00
	NO.: _____	\$ 0.00

CONTRACT SUM TO DATE: \$ 0.00

Total Complete to Date:	\$ 0.00
Less 5% Retainage:	\$ 0.00
Total Earned Less 5% Retainage:	\$ 0.00
Less Previous Payments	\$ 0.00
Current Amount Due:	\$ 0.00

VENDOR NO: _____
CE/PO NUMBER: _____
CONTRACT DOC NO: _____
SAP WBS NO: _____

CERTIFICATE FOR PAYMENT

PROJECT NAME: _____

CONTRACTOR NAME: _____

DPW PROJECT NO.: _____

PAYMENT NO.: _____

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Undersigned certifies to the Owner that to the best of their knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the Amount Certified.

AMOUNT CERTIFIED \$ _____

Contractor Company Name	Contractor Representative's Name	Signature	Date

Architect/Engineer Firm Name	Architect/Engineer Representative's Name	Signature	Date

Erie County DPW

Construction Inspector (Owner)	Construction Inspector (Owner) Name	Signature	Date

Erie County DPW

Project Manager (Owner)	Project Manager (Owner) Name	Signature	Date

This Certificate is not negotiable. The **AMOUNT CERTIFIED** is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

REQUEST FOR PAYMENT - WORKSHEETS

PROJECT NAME: _____

SHEET#: _____ **OF** _____

CONTRACTOR NAME: _____

DPW PROJECT NO.: _____

PAYMENT NO.: _____

TYPE OF CONSTRUCTION WORK: _____

BILLING PERIOD: **FROM** _____ **TO** _____

DATE: _____

ITEM NO.	ITEM	ITEM PRICE		PERCENT COMPLETE		AMOUNT COMPLETE TO DATE		AMOUNT PREVIOUSLY BILLED		AMOUNT THIS BILLING		AMOUNT UNBILLED	
		L	M	L	M	L	M	L	M	L	M	L	M
PREVIOUS SUBTOTAL(If Applicable)													
PRIME CONTRACTOR – XYZ COMPANY													
1	Mobilization												
2	Bonds and Insurances												
3	Supervision												
4	Temporary Facilities/ Conditions												
SUBCONTRACTOR(S) as applicable – XYZ COMPANY (All subs are to be listed with their respective scopes of work)													
X	Building/ Project Cleaning												
X	Clsoeout Docs/ Record Drawings												
X	Oper. & Maint. Manuals												
SHEET SUBTOTAL													

REQUEST FOR PAYMENT - WORKSHEETS

PROJECT NAME: _____

SHEET#: ____ OF ____

CONTRACTOR NAME: _____

DPW PROJECT NO.: _____

PAYMENT NO.: _____

TYPE OF CONSTRUCTION WORK: _____

BILLING PERIOD: FROM _____ TO _____

DATE: _____

ITEM NO.	ITEM	ITEM PRICE		PERCENT COMPLETE		AMOUNT COMPLETE TO DATE		AMOUNT PREVIOUSLY BILLED		AMOUNT THIS BILLING		AMOUNT UNBILLED	
		L	M	L	M	L	M	L	M	L	M	L	M
PREVIOUS SUBTOTAL(If Applicable)													
NO.	ALLOWANCES (IF Applicable)												
CONTRACT TOTALS													
CONTRACT GRAND TOTAL													
NO.	APPLIED CHANGE ORDERS												
	Change Order X-0X												
CHANGE ORDER TOTALS													
CHANGE ORDER GRAND TOTAL													
ADJUSTED TOTALS													
ADJUSTED GRAND TOTAL													

SECTION 012100 - ALLOWANCES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements governing allowances.
- B. Types of allowances include the following:
 - 1. Contingency allowances.

1.3 COORDINATION

- A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.4 CONTINGENCY ALLOWANCES

- A. Use the contingency allowance only as directed by Architect for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.
- B. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 SCHEDULE OF ALLOWANCES

- A. Allowance No. 1 - Rock Removal: CONTINGENCY Allowance: Include the sum of Seventy-Five Thousand Dollars to remove bedrock when that is encountered on the project. Time and materials will be tracked as well as equipment usage. Equipment costs will be verified using Equipment Watch rental rates. Costs will be billed against this allowance.

END OF SECTION

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.

1.3 MINOR CHANGES IN THE WORK

- A. Architect will issue through Construction Manager supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Architect's Supplemental Instructions."

1.4 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
 - 2. Within 14 calendar days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - 3. Include costs of labor and supervision directly attributable to the change.
 - 4. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 - 5. Quotation Form: Use forms acceptable to Architect .
- B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect .
 - 1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
 - 2. Include costs of labor and supervision directly attributable to the change.
 - 3. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times,

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and activity relationship. Use available total float before requesting an extension of the Contract Time.

4. Proposal Request Form: Use form acceptable to Architect.

1.5 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Work Changes Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701.

1.6 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document G714. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

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SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including but not limited to, the following:
 - 1. Preliminary construction schedule.
 - 2. Contractor's construction schedule.
 - 3. Submittal schedule.
 - 4. Daily construction reports.
 - 5. Material location reports.
 - 6. Site condition reports.
 - 7. Special reports.

1.3 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
 - 1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
 - 2. Predecessor Activity: An activity that precedes another activity in the network.
 - 3. Successor Activity: An activity that follows another activity in the network.
- B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- D. Event: The starting or ending point of an activity.
- E. Float: The measure of leeway in starting and completing an activity.
 - 1. Float time belongs to Owner.
 - 2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
 - 3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

1.4 INFORMATIONAL SUBMITTALS

- A. Format for Submittals: Submit required submittals in the following format:
 - 1. Working electronic copy of schedule file, where indicated.
 - 2. PDF electronic file.
- B. Preliminary construction schedule.
 - 1. Approval of startup construction schedule will not constitute approval of schedule of values for cost-loaded activities.
- C. Submittals Schedule: Submit submittals schedule, conforming to dates on the Contractor's Construction Schedule. Include any required submittals not included on the schedule. Arrange the following information in a tabular format:
 - 1. Scheduled dates for first submittal.
 - 2. Specification Section number and title.
 - 3. Submittal category (action or informational)
 - 4. Name of subcontractor.
 - 5. Description of the Work covered.
 - 6. Scheduled date for Architect's and Owner's final release or approval.
- D. Contractor's Construction Schedule: Submit PDF for review as required to display entire schedule for entire construction period.
 - 1. Submit a working electronic copy of schedule, using software indicated, and labeled to comply with requirements for submittals. Include type of schedule (initial or updated) and date on label.
- E. CPM Reports: Concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports shall contain activity number, activity description and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.
 - 1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.
 - 2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.
 - 3. Total Float Report: List of all activities sorted in ascending order of total float.
 - a. Daily Construction Reports: Submit at weekly intervals.
- F. Material Location Reports: Submit at monthly intervals.
- G. Site Condition Reports: Submit at time of discovery of differing conditions.
- H. Special Reports: Submit at time of unusual event.
- I. Two Week Look-Ahead Schedules: Submit at weekly intervals.

1.5 QUALITY ASSURANCE

- A. Scheduling Consultant Qualifications: An experienced specialist in CPM scheduling and reporting, with capability of producing CPM reports and diagrams within 24 hours of Architect's request. This shall be a consultant to the contractor or an in-house scheduling specialist, if approved by Owner.
- B. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination" and Section 011200 "Multiple Contract Summary". Review methods and procedures related to the preliminary construction schedule and Contractor's construction schedule, including, but not limited to, the following:
 - 1. Review software limitations and content and format for reports.
 - 2. Verify availability of qualified personnel needed to develop and update schedule.
 - 3. Discuss constraints, including phasing, work stages, area separations, interim milestones, and partial Owner occupancy.
 - 4. Review delivery dates for Owner-furnished products.
 - 5. Review schedule for work of Owner's separate contracts.
 - 6. Review submittal requirements and procedures.
 - 7. Review time required for review of submittals and resubmittals.
 - 8. Review requirements for tests and inspections by independent testing and inspecting agencies.
 - 9. Review time required for Project closeout and Owner startup procedures, including commissioning activities.
 - 10. Review and finalize list of construction activities to be included in schedule.
 - 11. Review procedures for updating schedule.

1.6 COORDINATION

- A. Coordinate Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.
 - 1. Secure time commitments for performing critical elements of the Work from entities involved.
 - 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 PRODUCTS

2.1 SUBMITTAL SCHEDULE

- A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required per construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.
 - 1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.

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2. Initial Submittal: Submit within 10 business days of Notice to Proceed. Include submittals required during the first 60 calendar days of construction. List those required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's Construction Schedule. Update monthly as required.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Time Frame: Extend schedule from date established for Notice to Proceed to date of Substantial Completion .
 1. Contract completion date(s) shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- B. Activities: Treat each story or separate area as a separate numbered activity for each main element of the Work. Include the following:
 1. Activity Duration
 2. Procurement Activities
 3. Submittal Review Time
 4. Startup and Testing Time
 5. Commissioning
 6. Substantial Completion
 7. Punch List and Final Completion
- C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
 1. Phasing: Arrange list of activities on schedule by phase.
 2. Work under More Than One Contract: Include a separate activity for each contract.
 3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
 4. Products Ordered in Advance: Include a separate activity for each product. Include delivery date as provided or as indicated in Section 011200 - Multiple Contract Summary. Delivery dates indicated stipulate the earliest possible delivery date.
 5. Owner-Furnished Products: Include a separate activity for each product. Include delivery date as provided or as indicated in Section 011200 - Multiple Contract Summary. Delivery dates indicated stipulate the earliest possible delivery date.
 6. Work Restrictions: Show the effect of the following items on the schedule:
 - a. Coordination with existing construction.
 - b. Limitations of continued occupancies.
 - c. Uninterruptible services.
 - d. Partial occupancy before Substantial Completion.
 - e. Use of premises restrictions.
 - f. Provisions for future construction.
 - g. Seasonal variations.
 - h. Environmental control.
 7. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:

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- a. Subcontract awards.
 - b. Submittals.
 - c. Purchases.
 - d. Mockups.
 - e. Fabrication.
 - f. Sample testing.
 - g. Deliveries.
 - h. Installation.
 - i. Tests and inspections.
 - j. Adjusting.
 - k. Curing.
 - l. Building flush-out.
 - m. Startup and placement into final use and operation.
 - n. Commissioning
8. Construction Areas: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:
- a. Structural completion.
 - b. Temporary enclosure and space conditioning.
 - c. Permanent space enclosure.
 - d. Completion of mechanical installation.
 - e. Completion of electrical installation.
 - f. Substantial Completion.
 - g. Final Completion.
9. Other Constraints: .
- D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and final completion.
- E. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, and equipment required to achieve compliance, and date by which recovery will be accomplished.
- F. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.

2.3 PRELIMINARY CONSTRUCTION SCHEDULE

- A. Bar-Chart Schedule: Submit startup, horizontal, bar-chart-type construction schedule within calendar days of date established for Notice to Proceed .

2.4 CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)

- A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal, Gantt-chart-type, Contractor's construction schedule within 30 calendar days of date established for Notice to

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Proceed. Base schedule on the startup construction schedule and additional information received since the start of Project .

- B. Preparation: Indicate each significant construction activity separately.

2.5 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)

- A. General: Prepare network diagrams using AON (activity-on-node) format.
- B. CPM Schedule: Prepare Contractor's construction schedule using a time-scaled CPM network analysis diagram for the Work.
1. Develop network diagram in sufficient time to submit CPM schedule so it can be accepted for use no later than 30 calendar days after date established for Notice of Award .
 - a. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates.
 2. Conduct educational workshops to train and inform key Project personnel, including subcontractors' personnel, in proper methods of providing data and using CPM schedule information.
 3. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
 4. Use "one workday" as the unit of time for individual activities. Indicate nonworking days and holidays incorporated into the schedule in order to coordinate with the Contract Time.
- C. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the startup network diagram, prepare a network to identify probable critical paths.
1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:
 - a. Preparation and processing of submittals.
 - b. Mobilization and demobilization.
 - c. Purchase of materials.
 - d. Delivery.
 - e. Fabrication.
 - f. Utility interruptions.
 - g. Installation.
 - h. Work by Owner that may affect or be affected by Contractor's activities.
 - i. Startup Testing .
 - j. Punch list and final completion.
 - k. Activities occurring following final completion.
 2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.
 3. Processing: Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.

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4. Format: Mark the critical path.
 - a. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using a network fragment to demonstrate the effect of the proposed change on the overall project schedule.
 - b. Initial Issue of Schedule: Prepare initial network diagram from a sorted activity list indicating straight "early start-total float." Identify critical activities. Prepare tabulated reports showing the following:
 5. Contractor or subcontractor and the Work or activity.
 6. Description of activity.
 7. Main events of activity.
 8. Immediate preceding and succeeding activities.
 9. Early and late start dates.
 10. Early and late finish dates.
 11. Activity duration in workdays.
 12. Total float or slack time.
- D. Schedule Updating: Concurrent with making revisions to schedule, prepare tabulated reports showing the following:
1. Identification of activities that have changed.
 2. Changes in early and late start dates.
 3. Changes in early and late finish dates.
 4. Changes in activity durations in workdays.
 5. Changes in the critical path.
 6. Changes in total float or slack time.
 7. Changes in the Contract Time.

2.6 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
1. List of subcontractors at Project site.
 2. List of separate contractors at Project site.
 3. Approximate count of personnel at Project site.
 4. Equipment at Project site.
 5. Material deliveries.
 6. High and low temperatures and general weather conditions, including presence of rain or snow.
 7. Accidents.
 8. Meetings and significant decisions.
 9. Unusual events (see special reports).
 10. Stoppages, delays, shortages, and losses.
 11. Meter readings and similar recordings.
 12. Emergency procedures.
 13. Orders and requests of authorities having jurisdiction.
 14. Change Orders received and implemented.
 15. Construction Change Directives received and implemented.
 16. Services connected and disconnected.

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17. Equipment or system tests, commissioning, and startups.
 18. Partial completions and occupancies.
 19. Substantial Completions authorized.
 20. Locations of Work.
- B. Material Location Reports: At monthly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site. Indicate the following categories for stored materials:
1. Material stored prior to previous report and remaining in storage.
 2. Material stored prior to previous report and since removed from storage and installed.
 3. Material stored following previous report and remaining in storage.
- C. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

2.7 SPECIAL REPORTS

- A. General: Submit special reports directly to Owner within one day of an occurrence. Distribute copies of report to parties affected by the occurrence.
- B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.
- C. Two Week Look-Ahead Schedules: Contractor will submit a 2 week look-ahead schedule each week on a specific day of the week to be determined at the Preconstruction meeting. Each schedule will show specific work activities over that 2 week period and also areas of coordination required with other contractors and involved entities. These schedules will also show delivery dates of critical material or equipment items.
1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.

PART 3 EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Scheduling Consultant: If necessary, Contractor shall engage and pay for a consultant to provide planning, evaluation, and reporting using CPM scheduling.
1. In-House Option: Owner may waive the requirement to retain a consultant if Contractor demonstrates they employ skilled personnel with experience in CPM scheduling and reporting techniques. Submit qualifications.

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2. Meetings: Scheduling consultant shall attend all meetings related to Project progress, alleged delays, and time impact.
- B. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
 2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
 3. As the Work progresses, indicate final completion percentage for each activity.
- C. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Owner with a need-to-know schedule responsibility.
1. Post copies in Project meeting rooms and temporary field offices.
 2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples and other submittals.

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information, and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information, and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."
- C. File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.
- D. Portable Document Format (PDF): An open standard for electronic documents, licensed by Adobe Systems, used for representing documents in a device-independent and display resolution-independent fixed-layout document format.
- E. Cloud-Based Construction Management Software Application (CMSA): Any of a number of proprietary file management collaborative systems intended for internet-connected device use. The intent of these applications is to enable dispersed users access to shared documents for storage, organization, retrieval, editing, tracking, reporting or other functions, with such access usually controlled by invitation and security protocols. More than one such application type or specific programs may be used, depending on Owner preferences.
 - 1. Owner's preferred CMSA:.
 - 2. Project preferred CMSA: Procore

1.4 SUBMITTAL PROCEDURES

- A. Architect's Digital Data Files: Electronic digital data files of the Contract Drawings will be provided by Architect for Contractor's use in preparing submittals.
 - 1. Architect will furnish Contractor one set of digital data drawing files of the Contract Drawings for use in preparing Shop Drawings and Project Record Drawings.
 - a. Architect 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.
 - c. Contractor shall execute a data licensing agreement in the form included in Project Manual.
 - 1) To request electronic files, complete "Request Form for Electronic Files".
 - 2) Include "Processing Fee" in amount as indicated on the request form.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
 - 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
 - 4. Coordinate transmittal of 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. Architect reserve(s) the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence upon Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
 - 1. Initial Review: Allow 10 business days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 - 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 - 3. Resubmittal Review: Allow 10 business days for review of each resubmittal.
 - 4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 10 additional business days for initial review of each submittal.
 - 5. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Architect's consultants, allow 10 business days for review of each submittal. Submittal will be returned to Architect before being returned to Contractor.
 - 6. Transmittal for Sample Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal

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form. Architect will return without review or discard submittals received from sources other than Contractor. Transmit each submittal using the transmittal form at the end of this section.

D. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:

1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
2. Name file with submittal number or other unique identifier, including revision identifier.
 - a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).
3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect .
4. Transmittal Form for Electronic Submittals: Use Software-generated from electronic project management software or electronic form acceptable to Owner and Architect, containing the following information:
 - a. Project name.
 - b. Date.
 - c. Name and address of Architect.
 - d. Name of Construction Manager.
 - e. Name of Contractor.
 - f. Name of firm or entity that prepared submittal.
 - g. Names of subcontractor, manufacturer, and supplier.
 - h. Category and type of submittal.
 - i. Submittal purpose and description.
 - j. Specification Section number and title.
 - k. Specification paragraph number or drawing designation and generic name for each of multiple items.
 - l. Drawing number and detail references, as appropriate.
 - m. Location(s) where product is to be installed, as appropriate.
 - n. Related physical samples submitted directly.
 - o. Indication of full or partial submittal.
 - p. Transmittal number, numbered consecutively.
 - q. Submittal and transmittal distribution record.
 - r. Other necessary identification.
 - s. Remarks.
5. Metadata: Include the following information as keywords in the electronic submittal file metadata:
 - a. Project name.
 - b. Number and title of appropriate Specification Section.
 - c. Manufacturer name.
 - d. Product name.

E. Options: Identify options requiring selection by Architect.

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- F. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.
- G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
 - 1. Note date and content of previous submittal.
 - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 - 3. Resubmit submittals until they are marked with approval notation from Architect's action stamp[s].
- H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, and installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- I. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp[s].

PART 2 PRODUCTS

2.1 ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 - 1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
 - 2. Mark each copy of each submittal to show which products and options are applicable.
 - 3. Include the following information, as applicable:
 - a. Manufacturer's written recommendations.
 - b. Manufacturer's product specifications.
 - c. Color charts showing full range of available colors.
 - d. Manufacturer catalog cuts.
 - e. Wiring diagrams showing factory-installed wiring.
 - f. Printed performance curves.
 - g. Operational range diagrams.
 - h. Mill reports.
 - i. Standard product operating and maintenance manuals.
 - j. Compliance with recognized trade association standards.
 - k. Compliance with recognized testing agency standards.
 - l. Application of testing agency labels and seals.
 - m. Notation of coordination requirements.
 - 4. For equipment, include the following in addition to the above, as applicable:
 - a. Wiring diagrams showing factory-installed wiring.

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- b. Printed performance curves.
 - c. Operational range diagrams.
 - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
 - 1. Preparation: Include the following information, as applicable:
 - a. Dimensions.
 - b. Identification of products.
 - c. Fabrication and installation drawings.
 - d. Roughing-in and setting diagrams.
 - e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
 - f. Shop work manufacturing instructions.
 - g. Templates and patterns.
 - h. Schedules.
 - i. Design calculations.
 - j. Compliance with specified standards.
 - k. Notation of coordination requirements.
 - l. Notation of dimensions established by field measurement.
 - 2. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
 - 3. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm) but no larger than sheet size used for Contract Document Drawings.
 - 4. Number of Copies: Submit two black-line prints and one electronic file copy of each submittal. Architect will return the one print marked with action taken to the Contractor for distribution. Contractor shall make necessary copies from the returned print.
- D. Samples: Prepare physical units of materials or products, including the following:
 - 1. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - 2. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from the same material to be used for the Work, cured and finished in manner specified, and physically identical with the product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 - 3. Preparation: Mount, display, or package Samples in manner specified to facilitate review of qualities indicated. Prepare Samples to match Architect's sample where so indicated. Attach label on unexposed side that includes the following:
 - a. Generic description of Sample.
 - b. Product name or name of manufacturer.
 - c. Sample source.

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4. Submit Samples for review of kind, color, pattern, and texture for a final check of these characteristics with other elements and for a comparison of these characteristics between final submittal and actual component as delivered and installed.
 - a. If variation in color, pattern, texture, or other characteristic is inherent in the product represented by a Sample, submit at least three sets of paired units that show approximate limits of the variations.
 - b. Refer to individual Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, and details of assembly, connections, operation, and similar construction characteristics.
 5. Number of Samples for Initial Selection: Submit two full sets of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return one submittal with options selected.
 6. Number of Samples for Verification: Submit two full sets of Samples. Architect will retain one Sample set; remainder will be returned marked with action taken to the Contractor for distribution.
 - a. Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
 7. Disposition: Contractor to maintain one set of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
- E. Submittals requiring compliance with other sections in the Project Manual.
1. Contractor's Construction Schedule.
 2. Submittals Schedule.
 3. Application for Payment.
 4. Schedule of Values.
 5. Subcontract List.

2.2 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by individual Specification Sections and elsewhere in the Contract Documents.
1. Number of Copies: Submit two copies of each submittal, unless otherwise indicated. Architect will not return copies, unless they are rejected for noncompliance with the Contract Documents.
 2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 3. Test and Inspection Reports: Comply with requirements in Division 1 Section "Quality Requirements."

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- B. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- C. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements.
- D. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.
- E. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements and, where required, is authorized for this specific Project.
- F. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements. Include evidence of manufacturing experience where required.
- G. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements.
- H. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.
- I. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements.
- J. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- K. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements.
- L. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- M. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
 - 1. Name of evaluation organization.
 - 2. Date of evaluation.

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3. Time period when report is in effect.
 4. Product and manufacturers' names.
 5. Description of product.
 6. Test procedures and results.
 7. Limitations of use.
- N. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment.
- O. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
- P. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
1. Preparation of substrates.
 2. Required substrate tolerances.
 3. Sequence of installation or erection.
 4. Required installation tolerances.
 5. Required adjustments.
 6. Recommendations for cleaning and protection.
- Q. Manufacturers Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
1. Name, address, and telephone number of factory-authorized service representative making report.
 2. Statement on condition of substrates and their acceptability for installation of product.
 3. Statement that products at Project site comply with requirements.
 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 6. Statement whether conditions, products, and installation will affect warranty.
 7. Other required items indicated in individual Specification Sections.
- R. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.
- S. Material Safety Data Sheets: Keep on site and submit information directly to Owner. If submitted to Architect, Architect will not review this information but will return it with no action taken.

2.3 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF file of certificate, signed and sealed by the responsible design professional licensed in the jurisdiction of the Project for each product, assembly or system specifically assigned to Contractor to be designed or certified by a design professional.
 - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads and other factors used in performing these services.

PART 3 EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect .
- B. Project Closeout and Maintenance Material Submittals: See requirements in Section 017700 "Closeout Procedures."
- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

- A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:
 - 1. Architect's Action:
 - a. Final Unrestricted Release: When the Architect marks a submittal "No Exceptions Taken" the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents. Final payment depends on that compliance.

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- b. Final-But-Restricted Release: When the Architect marks a submittal “Provide as Corrected,” the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents. Final payment depends on that compliance.
 - c. Returned for Resubmittal: When the Architect marks a submittal “Revise and Resubmit,” do not proceed with Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal according to the notations; resubmit without delay.
 - 1) Do not use, or allow others to use, submittals marked “Revise and Resubmit” at the Project Site or elsewhere where Work is in progress.
 - d. Returned for Resubmittal: When the Architect marks a submittal “Rejected”, the Architect has not completed a full review, because it is clear that the submittal does not reflect the requirements of the Contract Documents. Do not proceed with work covered by the submittal, including purchasing, fabrication, delivery or other activity. Revise or prepare a new submittal that complies with the Contract Documents.
 - e. Other Action: If the submittal is primarily for information purposes, record purposes, special processing, or other contractor activity, the submittal will be returned marked “Reviewed for General Conformance Only”. These submittals have been received and processed for information only and not approved or disapproved by the architect.
- C. Informational Submittals: Architect will review each submittal and will not return it, or will reject and return it if it does not comply with Contract Document requirements.
- D. Submittals not required by the Contract Documents will not be reviewed and will be discarded or returned without action.

END OF SECTION



Submittal No. _____

Submittal Transmittal

PROJECT: _____ PROJECT #: _____

OWNER: _____ A/E: _____

CONTRACT # & NAME _____

CONTRACTOR: _____
(NAME, ADDRESS, TELEPHONE & FAX NUMBERS)

☐ NEW SUBMITTAL ☐ RESUBMITTAL

Date: _____

This submittal is: ☐ AS SPECIFIED REMARKS: _____

NUMBER OF COPIES SUBMITTED: (8 maximum) _____

TYPE OF SUBMITTAL: **(CHECK ALL THAT APPLY)**

☐ PRODUCT DATA/CATALOG CUT	☐ SAMPLE	☐ COLOR SELECTION
☐ SHOP DRAWINGS	☐ SCHEDULE	☐ WARRANTY
☐ TEST REPORT	☐ RECORD DOCUMENT	☐ PERFORMANCE DATA
☐ OPERATIONS & MAINTENANCE DATA	☐ OTHER _____	

SPEC. SECTION: _____ PARAGRAPH(S): _____ DWG. REF. NO.: _____	CONTRACTOR CERTIFICATION CONTRACTOR CERTIFIES THAT THE INFORMATION SUBMITTED COMPLIES WITH THE CONTRACT DOCUMENT REQUIREMENTS. By: _____ Date: _____ NOTE: Contractor shall apply an approval stamp to each copy of each submittal.

DESCRIPTION OF SUBMITTAL: _____

PRODUCT NAME: _____

MANUFACTURER: _____

ADDRESS: _____ TEL. NO.: _____

CONTRACTOR or SUBCONTRACTOR: _____ TEL. NO.: _____

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SUPPLIER: _____

TEL. NO.: _____

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and -control services required by Architect and Owner or authorities having jurisdiction are not limited by provisions of this Section.
 - 4. Specific test and inspection requirements are not specified in this Section.

1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Construction Manager.
- C. Mockups: Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.

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- D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.
- E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- F. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.
- G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
- J. Experienced: Unless otherwise indicated in individual Specification sections, when used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

- A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.5 INFORMATIONAL SUBMITTALS

- A. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

- B. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
 - 1. Specification Section number and title.
 - 2. Entity responsible for performing tests and inspections.
 - 3. Description of test and inspection.
 - 4. Identification of applicable standards.
 - 5. Identification of test and inspection methods.
 - 6. Number of tests and inspections required.
 - 7. Time schedule or time span for tests and inspections.
 - 8. Requirements for obtaining samples.
 - 9. Unique characteristics of each quality-control service.

1.6 CONTRACTOR'S QUALITY-CONTROL PLAN

- A. Quality-Control Plan, General: Submit quality-control plan within 14 calendar days of Notice to Proceed, and not less than seven calendar days prior to preconstruction conference. Submit in format acceptable to Architect. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's construction schedule.
- B. Quality-Control Personnel Qualifications: Engage qualified full-time personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.
 - 1. Project quality-control manager may also serve as Project superintendent.
- C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.
- D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:
 - 1. Contractor-performed tests and inspections including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections.
 - 2. Special inspections required by authorities having jurisdiction and indicated on the "Statement of Special Inspections." Refer to Section 014100 "Special Inspections and Structural Testing".
- E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.
- F. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Architect has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.7 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
 - 1. Date of issue.
 - 2. Project title and number.
 - 3. Name, address, and telephone number of testing agency.
 - 4. Dates and locations of samples and tests or inspections.
 - 5. Names of individuals making tests and inspections.
 - 6. Description of the Work and test and inspection method.
 - 7. Identification of product and Specification Section.
 - 8. Complete test or inspection data.
 - 9. Test and inspection results and an interpretation of test results.
 - 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
 - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 - 12. Name and signature of laboratory inspector.
 - 13. Recommendations on retesting and reinspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
 - 1. Name, address, and telephone number of technical representative making report.
 - 2. Statement on condition of substrates and their acceptability for installation of product.
 - 3. Statement that products at Project site comply with requirements.
 - 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 - 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 - 6. Statement whether conditions, products, and installation will affect warranty.
 - 7. Other required items indicated in individual Specification Sections.
- C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
 - 1. Name, address, and telephone number of factory-authorized service representative making report.
 - 2. Statement that equipment complies with requirements.
 - 3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 - 4. Statement whether conditions, products, and installation will affect warranty.
 - 5. Other required items indicated in individual Specification Sections.
- D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for

compliance with standards and regulations bearing on performance of the Work.

1.8 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.
- F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
 - 1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
 - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
 - 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

- J. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
1. Contractor responsibilities include the following:
 - a. Provide test specimens representative of proposed products and construction.
 - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
 - d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
 - e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
 - f. When testing is complete, remove test specimens, assemblies, and mockups[, and laboratory mockups]; do not reuse products on Project.
 2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect and Commissioning Authority, if applicable[, through Construction Manager], with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

1.9 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
 2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
 4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.

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6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections.
- D. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- E. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- F. Testing Agency Responsibilities: Cooperate with Architect and Owner's Representative and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
 1. Notify Architect and Owner's representative and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform any duties of Contractor.
- G. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
 1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Delivery of samples to testing agencies.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and

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replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

- I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses.

1. Distribution: Distribute schedule to Owner, Architect and Owner's Representative testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.10 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Refer to Specification Section 014533 - Code-Required Special Inspections and Procedures.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:
 1. Date test or inspection was conducted.
 2. Description of the Work tested or inspected.
 3. Date test or inspection results were transmitted to Architect.
 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect reference during normal working hours.

3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
 1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 017300 "Execution."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION

SECTION 014200 - REFERENCES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Architect, Owner, or Owner's Representative. Other terms including "requested," "authorized," "selected," "approved," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.
- J. "Installer": Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively

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to tradespeople of the corresponding generic name.

- K. "Experienced": When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.3 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
 - 1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.4 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States."
- B. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities.
- C. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities.
- D. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations.
- E. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 014533 - CODE-REQUIRED SPECIAL INSPECTIONS AND PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Code-required special inspections.
- B. Testing services incidental to special inspections.
- C. Submittals.

1.2 RELATED REQUIREMENTS

- A. Section 014000 - Quality Requirements.

1.3 ABBREVIATIONS AND ACRONYMS

- A. AHJ: Authority having jurisdiction.
- B. NIST: National Institute of Standards and Technology.

1.4 DEFINITIONS

- A. Code or Building Code: ICC (IBC)-2018, Edition of the International Building Code and specifically, Chapter 17 - Special Inspections and Tests.
- B. Authority Having Jurisdiction (AHJ): Agency or individual officially empowered to enforce the building, fire and life safety code requirements of the permitting jurisdiction in which the Project is located.
- C. Special Inspection:
 - 1. Special inspections are inspections and testing of materials, installation, fabrication, erection or placement of components and connections mandated by the AHJ that also require special expertise to ensure compliance with the approved Contract Documents and the referenced standards.
 - 2. Special inspections are separate from and independent of tests and inspections conducted by Owner or Contractor for the purposes of quality assurance and contract administration.

1.5 REFERENCE STANDARDS

- A. ACI CODE-318 - Building Code Requirements for Structural Concrete and Commentary; 2019 (Reapproved 2022).
- B. AISC 360 - Specification for Structural Steel Buildings; 2022, with Errata (2023).

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- C. ASTM C31/C31M - Standard Practice for Making and Curing Concrete Test Specimens in the Field; 2024.
- D. ASTM C172/C172M - Standard Practice for Sampling Freshly Mixed Concrete; 2017.
- E. ASTM D3740 - Standard Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction; 2023.
- F. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection; 2023.
- G. ASTM E543 - Standard Specification for Agencies Performing Nondestructive Testing; 2021.
- H. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2020, with Errata (2023).
- I. AWS D1.3/D1.3M - Structural Welding Code - Sheet Steel; 2018, with Errata (2022).
- J. ICC (IBC)-2018 - International Building Code; 2018.
- K. SDI (QA/QC) - Standard for Quality Control and Quality Assurance for Installation of Steel Deck; 2017.
- L. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures; 2022, with Errata (2024).

1.6 SUBMITTALS

- A. Special Inspection Agency Qualifications: Prior to the start of work, the Special Inspection Agency is required to:
 - 1. Submit agency name, address, and telephone number, names of full time registered Engineer and responsible officer.
 - 2. Submit copy of report of laboratory facilities inspection made by NIST Construction Materials Reference Laboratory during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.
 - 3. Submit certification that Special Inspection Agency is acceptable to AHJ.
- B. Testing Agency Qualifications: Prior to the start of work, the Testing Agency is required to:
 - 1. Submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.
 - 2. Submit copy of report of laboratory facilities inspection made by NIST Construction Materials Reference Laboratory during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.
 - 3. Submit certification that Testing Agency is acceptable to AHJ.
- C. Special Inspection Reports: After each special inspection, Special Inspector is required to promptly submit at least two copies of report; one to Architect and one to the AHJ.
 - 1. Include:
 - a. Date issued.
 - b. Project title and number.
 - c. Name of Special Inspector.

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- d. Date and time of special inspection.
 - e. Identification of product and specifications section.
 - f. Location in the Project.
 - g. Type of special inspection.
 - h. Date of special inspection.
 - i. Results of special inspection.
 - j. Compliance with Contract Documents.
2. Final Special Inspection Report: Document special inspections and correction of discrepancies prior to the start of the work.

1.7 SPECIAL INSPECTION AGENCY

- A. Owner will employ services of a Special Inspection Agency to perform inspections and associated testing and sampling in accordance with ASTM E329 and required by the building code.
- B. The Special Inspection Agency may employ and pay for services of an independent testing agency to perform testing and sampling associated with special inspections and required by the building code.
- C. Employment of agency in no way relieves Contractor of obligation to perform work in accordance with requirements of Contract Documents.

1.8 TESTING AND INSPECTION AGENCIES

- A. Owner may employ services of an independent testing agency to perform additional testing and sampling associated with special inspections but not required by the building code.
- B. Employment of agency in no way relieves Contractor of obligation to perform work in accordance with requirements of Contract Documents.

1.9 QUALITY ASSURANCE

- A. Special Inspection Agency Qualifications:
 - 1. Independent firm specializing in performing testing and inspections of the type specified in this section.
- B. Testing Agency Qualifications:
 - 1. Independent firm specializing in performing testing and inspections of the type specified in this section.
- C. Copies of Documents at Project Site: Maintain at the project site a copy of each referenced document.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 SCHEDULE OF SPECIAL INSPECTIONS, GENERAL

- A. Frequency of Special Inspections: Special Inspections are indicated as continuous or periodic.
 - 1. Continuous Special Inspection: Special Inspection Agency is required to be present in the area where the work is being performed and observe the work at all times the work is in progress.
 - 2. Periodic Special Inspection: Special Inspection Agency is required to be present in the area where work is being performed and observe the work part-time or intermittently and at the completion of the work.

3.2 SPECIAL INSPECTIONS FOR STEEL CONSTRUCTION

- A. Structural Steel: Comply with quality assurance inspection requirements of ICC (IBC)-2018.
- B. Cold-Formed Steel Deck: Comply with quality assurance inspection requirements of SDI (QA/QC).
- C. High-Strength Bolt, Nut and Washer Material:
 - 1. Verify identification markings comply with ASTM standards specified in the approved contract and to AISC 360, Section A3.3; periodic.
 - 2. Submit manufacturer's certificates of compliance; periodic.
- D. High-Strength Bolting Installation: Verify items listed below comply with AISC 360, Section M2.5.
 - 1. Snug tight joints; periodic.
 - 2. Pretensioned and slip-critical joints with matchmarking, twist-off bolt or direct tension indicator method of installation; periodic.
 - 3. Pretensioned and slip-critical joints without matchmarking or calibrated wrench method of installation; continuous.
- E. Structural Steel and Cold Formed Steel Deck Material:
 - 1. Structural Steel: Verify identification markings comply with AISC 360, Section M3.5; periodic.
 - 2. Other Steel: Verify identification markings comply with ASTM standards specified in the approved Contract Documents; periodic.
 - 3. Submit manufacturer's certificates of compliance and test reports; periodic.
- F. Weld Filler Material:
 - 1. Verify identification markings comply with AWS standards specified in the approved Contract Documents and to AISC 360, Section A3.5; periodic.
 - 2. Submit manufacturer's certificates of compliance; periodic.
- G. Welding:

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1. Structural Steel and Cold Formed Steel Deck:
 - a. Complete and Partial Joint Penetration Groove Welds: Verify compliance with AWS D1.1/D1.1M; continuous.
 - b. Multipass Fillet Welds: Verify compliance with AWS D1.1/D1.1M; continuous.
 - c. Single Pass Fillet Welds Less than 5/16 inch Wide: Verify compliance with AWS D1.1/D1.1M; periodic.
 - d. Plug and Slot Welds: Verify compliance with AWS D1.1/D1.1M; continuous.
 - e. Single Pass Fillet Welds 5/16 inch or Greater: Verify compliance with AWS D1.1/D1.1M; continuous.
 - f. Floor and Roof Deck Welds: Verify compliance with AWS D1.3/D1.3M; continuous.
 - H. Steel Frame Joint Details: Verify compliance with approved Contract Documents.
 1. Details, bracing and stiffening; periodic.
 2. Member locations; periodic.
 3. Application of joint details at each connection; periodic.
- 3.3 SPECIAL INSPECTIONS FOR CONCRETE CONSTRUCTION
- A. Reinforcement, Including Prestressing Tendons, and Verification of Placement: Verify compliance with ACI CODE-318, Chapters 20, 25.2, 25.3, 26.6.1-26.6.3; periodic.
 - B. Anchors Cast in Concrete: Verify compliance with ACI CODE-318; periodic.
 - C. Bolts Installed in Concrete: Where allowable loads have been increased or where strength design is used, verify compliance with approved Contract Documents and ACI CODE-318, Sections 8.1.3 and 21.2.8 prior to and during placement of concrete; continuous.
 - D. Anchors Post-Installed in Hardened Concrete: Verify compliance with ACI CODE-318.
 1. Adhesive Anchors: Verify horizontally or upwardly-inclined orientation installations resisting sustained tension loads - Section 17.8.2.4; continuous.
 2. Other Mechanical and Adhesive Anchors: Verify as per Chapter 17.8.2; periodic.
 - E. Design Mix: Verify plastic concrete complies with the design mix in approved Contract Documents and with ACI 318, Chapter 19, 26.4.3, 26.4.4; periodic.
 - F. Concrete Sampling Concurrent with Strength Test Sampling: Each time fresh concrete is sampled for strength tests, verify compliance with ASTM C172/C172M, ASTM C31/C31M, and ACI CODE-318, Chapter 26.5, 26.12, and record the following, continuous:
 1. Slump.
 2. Air content.
 3. Temperature of concrete.
 - G. Specified Curing Temperature and Techniques: Verify compliance with ACI CODE-318, Chapter 26.5.3 through 26.5.5; periodic.
 - H. Materials: If the Contractor cannot provide sufficient data or documentary evidence that concrete materials comply with the quality standards of ACI CODE-318, the AHJ will require testing of materials in accordance with the appropriate standards and criteria in ACI CODE-318,

3.4 SPECIAL INSPECTIONS FOR MASONRY CONSTRUCTION

- A. Masonry Structures Subject to Special Inspection:
 - 1. Masonry construction when required by the quality assurance program of TMS 402/602.
 - 2. Engineered masonry in structures classified as "low hazard..." and "substantial hazard to human life in the event of failure".
- B. Verify each item below complies with approved Contract Documents and the applicable articles of TMS 402/602.
 - 1. Inspections and Approvals:
 - a. Verify compliance with the required inspection provisions of the approved Contract Documents; periodic.
 - b. Verify approval of submittals required by Contract Documents; periodic.
 - 2. Compressive Strength of Masonry: Verify compressive strength of masonry units prior to start of construction unless specifically exempted by code; periodic.
 - 3. Slump Flow and Visual Stability Index (VSI): Verify compliance as self consolidating grout arrives on site; continuous.
 - 4. Joints and Accessories: When masonry construction begins, verify:
 - a. Proportions of site prepared mortar; periodic.
 - b. Construction of mortar joints; periodic.
 - c. Location of reinforcement, connectors, prestressing tendons, anchorages, etc; periodic.
 - 5. Structural Elements, Joints, Anchors, Protection: During masonry construction, verify:
 - a. Size and location of structural elements; periodic.
 - b. Type, size and location of anchors, including anchorage of masonry to structural members, frames or other construction; periodic.
 - c. Size, grade and type of reinforcement, anchor bolts and prestressing tendons and anchorages; periodic.
 - d. Welding of reinforcing bars; continuous.
 - 6. Grouting Preparation: Prior to grouting, verify:
 - a. Grout space is clean; periodic.
 - b. Correct placement of reinforcing, connectors, prestressing tendons and anchorages; periodic.
 - c. Correctly proportioned site prepared grouts and prestressing grout for bonded tendons; periodic.
 - d. Correctly constructed mortar joints; periodic.
 - 7. Preparation of Grout Specimens, Mortar Specimens and Prisms: Observe preparation of specimens; periodic.

3.5 SPECIAL INSPECTIONS FOR SOILS

- A. Materials and Placement: Verify each item below complies with approved construction documents and approved geotechnical report.
 - 1. Design bearing capacity of material below shallow foundations; periodic.

2. Design depth of excavations and suitability of material at bottom of excavations; periodic.
3. Materials, densities, lift thicknesses; placement and compaction of backfill: continuous.
4. Subgrade, prior to placement of compacted fill verify proper preparation; periodic.

B. Testing: Classify and test excavated material; periodic.

3.6 SPECIAL INSPECTION AGENCY DUTIES AND RESPONSIBILITIES

A. Special Inspection Agency shall:

1. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
2. Perform specified sampling and testing of products in accordance with specified reference standards.
3. Ascertain compliance of materials and products with requirements of Contract Documents.
4. Promptly notify Architect and Contractor of observed irregularities or non-compliance of work or products.
5. Perform additional tests and inspections required by Architect.
6. Attend preconstruction meetings and progress meetings.
7. Submit reports of all tests or inspections specified.

B. Limits on Special Inspection Agency Authority:

1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
2. Agency may not approve or accept any portion of the work.
3. Agency may not assume any duties of Contractor.
4. Agency has no authority to stop the work.

C. Re-testing required because of non-compliance with specified requirements shall be performed by the same agency on instructions by Architect.

D. Re-testing required because of non-compliance with specified requirements shall be paid for by Contractor.

3.7 TESTING AGENCY DUTIES AND RESPONSIBILITIES

A. Testing Agency Duties:

1. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
2. Perform specified sampling and testing of products in accordance with specified standards.
3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
4. Promptly notify Architect and Contractor of observed irregularities or non-compliance of work or products.
5. Perform additional tests and inspections required by Architect.
6. Submit reports of all tests or inspections specified.

- B. Limits on Testing or Inspection Agency Authority:
 - 1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 - 2. Agency may not approve or accept any portion of the work.
 - 3. Agency may not assume any duties of Contractor.
 - 4. Agency has no authority to stop the work.
- C. On instructions by Architect, perform re-testing required because of non-compliance with specified requirements, using the same agency.
- D. Contractor will pay for re-testing required because of non-compliance with specified requirements.

3.8 CONTRACTOR DUTIES AND RESPONSIBILITIES

- A. Contractor Responsibilities, General:
 - 1. Deliver to agency at designated location, adequate samples of materials for special inspections that require material verification.
 - 2. Cooperate with agency and laboratory personnel; provide access to approved documents at project site, to the work, to manufacturers' facilities, and to fabricators' facilities.
 - 3. Provide incidental labor and facilities:
 - a. To provide access to work to be tested or inspected.
 - b. To obtain and handle samples at the site or at source of Products to be tested or inspected.
 - c. To facilitate tests or inspections.
 - d. To provide storage and curing of test samples.
 - 4. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing or inspection services.
 - 5. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
 - 6. Retain special inspection records.

END OF SECTION

SECTION 015000.1 - TEMPORARY FACILITIES AND CONTROLS - MULTI PRIME

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

1.3 USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum for each Prime Contract, unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to Architect, Owner, Construction Manager, testing agencies, and authorities having jurisdiction.
- B. Any Prime Contractor's cost of, or for establishing their own temporary services or facilities will not be accepted as basis of claim for an adjustment in Contract Sum or Contract Time. Charges for establishing temporary utility service must be borne by the Contractor receiving the service.
- C. Each Prime Contractor is responsible for power associated with temporary field office and storage units including installation, hook-ups, and consumption and use charges.

1.4 INFORMATIONAL SUBMITTALS

- A. Site Plan: Contract No.01 (Site/Utility) shall show temporary facilities, utility hookups, traffic control, staging areas, and designated parking areas for construction personnel.
- B. Erosion- and Sedimentation-Control Plan: Contract No.01 (Site/Utility) shall show compliance with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.
- C. Fire-Safety Program: Each Contractor shall show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.
- D. Moisture-Protection Plan: Each Contractor shall describe procedures and controls for protecting materials and construction from water absorption and damage.
 - 1. Describe delivery, handling, and storage provisions for materials subject to water absorption or water damage.

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2. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.
3. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.

1.5 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
- C. Accessible Temporary Egress: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines, ICC/ANSI A117.1, and local jurisdictional requirements, whichever is more stringent.

1.6 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Chain-Link Fencing: Minimum 2-inch, 0.148-inch-thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch-OD line posts and 2-7/8-inch- OD corner and pull posts, with 1-5/8-inch- OD top rails and all associated ancillary items to supply a complete and fully function system including but not limited to fence post bases and sandbags.
- B. Polyethylene Sheet: Reinforced, fire-resistive sheet, 10-mil minimum thickness, with flame-spread rating of 15 or less per ASTM E 84 and passing NFPA 701 Test Method 2.

PART 3 EXECUTION

3.1 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 ASSIGNMENT OF GENERAL AND SPECIFIC TEMPORARY FACILITIES

- A. Providing temporary facilities includes, but is not limited to, providing, furnishing, installing, supplying, maintaining, altering, repairing, relocating, dismantling, and removing such facilities.
- B. Each Prime Contractor is responsible for providing all necessary and incidental labor, equipment and materials to complete the following work:
 - 1. Installation, operation, maintenance, and removal of its own temporary facilities.
 - 2. Its own field office. Location to be coordinated with Construction Manager.
 - 3. Storage and Fabrication Containers: Provide mobile storage and fabrication trailers, sized, furnished, and equipped to accommodate materials and equipment involved, including temporary utility service. Location to be coordinated with Construction Manager.
 - 4. Secure lockup of its own tools, materials, and equipment.
 - 5. Electric for power distribution from temporary electrical service to office and storage trailers. Each Prime Contractor shall be responsible for their own cost to connect trailers and storage units to temporary electrical and other utilities.
 - 6. Make provisions for temporary electric service for its own work until Contract No.2 (Electrical) has established project temporary electrical services.
 - 7. Contract No.1 (Site/Utility) shall be responsible for coordinating with the local utilities and providing a temporary water service for use during construction by other Contractors.
 - 8. Each Prime Contractor requiring temporary water shall, at their own expense, provide hoses, containers and other devices required to deliver water to the point of that Contractor's work.
 - 9. Any water damage to work of others shall be the sole responsibility of the Prime Contractor utilizing the water and not the Owner. Repair of water damaged work will be the responsibility of the Prime Contractor causing the damage.
 - 10. Provide its own drinking water including potable water containers, dispensers, cups, and waste receptacle as required for their employee's use.
 - 11. First Aid Supplies include supplies and PPE required as per the current regulations set forth pertaining to the COVID-19 Pandemic.
 - 12. Construction aids and miscellaneous services and facilities necessary exclusively for its own construction activities.
 - 13. Survey and Stake Out for its own construction activities.
 - 14. Dewatering of excavations performed under their contract.
 - a. Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
 - 1) Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
 - 2) Remove snow and ice as required to minimize accumulations.
 - 15. Temporary heat, ventilation and humidity control, and enclosure of the building where these facilities are necessary to its own construction activity prior to building being fully

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- enclosed/weather tight and temporary heating system operational.
16. Provide task lighting, and special lighting necessary exclusively for its own activities.
 17. Any Prime Contractor requiring higher intensity power or lighting than the minimum provided by Contract No.2 (Electrical) in order to complete their work shall be provided by the Prime Contractor requiring the additional power and lighting at no cost to the Owner. It is each Prime Contractor's responsibility to provide all necessary lights and power sources to complete work unless otherwise noted.
 18. Each Prime Contractor shall provide its own hoisting of materials and equipment. Each Prime Contractor shall provide facilities for hoisting materials and employees. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
 19. Material and equipment hoists shall meet any and all requirements of law, rule, or regulation.
 20. Electrically operated hoists shall not be used.
 21. Each Prime Contractor shall provide its own temporary stairs, ladders, and scaffolding required for the performance of their work.
 22. Each Prime Contractor shall provide its own clean-up of their debris to dumpsters on a daily basis or as directed by the Owner or Construction Manager. Upon failure to so maintain a clean work area, the Owner or Construction Manager shall cause clean-up to be performed by others at the expense of the Prime Contractor(s) failing to so clean. Upon completion of work in an area, the Prime Contractor shall leave the area in a broom-clean condition. Upon failure to broom clean within 24 hours of Owner's or Construction Manager's written directive, the Owner or Construction Manager shall cause said clean-up to be performed by others at the expense of the Prime Contractor(s) failing to clean.
 23. All labor, material, and equipment necessary to provide and maintain suitable access roads and pads for use of cranes and tractor trailers.
 24. Each Prime Contractor shall provide for the collection and disposal of its own hazardous, regulated, dangerous, unsanitary, or other harmful waste material.
 25. Each Prime Contractor shall provide its own temporary weather and watertight, security and safety protection at any opening that they create which penetrates the exterior walls and/or roof of the building.
 26. Each Prime Contractor is responsible for providing power for their welding equipment. At no time during the construction is welding equipment to be powered by the temporary electric provided by Contract No.2 (Electrical).
 27. Temporary electrical services shall not be provided for the operation of, but not limited to, electric welders, heaters, masonry mixing equipment, hoisting equipment or similar equipment with high power demands. Any contractor requiring special power requirements shall coordinate with Contract No.13 (Electrical) and pay for this metered service directly or provide stand-alone generator. This provision shall occur at no cost to the Owner.
 28. The use of gasoline or kerosene-burning space heaters or open flame/salamander type heating units is prohibited.
 29. All Prime Contractors shall load containers to maximize the volume of material that the containers will hold. No hazardous materials shall be deposited in the dumpsters. Contract No.01 (General Trades/Multi-Scope) shall properly remove filled containers, provide empty containers, relocate containers which interfere with the progress of the work, and pay all associated costs

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30. All rubbish shall be lowered by way of chutes, taken down by hoists, or lowered in receptacles. Under no circumstances shall any rubbish be dropped or thrown from one (1) level to another inside or outside any building
31. Each Prime Contractor will comply with the safety provisions of the National Fire Protection Association's "National Fire Codes" pertaining to the work and, particularly, in connection with any cutting or welding performed as part of the work.
32. All Prime Contractors are responsible for securing their individual portable offices, storage units, materials, tools, and equipment. All Prime Contractors are required to make every effort to close and otherwise secure work areas at the end of each work shift. Each Prime Contractors is responsible for thefts, damage to their work and replacement of damaged work that cannot be restored to its original condition. The Owner retains the exclusive right to accept or reject repair work.
33. Except as otherwise expressly provided in the Contract, within 20 days of Notice to Proceed each Prime Contractor shall submit to The Construction Manager for approval a proposed schedule of all utility shutdowns and cutovers of all types which may be required in connection with the work. Such schedule shall provide a minimum of three (3) weeks advance notice to the Construction Manager prior to the item of the proposed shutdown or cutover.
34. Each Prime Contractor shall provide and maintain all safety-related work necessary to result in a safe workplace for its employees, in strict accordance with OSHA Regulations.
35. Each prime Contractor will provide their Site Specific Company Safety Plan ten days (10) in advance of mobilization to the site for review by the Construction Manager. Contractors will abide by their Company Safety Plan and all Project safety requirements until final Project closeout.
36. Each Prime Contractor shall provide its employees with all personal safety devices required to protect said employees in accordance with OSHA Regulations.
37. Each Prime Contractor shall restore any said safety-related work, which is removed or modified by its employees prior to leaving the protected area. Failure to so restore will render that Contractor liable for any costs incurred by others in the restoration of said safety-related work.
38. Each Prime Contractor is responsible for providing and maintaining proper ventilation during construction activities.
39. Each Prime Contractor is responsible to protect existing vegetation, trees, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
40. Each Prime Contractor is responsible to provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
41. Each Prime Contractor is responsible for existing Tree and Plant Protection. Repair any damage or replace damaged trees to the satisfaction of the Owner and Construction Manager.
42. Service of existing utilities serving the site and/or adjacent building shall not be interrupted without issuing notice to the Construction Manager within 48 hours of anticipated interruption. The Prime Contractor causing the interruption shall be responsible to provide temporary service until new or existing service can be restored to proper working condition.

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- C. Each Prime Contractor intending to use Support Facilities shall comply with the following:
 - 1. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.
 - 2. Maintain support facilities until Construction Manager schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
- D. Each Prime Contractor who provides temporary facilities as discussed hereafter, shall make them available for the use of all Trade Contractors.
 - 1. Contract No. 01 (Site/Utility) is specifically responsible for the following:
 - a. Site Enclosure Fence: Before construction operations begin, furnish, and install site enclosure fence and entrance gates in a manner that will prevent people and animals from easily entering site except by entrance gates.
 - 1) Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
 - 2) Maintain security by limiting number of keys and restricting distribution to authorized personnel. Furnish one set of keys to Owner and Construction Manager.
 - b. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each work day.
 - c. Building and Site security, including lock-up at the end of each working day.
 - d. All labor, material, and equipment necessary to provide and maintain the road(s) and site areas and allow all persons engaged in work free access to and use of all such roadways, walkways, building entrances, staging areas and parking areas.
 - e. All labor, material, and equipment necessary to provide and maintain temporary signs and temporary movable barricades. Signs shall be provided to construction personnel seeking entrance to the construction site.
 - f. Provide temporary erosion control measures as required to prevent sedimentation from entering storm drainage system.
 - g. Provide Stormwater Control and comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
 - h. All labor, material, and equipment necessary to keep public roads and parking areas within and adjacent to the Project Site clean and dirt-free. Remove stones and mud off existing roads for the duration of project by means of mechanical sweeper on a daily basis and as directed by the Construction Manager.
 - i. Provide traffic controls complying with the requirements of authorities having jurisdiction. Protect existing site improvements to remain including curbs, pavement, and utilities and maintain access for fire-fighting equipment and access to fire hydrants.
 - j. Temporary traffic signals, if required, shall be provided and maintained.
 - k. All labor, material, and equipment required for Dust Control utilizing a water truck.

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- l. Provide cutting of all new and existing grass within the work area, to maintain the maximum length of grass at four inches (4”), inclusive of but not limited to mowing or string trimming of grass along building and both sides of fence lines, around trees and all temporary and permanent structures on site.
 - m. Snow and ice removal as follows:
 - 1) All labor, material, and equipment necessary for snow removal whenever there is an accumulation of two (2) or more inches, in areas of the field trailers, parking areas, staging areas, building ingress and egress and internal site access roads.
 - 2) If snow accumulation is such that snow must be hauled off site due to insufficient storage space, this shall be done at no additional cost to the Owner.
 - 3) Provide all necessary labor, equipment and materials required for the removal of ice and other slippery conditions of the building entrances and building work areas at no cost to the Owner. Use of rock salt on existing and new concrete surfaces is prohibited
 - 4) All labor, material, and equipment necessary to maintain a clear path at all access and egress points to the building including, but not limited to the removal of snow and ice for the entire duration of the Project.
 - n. Ground Thaw
 - 1) Provide all labor, material, and equipment necessary for ground thawing for all trades for the installation of underground activities.
 - o. Temporary Roads and Paved Areas: Construction and maintenance of temporary roads and paved areas.
 - p. Provide site dust-control treatment throughout the Site Area that is nonpolluting and non-tracking. Reapply treatment as required to minimize dust.
 - q. Provide temporary stone roadway and parking areas for construction personnel.
 - r. Provide dewatering of all excavation work specific to the Site contract scope of work.
2. Contract No. 01 (Site Utility) is specifically responsible for the following:
 - a. If the slab on grade is placed prior to the erection of the building system, provide all labor, material and equipment as necessary to properly protect the slab on grade in its entirety during all sequences of construction to prevent any damage to the completed slab on grade and any underfloor mechanical and/or electrical systems as applicable.
 - b. All labor, material, and equipment necessary to provide and maintain a Project Identification Sign. Engage an experienced sign vendor to apply graphics for a Project Identification Sign. Provide a 4 foot by 8 foot sign comprised of ¾ inch exterior grade plywood mounted on 4 x 4 preservative treated wood posts set 4 feet into the ground. Sign content and layout as directed by Architect. Submit shop drawings for approval prior to fabrication and installation.
 - c. Temporary Toilet Facilities and Hand Washing Station for the use of all Contractors provide specified, equipment in a quantity as required by OSHA and that complies with the requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
 - d. Provide, maintain, and remove all temporary barricades, partitions, dust barriers, and enclosures as required to complete the work. Include temporary egress

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- requirements including fire ratings and signage for all temporary partitions as required by code.
- e. Temporary Fire Extinguishers throughout the facility, equipment shall comply with OSHA. Extinguishers shall be portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
 - f. Provide and maintain access and egress points to the site including temporary gates, with the provision for locking. Locations of egress are to be approved by the Construction Manager and/or shown on the contract documents.
 - g. Provide, maintain, and remove temporary enclosure(s) at all exterior walls and/or openings as required/necessary.
 - h. Installation, maintenance, and removal of temporary weather protection shall be constructed of a minimum of 2x4 lumber and reinforced polyethylene plastic.
 - i. Provide, maintain, and remove temporary railings, guard rails, and protection of all floor and roof openings throughout the project in compliance with OSHA regulations.
 - j. Any Contractor using other than the designated cleaning station will be responsible to pay for cleaning and restoration of lines to a usable condition; including remote camera inspection costs to verify clear lines out to utility mains in the public right-of way.
 - k. Provide Project signs as indicated. Unauthorized signs are not permitted.
 - 1) Identification Signs: Provide Project identification signs as indicated in this specification section.
 - 2) Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.
 - 3) Provide temporary, directional signs for construction personnel and visitors.
 - 4) Maintain and touchup signs so they are legible at all times.
 - l. Provide all dumpsters throughout the term of the Contract for the use of all Contractors. Dumpsters for abatement removal work shall be provided and maintained by the Owner. At no time should dumpsters be so full as to prevent the loading of debris. Sufficient dumpsters are to be provided for cardboard, recyclables, metals and general debris. Dumpsters are to be protected so that the public cannot remove or put debris into them.
 - m. Provide and continuously maintain safety-related work for the entire project, for the benefit of all Prime Contractors and in strict accordance with OSHA Regulations, through completion of the Project. Such safety-related work shall include, but not limited to, perimeter and slab edge protection, barricades, railings, temporary protection, shaft, temporary stairs, stair pan fills, barriers, fire extinguishers, flashers, safety signage, and fencing. Such safety-related work shall not include responsibility for scaffolding provided by another Contractor, lifts provided by another Contractor, or work performed at elevation by another Prime Contractor.
 - n. Continuously and regularly inspect the safety-related work provided under this section. As the work progresses and/or when said safety-related work is found to be no longer functional, removed, missing or modified, relocate, repair, replace and otherwise immediately make safe all unsafe conditions, regardless of the source of said damage, removal or modification.
3. Contract No.2 (Electrical) is specifically responsible for the following:

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- a. Contractor shall connect temporary electric service to existing electric power service. Maintain equipment in a condition acceptable to Owner and coordinate all requirements with utility service Owner.
- b. Maintain all site lighting and illuminate the Project site to deter loss or liability due to theft or vandalism when the work is not in progress at night, weekends, or holidays.
- c. Provide lighting for Project identification signage
- d. Provide temporary electric power and lights with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions. Also provide the following:
 - 1) All labor, material, and equipment necessary to provide temporary power and lights throughout the project during the entire construction periods.
 - 2) Electrical outlets, provide one (1) 100 amp panel box with eight outlets every 200 feet from all points within the building.
 - 3) Temporary Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload-protected disconnects, automatic ground-fault interrupters, and main distribution switchgear.
 - 4) Power Distribution System: Where wiring runs overhead or rise vertically install where least exposed to damage. Where permitted, wiring circuits not exceeding 125 Volts, ac 20 Ampere rating, and lighting circuits may be nonmetallic sheathed cable where overhead and exposed for surveillance.
 - 5) Temporary electric, power distribution, outlets, and lighting shall be installed, maintained, and operated in accordance with OSHA standards, the National Electric Code and all applicable regulations and codes.
 - 6) Contact, schedule, coordinate, and make necessary arrangements through the Construction Manager and/or local utility provider for the installation of temporary electrical service for the project.
 - 7) Temporary electrical power service is to be established from the Owner's primary electric service.
 - 8) Provide temporary connections to all equipment requiring electrical power in order to provide temporary heat. Remove such temporary connections and equipment when the need for it is concluded.
 - 9) Provide all temporary panels, transformers, overload protected disconnects, automatic ground-fault interrupters, main distribution switchgear, wiring, outlets, boxes breakers, lights, switches, fixtures, lamps and other necessary items as required to provide temporary power and lights during the course of the entire project.
 - 10) Contractor is responsible for all construction costs associated with the connection and disconnection of temporary power. Fees charged by the electrical utility company (including service and usage fees) shall initially be paid for by the Electrical Contractor. The Contractor will be reimbursed for usage fees by the Owner upon completion and acceptance of the work.
 - a) Upon completion and acceptance, the Contractor shall submit to the Owner copies of the paid usage fee invoices. Once received and accepted, the Owner will reimburse the Contractor the amount

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charged by the utility company, with 0% mark-up and no overhead.

- 11) Contractor is responsible for coordination with utility company.
 - 12) Provide portable generators during power shutdowns / switchovers exceeding four hours during any scheduled shift. Any contractor requiring power during any scheduled shutdown less than 4 hours must provide their means for temporary electric.
 - 13) Any shutdowns or cutovers shall be at the sole expense of Contract No.2 (Electrical).
 - 14) Provide and pay for all costs associated with the daily maintenance of all temporary electric systems including, but not limited to, the replacement of lamps, outlets, wiring, circuit breakers and all other components as required to maintain a safe and orderly work place.
 - 15) Costs associated with the relocation of any temporary services that obstruct project progress of any Contractor as directed by the Construction Manager shall be completed at no cost to the Owner.
 - 16) Temporary lighting is to be provided by the Electrical Contractor when and as determined by the Construction Manager. The Electrical Contractor shall provide all necessary labor, equipment, and materials to complete and maintain an electric lighting system to provide general area illumination as required by all applicable codes.
 - 17) Provide all temporary light and power in advance of scheduled work so as not to impact Project schedule.
 - 18) Provide temporary or permanent service for all permanently installed building equipment including but not limited to sump pumps, HVAC roof top units, chillers, boilers, boiler controls, fans and pumps, lighting, security systems, fire alarm systems and the elevator so that such equipment may be operated when ordered by the Construction Manager.
 - 19) The use of new lighting fixtures will not be permitted as a source for temporary lighting of the building during construction.
 - 20) The use of stand lights shall not constitute as temporary lighting.
 - 21) Provide all labor, materials, and equipment necessary to provide continuous operating lighting at all designated access and egress locations for emergency purposes. Relocation and maintenance of this lighting system shall be included in base bid.
- e. Provide dewatering of all excavation work specific to the electrical contract scope of work.

3.3 OPERATION, TERMINATION, AND REMOVAL (FOR EACH PRIME CONTRACTOR)

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

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- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 - 1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
 - 2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
 - 3. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

END OF SECTION

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project, product delivery, storage, handling, manufacturers' standard warranties on products, special warranties and comparable products.

1.3 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system" and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged, reused or repurposed from other projects are not considered new products.
 - 3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance and other characteristics that are equivalent or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis of design" or "basis of design product" including make, model number or other designation to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.4 ACTION SUBMITTALS

- A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.

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2. Architect's Action: If necessary Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within business ten (10) days of receipt of request, or five (5) business days of receipt of additional information or documentation, whichever is later.
 - a. Form of Approval: As specified in Section 013300 Submittal Procedures.
 - b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.
- B. Basis of Design Product Specification Submittal: Comply with requirements in Section 013300 Submittal Procedures. Show compliance with requirements.

1.5 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.
 1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
 2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.
 4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.
- C. Storage:
 1. Store products to allow for inspection and measurement of quantity or counting of units.
 2. Store materials in a manner that will not endanger Project structure.
 3. Store products that are subject to damage by the elements, under cover in a weather tight enclosure above ground, and with ventilation adequate to prevent condensation.
 4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment by covering construction.

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5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage, and liquids from freezing.
7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location and security procedures with Owner.

1.7 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
 1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
 2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
 1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
 3. See other Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Section 017700 Closeout Procedures.

PART 2 PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
 1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected," Architect will make selection.
 5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.

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6. Or Equal: For products specified by name and accompanied by the term "or equal," "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.
- B. Product Selection Procedures:
1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products for Contractor's convenience will not be considered.
 2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products for Contractor's convenience will not be considered.
 3. Products:
 - a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products for Contractor's convenience will not be considered, unless otherwise indicated.
 - b. Nonrestricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.
 4. Manufacturers:
 - a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products for Contractor's convenience will not be considered, unless otherwise indicated.
 - b. Nonrestricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.
 5. Basis of Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.
- C. Visual Matching Specification: Where Specifications require "match Architect's sample", provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
- D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

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2.2 COMPARABLE PRODUCTS

- A. Conditions for Consideration: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:
1. Evidence that the proposed product does not require revisions to the Contract Documents, and that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
 2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 3. Evidence that proposed product provides specified warranty.
 4. List of similar installations for completed projects with project names and addresses and names and addresses of Architects, Construction Managers, and Owners, if requested.
 5. Samples, if requested.

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 017300 - EXECUTION

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering and surveying.
 - 3. Installation of the Work.
 - 4. Cutting and patching.
 - 5. Correction of the work.
 - 6. Coordination of Owner-installed products.
 - 7. Progress cleaning.
 - 8. Dust control.
 - 9. Starting and adjusting.
 - 10. Protection of installed construction.

1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For licensed land surveyor.
- B. Certificates: Submit certificate signed by licensed land surveyor or certifying that location and elevation of improvements comply with requirements.
- C. Cutting and Patching Plan: Submit plan describing procedures at least 14 calendar days prior to the time cutting and patching will be performed. Include the following information:
 - 1. Extent: Describe reason for and extent of each occurrence of cutting and patching.
 - 2. Changes to In-Place (Existing) Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.

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3. Products: List products to be used for patching and firms or entities that will perform patching work.
 4. Dates: Indicate when cutting and patching will be performed.
 5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.
 - a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.
 6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations prepared by Contractor's licensed Professional Engineer showing integration of reinforcement with original structure.
 7. Describe cutting and patching procedures of lead based paint.
- D. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.
- E. Certified Surveys: Submit two copies signed by licensed land surveyor.

1.5 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.
- B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
1. Structural Elements: Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection and load-deflection ratio. Structural elements include the following:
 - a. Primary structural systems.
 - b. Secondary and miscellaneous structural systems.
 - c. Lintels.
 - d. Bearing walls and retaining walls.
 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational elements include the following:
 - a. Primary operational systems and equipment.
 - b. Fire separation assemblies.
 - c. Air or smoke barriers.
 - d. Fire-suppression systems.
 - e. Mechanical systems piping and ducts.
 - f. Control systems.
 - g. Communication systems.
 - h. Fire-detection and -alarm systems.

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- i. Conveying systems.
 - j. Electrical wiring systems.
 - k. Operating systems of special construction.
 3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:
 - a. Water, moisture, or vapor barriers.
 - b. Membranes and flashings.
 - c. Exterior curtain-wall construction.
 - d. Sprayed fire-resistive material.
 - e. Equipment supports.
 - f. Piping, ductwork, vessels, and equipment.
 - g. Noise- and vibration-control elements and systems.
 4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- C. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.
- D. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place (Existing) Materials: Use materials for patching identical to in-place (existing) materials. For exposed surfaces, use materials that visually match in-place (existing) adjacent surfaces to the fullest extent possible.
 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place (existing) materials.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate

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and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

1. Description of the Work.
2. List of detrimental conditions, including substrates.
3. List of unacceptable installation tolerances.
4. Recommended corrections.

D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions and the cost of any and all remedial work required due to installation on unacceptable surfaces and substrates or under improper conditions shall be borne by the Contractor.

E. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.

1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to local utility and/or Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the

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Work.

- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Section 013100 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect and Owner's Representative promptly.
- B. General: Engage a licensed land surveyor to lay out the Work using accepted surveying practices.
 - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 - 2. Establish limits on use of Project site.
 - 3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 - 4. Inform installers of lines and levels to which they must comply.
 - 5. Check the location, level and plumb, of every major element as the Work progresses.
 - 6. Notify Architect and Owner's representative when deviations from required lines and levels exceed allowable tolerances.
 - 7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect and Owner's Representative.

3.4 FIELD ENGINEERING

- A. Identification: Refer to drawings for existing benchmarks, control points, and property corners.
- B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control

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points during construction operations.

1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect before proceeding.
 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- C. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
 2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
 3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
1. Make vertical work plumb and make horizontal work level.
 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.

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1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 2. Allow for building movement, including thermal expansion and contraction.
 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of work to be cut.
- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section "Multiple Contract Summary."
- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.

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4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 6. Proceed with patching after construction operations requiring cutting are complete.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.7 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in this Specification Section.
 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces in kind.

3.8 OWNER-INSTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's construction personnel.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.
 - 1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
 - 2. Preinstallation Conferences: Include Owner's construction personnel at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.

3.9 PROGRESS CLEANING

- A. General: Maintain and clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
 - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 - 2. Do not hold waste materials more than seven calendar days during normal weather or three calendar days if the temperature is expected to rise above 80 deg F.
 - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
 - a. Use containers intended for holding waste materials of type to be stored.
 - 4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
 - 5. Do not transport construction debris through occupied areas of existing facilities.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Maintain and clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 - 1. Remove liquid spills promptly.
 - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Public Roads: Roads shall be cleared of all mud, dust, debris, etc. on a daily basis or as directed by Architect or Owner's Representative.

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- E. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- F. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- G. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- H. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in 015000.1 - Temporary Facilities and Controls - Multi Prime.
- I. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- J. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- K. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.
- L. Responsibilities of the Contractor(s):
 - 1. The Site Contractor shall provide and service dumpsters for the use of all Contractors.
 - 2. Dumpsters shall be located at each site, accessible to building and roads. Each Contractor may legally load acceptable construction debris into the Dumpsters from this project only. Cost of all disposal fees shall be by the Site Contractor and dumpsters shall remain on the project until project completion, or as directed by Owner. The Site Contractor shall secure dumpsters during off-hours. This excludes asbestos items.
 - 3. The Contractor is responsible for clean-up and disposal of waste materials, debris and rubbish on a daily basis.
 - 4. The Owner may issue written notification of insufficient cleaning relative to the requirements of this Section. Upon issuance of the cleaning notice:
 - a. All waste and accumulation of trash containing the Contractor's debris shall be removed from the Owner's premises within 24 hours of notification.
 - b. All designated project areas containing the Contractor's debris or requiring general housekeeping shall be left fine broom clean (interior) or raked clean (exterior or rough surface). Sweeping compound shall be used for all interior broom cleaning to control dust.
 - c. Failure by the Contractor to comply with the 24 hour requirement of the notice to the satisfaction of the Owner will result in a cleaning program directed by the Owner at the expense of the Contractor. Cost of clean-up performed by the Owner will be deducted from the Contractor's Request for Payment.
 - 5. Maintain areas under Contractor's control free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

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6. Daily clean interior areas to provide suitable conditions for work.
7. Broom clean interior areas prior to start of surface finishing, and continue cleaning on an as-needed basis.
8. Control cleaning operations so that dust and other particles will not adhere to wet or newly-coated surfaces.
9. Remove waste materials, debris, and rubbish from site or to a dumpster provided by the Contractor daily.
10. The Contractor shall provide end-of-day clean-up of work areas of all prime contractors on a daily basis, conforming to requirements above.

3.10 DUST CONTROL

- A. The Contractor shall at all times control the spread of dust and dirt during the execution of the work. Use water mist, temporary closures, and other suitable methods. Use wet saws for cutting. Provide walk-off mats at entrances and exits to construction areas.
 1. Do not use water when it may damage existing construction or create hazardous or objectionable conditions.
 2. Wet mop floors to eliminate trackable dust and dirt and wipe down walls and doors of dust and dirt.

3.11 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

3.12 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.
- C. Supervise construction operations to ensure that in progress work is not stored on and/or effects completed construction such as floors and walls, which are subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.
- D. Roof Areas:
 1. Construction traffic and storage of materials of materials on completed roof surfaces is not allowed. Where work is required, the contractor shall submit a protection plan, 14 calendar days prior to scheduled commencement of the work. Protection plan to include

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the following: Type of work to be performed.

2. Location of work areas.
3. Route of materials and workers to work area.
4. Materials and methods to be used.
5. Proceed with work after Owners authorization. Damage to roof surfaces shall be repaired and the cost of any and all remedial work shall be borne by the Contractor.

END OF SECTION

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Substantial Completion procedures.
 - 2. Final completion procedures.
 - 3. Warranties.
 - 4. Final cleaning.
 - 5. Repair of the Work.

1.3 ACTION SUBMITTALS

- A. Product Data: For cleaning agents.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.4 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.6 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.
- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 business days prior to requesting inspection for determining date of Substantial Completion. List items

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below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
 3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Construction Manager. Label with manufacturer's name and model number where applicable.
 - a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Architect's signature for receipt of submittals.
 5. Submit test/adjust/balance records.
 6. Submit sustainable design submittals required in applicable individual "Sustainable" Section.
 7. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 business days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Advise Owner of pending insurance changeover requirements.
 2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 3. Complete startup and testing of systems and equipment.
 4. Perform preventive maintenance on equipment used prior to Substantial Completion.
 5. Advise Owner of changeover in heat and other utilities.
 6. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
 7. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 8. Complete final cleaning requirements, including touchup painting.
 9. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 business days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect and Owner's representative will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or

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corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for final completion.

1.7 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:
 1. Submit a final Application for Payment according to "Payment Procedures."
 2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 business days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Construction Manager will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.8 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Contractor shall prepare Punch List to include the following: name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
 1. Organize list of spaces in sequential order, starting with exterior areas first.
 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
 3. Include the following information at the top of each page:
 - a. Project name.
 - b. Date.
 - c. Name of Architect
 - d. Name of Contractor.
 - e. Page number.
 4. Submit list of incomplete items in the following format:
 - a. PDF electronic file. Architect, will return annotated file.

1.9 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties per General Conditions of the Contract, specifically Section 4.09, on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- B. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
 - 1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
 - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
 - 4. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
- C. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.
 - 1. Use cleaning products that meet Green Seal GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 EXECUTION

3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

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1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Remove snow and ice to provide safe access to building.
 - f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - h. Sweep concrete floors broom clean in unoccupied spaces.
 - i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
 - j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
 - k. Remove labels that are not permanent.
 - l. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 - m. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
 - n. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
 - o. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.
 - 1) Clean HVAC system in compliance with NADCA Standard 1992-01. Provide written report on completion of cleaning.
 - p. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
 - q. Leave Project clean and ready for occupancy.
- C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
 - 1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
 - 2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence of repair or restoration.
 - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
 - 3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
 - 4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
 - 1. Operation and maintenance documentation directory.
 - 2. Emergency manuals.
 - 3. Operation manuals for systems, subsystems, and equipment.
 - 4. Product maintenance manuals.
 - 5. Systems and equipment maintenance manuals.

1.3 DEFINITIONS

- A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.
- B. Subsystem: A portion of a system with characteristics similar to a system.

1.4 CLOSEOUT SUBMITTALS

- A. Manual Content: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
 - 1. Architect will comment on whether content of operations and maintenance submittals are acceptable.
 - 2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.
- B. Format: Submit operations and maintenance manuals in the following format:
 - 1. PDF electronic file. Assemble each manual into a composite electronically indexed file. Submit on digital media acceptable to Architect.
 - a. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically linked operation and maintenance directory.
 - b. Enable inserted reviewer comments on draft submittals.

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- C. Initial Manual Submittal: Submit draft copy of each manual at least 30 business days before commencing demonstration and training. Architect will comment on whether general scope and content of manual are acceptable.
- D. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 business days before commencing demonstration and training. Architect will return copy with comments.
 - 1. Correct or revise each manual to comply with Architect comments. Submit copies of each corrected manual within 15 business days of receipt of Architect comments and prior to commencing demonstration and training.

PART 2 PRODUCTS

2.1 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

- A. Directory: Prepare a single, comprehensive directory of emergency, operation, and maintenance data and materials, listing items and their location to facilitate ready access to desired information. Include a section in the directory for each of the following:
 - 1. List of documents.
 - 2. List of systems.
 - 3. List of equipment.
 - 4. Table of contents.
- B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.
- C. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.
- D. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.
- E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

2.2 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

- A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
 - 1. Title page.
 - 2. Table of contents.
 - 3. Manual contents.
- B. Title Page: Include the following information:

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1. Subject matter included in manual.
 2. Name and address of Project.
 3. Name and address of Owner.
 4. Date of submittal.
 5. Name and contact information for Contractor.
 6. Name and contact information for Construction Manager. (if applicable)
 7. Name and contact information for Architect.
 8. Name and contact information for Commissioning Authority. (if applicable)
 9. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
 10. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.
- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
- E. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
 2. File Names and Bookmarks: Enable bookmarking of individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.
- F. Manuals, Paper Copy: Submit manuals in the form of hard copy, bound and labeled volumes.
1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 - a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
 - b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment.
4. Supplementary Text: Prepared on 8-1/2-by-11-inch white bond paper.
5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
 - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
 - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.3 EMERGENCY MANUALS

- A. Content: Organize manual into a separate section for each of the following:
 1. Type of emergency.
 2. Emergency instructions.
 3. Emergency procedures.
- B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
 1. Fire.
 2. Flood.
 3. Gas leak.
 4. Water leak.
 5. Power failure.
 6. Water outage.
 7. System, subsystem, or equipment failure.
 8. Chemical release or spill.
- C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- D. Emergency Procedures: Include the following, as applicable:
 1. Instructions on stopping.
 2. Shutdown instructions for each type of emergency.
 3. Operating instructions for conditions outside normal operating limits.
 4. Required sequences for electric or electronic systems.
 5. Special operating instructions and procedures.

2.4 OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

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1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
2. Performance and design criteria if Contractor has delegated design responsibility.
3. Operating standards.
4. Operating procedures.
5. Operating logs.
6. Wiring diagrams.
7. Control diagrams.
8. Piped system diagrams.
9. Precautions against improper use.
10. License requirements including inspection and renewal dates.

B. Descriptions: Include the following:

1. Product name and model number. Use designations for products indicated on Contract Documents.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

C. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.5 PRODUCT MAINTENANCE MANUALS

- A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

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- B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.
- C. Product Information: Include the following, as applicable:
 - 1. Product name and model number.
 - 2. Manufacturer's name.
 - 3. Color, pattern, and texture.
 - 4. Material and chemical composition.
 - 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
 - 1. Inspection procedures.
 - 2. Types of cleaning agents to be used and methods of cleaning.
 - 3. List of cleaning agents and methods of cleaning detrimental to product.
 - 4. Schedule for routine cleaning and maintenance.
 - 5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
 - 1. Include procedures to follow and required notifications for warranty claims.

2.6 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
 - 1. Standard maintenance instructions and bulletins.
 - 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
 - 3. Identification and nomenclature of parts and components.
 - 4. List of items recommended to be stocked as spare parts.

- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
 - 1. Test and inspection instructions.
 - 2. Troubleshooting guide.
 - 3. Precautions against improper maintenance.
 - 4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - 5. Aligning, adjusting, and checking instructions.
 - 6. Demonstration and training video recording, if available.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
 - 1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
 - 2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
 - 1. Include procedures to follow and required notifications for warranty claims.

PART 3 EXECUTION

3.1 MANUAL PREPARATION

- A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- B. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- C. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
 - 1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
 - 2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.

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- D. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
 - 1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
- E. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.
 - 1. Do not use original project record documents as part of operation and maintenance manuals.
 - 2. Comply with requirements of newly prepared record Drawings in Section 017839 "Project Record Documents."
- F. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
 - 1. Record Drawings.
 - 2. Record Specifications.
 - 3. Record Product Data.
 - 4. Miscellaneous record submittals.

1.3 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit one (1) set(s) of marked-up record prints.
 - 2. Number of Copies: Submit copies of Project Record Drawings as follows:
 - a. Initial Submittal:
 - 1) Submit one (1) paper-copy set(s) of marked-up record prints.
 - 2) Submit PDF electronic files of scanned record prints and one (1) of file prints.
 - 3) Submit record digital data files and one (1) set(s) of plots.
 - 4) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
 - b. Final Submittal:
 - 1) Submit one (1) paper-copy set(s) of marked-up record prints.
 - 2) Submit record digital data files and one (1) set(s) of record digital data file plots.
 - 3) Plot each drawing file, whether or not changes and additional information were recorded.
- B. Record Specifications: Submit one paper copy and annotated electronic PDF(s) and directories of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit one paper copy and annotated electronic PDF(s) and directories of each submittal.
 - 1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

- D. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit one paper copy and annotated electronic PDF(s) and directories of each submittal.
- E. Reports: Submit weekly written report indicating items incorporated into project record documents concurrent with progress of the Work, including revisions, concealed conditions, field changes, product selections, and other notations incorporated.

PART 2 PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
 - 1. Preparation: Mark record prints to show the actual installation, when such installation varies from that shown originally. Require individual person or entity who obtained record data, whether that individual or entity is an installer, subcontractor or similar entity, to provide information for preparation of corresponding marked-up record prints.
 - a. Clearly record and identify information about concealed elements that would be difficult to identify, measure or record later.
 - b. Accurately record information in an acceptable drawing technique.
 - c. Record data immediately after revealing or obtaining it.
 - d. Record and check the markup before enclosing or concealing installations.
 - e. Cross-reference record prints to corresponding photographic documentation.
 - 2. Maintain on Project site at all times, in an approved location, and in a clean, dry and legible condition, one set of Project Drawings and one set of Submittals. These documents shall be used to record as-built conditions on a day-to-day basis, and shall be kept current and available for inspection by the Architect and Owner's Representative during working hours.
 - 3. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Concealed insulation types, thicknesses and R-Values.
 - c. Locations of discontinuous insulation, if any.
 - d. Revisions to details shown on Drawings.
 - e. Depths of foundations below first floor.
 - f. Locations and depths of underground utilities.
 - g. Revisions to routing of piping and conduits.
 - h. Revisions to electrical circuitry.
 - i. Actual equipment locations.
 - j. Duct size and routing.
 - k. Locations of concealed internal utilities.
 - l. Changes made by Change Order or Construction Change Directive.
 - m. Changes made following Architect's written orders.
 - n. Details not on the original Contract Drawings.
 - o. Field records for variable and concealed conditions.

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WENDEL PROJECT #: 279806
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- p. Actual installed information about Work that is otherwise shown only schematically.
 - 4. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
 - 5. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
 - 6. Mark important additional information that was either shown schematically or omitted from original Drawings.
 - 7. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Architect. When authorized, prepare a full set of corrected digital data files of the Contract Drawings:
- 1. Format: Annotated electronic PDF with comment function enabled.
 - 2. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
 - 3. Refer instances of uncertainty to Architect for resolution.
 - 4. Architect will furnish Contractor one set of digital data files of the Contract Drawings for use in recording information.
 - a. See Section 013300 Submittal Procedures for requirements related to use of Architect's digital data files.
 - b. Architect will provide data file layer information. Record markups in separate layers.
- C. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
- 1. Record Prints: Organize record prints and newly prepared record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 - 2. Format: Annotated electronic PDF, with comment function enabled.
 - 3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
 - 4. Identification:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS".
 - d. Name of Architect.
 - e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
- 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

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2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Record the name of manufacturer, supplier, installer and other information necessary to provide a record of selections made.
4. For each principal product, indicate whether record Product Data has been submitted in operation and maintenance manuals instead of submitted as record Product Data.
5. Note related Change Orders, record Product Data, and record Drawings where applicable.

- B. Format: Submit record Specifications as annotated electronic PDF(s) and directories.

2.3 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, record Specifications, and record Drawings where applicable.

- B. Format: Submit record Product Data as annotated electronic PDF(s) and directories.

1. Include record Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data.

2.4 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

- B. Format: Submit miscellaneous record submittals as paper copy.

1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

PART 3 EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.

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- B. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition protected from deterioration and loss. Provide access to project record documents for Architect reference during normal working hours.

END OF SECTION

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SECTION 023200 - GEOTECHNICAL INVESTIGATION

PART 1 GENERAL

- 1.1 SUBSURFACE INVESTIGATIONS HAVE BEEN MADE AND THE RESULTS ARE BOUND HEREIN IMMEDIATELY FOLLOWING THIS PAGE. THEY ARE ALL INCLUDED IN THE SPECIFICATIONS FOR INFORMATION ONLY, AND BIDDERS ARE RESPONSIBLE FOR ANY CONCLUSIONS DRAWN FROM THE DATA PROVIDED. THE OWNER AND ARCHITECT ASSUME NO RESPONSIBILITY FOR THE COMPLETENESS AND ACCURACY OF THE INFORMATION INCLUDED. THE CONTRACTOR IS RESPONSIBLE TO GATHER ADDITIONAL SUBSURFACE INFORMATION, IF NEEDED, TO COMPLETE THE SCOPE OF WORK DEFINED IN THE PROJECT DOCUMENTS.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION



ATLANTIC TESTING LABORATORIES

WBE certified company

Buffalo

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Hamburg, NY 14075
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atlantictesting.com

March 14, 2024

Wendel
237 Main Street, Suite 500
Buffalo, New York, 14203

Attn: David L. Kenyon, RLA, ASLA, LEED AP
Senior Landscape Architect
Associate Principal

Telephone: 716-688-0766
Email: dkenyon@wendelcompanies.com

Re: Subsurface Investigation and Geotechnical Evaluation
Proposed Sports Fields
ECC – North Campus
6205 Main Street
Town of Amherst, New York
ATL Report No. BD099E-01-11-23

Mr. Kenyon:

Enclosed is one (1) electronic copy of the referenced report. ATL appreciates the opportunity to provide geotechnical services for your project.

Please note that upon completion of the subsurface investigation, the borings were backfilled with on-site soils and the surface was patched as appropriate. It is important that the backfilled borings be monitored for settlement or subsidence. This will be the responsibility of Wendel or ECC. ATL assumes no liability for loss or damage resulting from borehole settlement.

The soil samples obtained during this investigation will be retained for a period of six months and subsequently discarded, unless otherwise instructed.

Please contact our office should you have any questions or comments on this information, or if we may be of further service. We look forward to our continued association to obtain a successful completion of this project.

Sincerely,
ATLANTIC TESTING LABORATORIES, Limited

Thomas R. Seider, PE
Senior Engineer

TRS/JJD/sw

Enclosures

**SUBSURFACE INVESTIGATION
AND
GEOTECHNICAL EVALUATION**

**PROPOSED SPORTS FIELDS
ECC – NORTH CAMPUS
6205 MAIN STREET
TOWN OF AMHERST, NEW YORK**

WENDEL

**PREPARED FOR: Wendel
237 Main Street, Suite 500
Buffalo, New York, 14203**

**PREPARED BY: Atlantic Testing Laboratories, Limited
5167 South Park Avenue
Hamburg, New York, 14075**

ATL Report No. BD099E-01-11-23

March 14, 2024

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SUBSURFACE INVESTIGATION AND GEOTECHNICAL EVALUATION

PROPOSED SPORTS FIELDS ECC – NORTH CAMPUS 6205 MAIN STREET TOWN OF AMHERST, NEW YORK

WENDEL

1.0 INTRODUCTION

At the request of Leslie A. Villone, representing Wendel, and in accordance with our proposal (ATL File No. BD998-853-04-23, dated April 19, 2023), Atlantic Testing Laboratories, Limited (ATL) performed a subsurface investigation and geotechnical evaluation for the referenced project. The purpose of the investigation was to ascertain the general subsurface soil, bedrock, and groundwater conditions at the site, to evaluate the engineering significance of these findings, and to provide geotechnical recommendations related to the design and construction of the planned sports fields.

2.0 SITE AND PROJECT DESCRIPTION

The ECC – North Campus is bound by Main Street to the north, Tech Drive to the east, Wehrle Drive to the south and Youngs Road to the west. Arrow Drive is orientated in a west-east direction through the approximate middle of the campus. The project site, where the sports fields are planned, includes the portion of the campus situated north of Arrow Drive, which includes existing sports fields, the Bell Center Gymnasium, and a Maintenance Building with an adjacent asphalt pavement parking lot. The approximate limits of the project site are shown on **Figure 1 – Site Location Plan**, which is included in **Appendix A**.

The existing sports fields include: baseball / softball fields; open lawn areas; batting cages; and an athletic track. Based on the topographic mapping provided by Wendel, the ground surface at the south end of the project site, ranges from about elevation 693 feet within the parking lot to about 696 feet near the Bell Center. From this high point, the ground surface slopes downward to the north and northwest to about elevation 687 feet over a distance of about 200 feet, and then more gradually downward to about elevation 685 feet within the approximate center of the project site, and then gradually upward to about elevation 690 feet at the north end of the project site. Additional details regarding the existing conditions at the project site are shown on **Figure 2 – Boring Location Plan (Existing Conditions)**, which is included in **Appendix A**.

As shown on **Figure 3 – Boring Location Plan (Proposed Development)**, which is included in **Appendix A**, the project will include the following major components.

- An addition off the north end of the Bell Center Gymnasium.
- Several smaller buildings including restrooms, concessions, ticket booths, and kiosks within the central portion of the project site.
- Natural grass multi-use playing field and practice field.
- Natural grass and / or synthetic turf college level baseball and softball fields.
- Youth baseball / softball and soccer fields.
- Basketball and pickle ball courts.
- Structures associated with the new fields include perimeter light poles, score boards, backstops, dugouts and bleachers with a press box.
- Sidewalks / walking trails are planned throughout the facility, along with playgrounds, open lawn areas, and a sledding hill.
- Four new asphalt pavement parking lots are planned along the perimeter of the project site.

3.0 SUBSURFACE INVESTIGATION & SAMPLING METHODOLOGY

A total of 27 soil borings, designated as B-1 through B-27, and 21 infiltration borings with adjacent infiltration test pipes, designated as I-1 through I-21, were selected by Wendel, to provide general coverage of the project site. Wendel staked the exploration locations in the field using conventional survey techniques. The exploration locations were provided to ATL on site plans, which were used to prepare the boring locations plans (Figure 2 and Figure 3), included in Appendix A. Wendel also developed the approximate ground surface elevation at each exploration location, which were also provided to ATL for incorporation into this report.

The borings were completed by ATL between January 11th and January 24th, 2024, using a Central Mine Equipment (CME) model 550X, all-terrain tire mounted drill rig. The soil borings were advanced through the overburden soils using hollow stem auger and split spoon soil sampling techniques. Soil sampling and standard penetration testing (SPT) was performed continuously throughout the full depth of the borings. The split spoon sampling and SPT was completed utilizing a 2-inch outside diameter split spoon sampler and automatic drop hammer, in accordance with ASTM D 1586.

All the borings were advanced through the overburden soils until auger refusal conditions were encountered, at depths ranging from 0.8 feet to 7.1 feet, indicating the apparent top of bedrock was encountered. Following auger refusal within soil borings B-1, B-7, B-10, and B-16, five to ten feet of rock coring was completed, using an NQ size double tube core barrel in accordance with ASTM D 2113.

The collected soil samples were visually classified in the laboratory by a Geologist using the Burmister Soil Classification System. The split spoon sampler does not recover particles larger than 1 $\frac{3}{8}$ -inch in nominal dimension; therefore, the soil classifications may not be representative of the entire soil matrix. The recovered rock cores were also described, including characteristics such as color, rock type, hardness, weathering, bedding thickness, core recovery and rock quality designation (RQD). The visual classifications and the standard penetration test results are presented on the **Subsurface Investigation Logs** included in **Appendix B**.

The borings were backfilled with on-site soils, and the surface was patched as appropriate. It is important that the backfilled borings be monitored for settlement or subsidence. This will be the responsibility of Wendel or ECC. ATL assumes no liability for loss or damage resulting from borehole settlement.

4.0 LABORATORY ANALYSES

Select soil samples collected from the borings were submitted to ATL's geotechnical laboratory for the following physical analyses.

- Ten (10) Moisture Content of Soil (ASTM D 2216).
- Ten (10) Particle Size Distribution without Hydrometer (ASTM D 422).
- Four (4) Liquid Limit, Plastic Limit, Plasticity Index of Soil (ASTM D 4318).

In addition to the soil testing, four (4) pieces of the recovered bedrock cores were tested by ATL for Unconfined Compressive Strength (ASTM D 7012, Method C). The **Laboratory Test Results** are included in **Appendix C** and are summarized in the following sections of this report.

5.0 SURFACE AND SUBSURFACE CONDITIONS

The following description of surface and subsurface conditions is based on the subsurface soil, bedrock, and groundwater conditions encountered during the subsurface investigation performed between January 11th and January 24th, 2024. Actual subsurface conditions may vary across the site in both the horizontal and vertical dimensions. Detailed subsurface descriptions are provided on the subsurface investigation logs in Appendix B. In addition, **Table 1**, included in **Appendix D** summarizes the depth and elevation at the top of apparent bedrock.

5.1 Surface Conditions and Fill Soils

Topsoil was encountered at the surface of each soil boring and infiltration boring, and its thickness was recorded at about half the locations. When measured, the topsoil thickness was noted to range from about 3 inches to 8 inches. The topsoil thickness measurements noted by the driller were made at widely spaced locations. Properly measuring these thicknesses within the boring holes is difficult and can vary depending on the driller's interpretation, and therefore such measurements can be subject to interpretive disagreements and quantity disputes. In some cases, a distinct topsoil layer thickness (transition) is not easily discernible, particularly where site that has been disturbed by past development, filling, and grading activities. In these cases, underlying soils containing inclusions of organics may also be present, which are not readily identifiable as distinct topsoil. The topsoil / organic soil thickness can also be greater where trees are present.

Accordingly, these measurements should not be solely relied on for construction quantity estimates. Topsoil stripping beyond the surface topsoil may be necessary in some areas to remove all soils containing high concentrations of organics. We recommend the Contractor, and/or others, make their own detailed observations and measurements, prior to bidding and construction, to determine the quantities, costs and efforts that will be required for topsoil and organic surface soil removal, and associated replacement with appropriate suitable fill materials.

Man-placed imported fill soils were not readily identified during the soil classification procedure completed by ATL. Obvious signs of fill soils such as concrete fragments, asphalt, brick fragments, were not observed within the collected soil samples. However, trace amounts of organics were often observed within the shallower soil samples. It is likely that some past earthwork activities were completed during the development of the existing sports fields, which could have included the reuse of onsite soils. It should be expected that the existence of fill soils / disturbed indigenous soils, and its thickness, will vary between and away from the boring locations, and will be dependent on the original site topography prior to development of the existing sports fields. Fill soils will also extend to the bottom of the excavations made for the existing building foundations and utilities.

5.2 Indigenous Soils

Beneath the topsoil, the indigenous soils generally consisted of clays and silts or silty clays with varying amounts of intermixed sands, gravels, and weathered rock fragments. At several locations, the recovered material consisted predominately of weathered rock fragments with varying amounts of intermixed soils. The samples of weathered rock fragments and soils, when encountered, were often within the last sample collected before encountering auger refusal, and were more predominate within the northern portion of the project site.

The SPT “N” values obtained within the first split spoon samples mostly ranged from 3 to 8, indicating the near surface soils have a “soft” to “medium” consistency. At about 20 of boring locations, where the second split spoon sample was driven a full two feet (i.e. from 2 feet to 4 feet), the SPT “N” values were typically in the range of 6 to 15, indicating the soils become somewhat stiffer with depth.

Several samples of the overburden were tested for moisture content, grain size analysis, and plastic / liquid limits. The results are included in Appendix C, are summarized in the following table, and generally confirm the visual soil classifications. The plasticity indices of 11 to 17 indicate the clay and silt or silty clay soils have a “medium” degree of plasticity.

Geotechnical Laboratory Testing Results						
Boring Number	Sample Depth (ft. bgs)	Moisture Content (%)	Particle Size Analysis			PL / LL / PI
			Gravel (%)	Sand (%)	Fines (%) (Silt and Clay)	
B-5	2 to 4	18.9	14.3	41.0	44.7	16 / 33 / 17
B-7	0 to 2	23.6	0.0	41.7	58.3	not tested
B-13	2 to 4	18.5	0.0	5.1	94.9	not tested
B-22	0 to 2.4	20.3	6.6	37.8	55.6	not tested
I-10	2 to 4	19.1	0.7	31.4	67.9	15 / 28 / 13
I-10	4 to 4.9	17.0	37.8	42.8	19.4	not tested
I-12	2 to 3.7	14.7	24.7	27.2	48.1	not tested
I-14	2 to 5.3	14.2	19.0	26.2	54.8	14 / 25 / 11
I-21	2 to 4	18.0	0.0	8.8	91.2	16 / 27 / 11
I-21	4 to 5.9	13.7	22.0	19.0	59.0	not tested

Notes: 1) ft. bgs = feet below ground surface. 2) PL = Plastic Limit, LL = liquid limit, PI = Plasticity Index.

5.3 Bedrock

Auger refusal conditions were encountered within all 27 soil borings and 21 infiltration borings, at depths ranging from about 0.8 feet to 7.1 feet, indicating the apparent top of bedrock was encountered. Subsequent rock coring within borings B-1, B-7, B-10, and B-16, confirmed the refusal material consisted of Limestone bedrock. Table 1, included in Appendix D, summarizes the depth and elevation where the top of bedrock was encountered, as identified by auger refusal (AR), or by auger refusal followed by rock coring (C).

At 13 of the 21 infiltration borings, the driller moved over about four feet, and drilled a test hole to the top of bedrock, as identified by auger refusal conditions. At most of the locations, the top or rock encountered when setting the infiltration test pipe was the same or within about 0.3 feet of the top of bedrock at the infiltration boring. However, at location I-3, I-9, I-16, and I-19, the test pipe was set about 0.6 feet shallower or 0.5 feet to 0.9 feet deeper than where the bedrock was encountered within the infiltration boring. This information is summarized in Table 1 and indicates the top of bedrock can vary within a relatively short distance.

Within the southwest portion of the site (borings B-23 through B-27 and I-13 through I-15) and within the southeast portion of the site (B-5, B-12, B-13, B-14, I-10, and I-21), the top of bedrock was about 4 feet to 7 feet below the surface. Within the remaining areas, the top of bedrock was about 1 foot to 3.5 feet below the surface. As noted in Section 5.2 weathered rock fragments were encountered within several of the split spoon samples, particularly closer to where auger refusal conditions were encountered. This suggest the surface of the bedrock could be partially fractured at some locations, before the more competent bedrock was encountered.

The recovered rock cores from borings consisted of gray, hard, sound, laminated to thickly bedded Limestone. The following table summarizes the percent rock core recovery and the rock quality designation (RQD) value for each core run. One piece of the recovered rock core from each boring completed with rock coring was tested for Unconfined Compressive Strength. The results are included in Appendix C and are summarized in the following table.

Bedrock Core Recovery, RQD, and Unconfined Compressive Strength				
Boring Number	Core Run Depth (ft. bgs)	Core Recovery (percent)	Core RQD (percent)	Core Unconfined Compressive Strength (psi)
B-1	2.7 to 7.7	100	95	15,060
	7.7 to 12.7	100	90	not tested
B-7	2.5 to 7.5	93	81	16,640
B-10	3.8 to 8.8	95	85	17,440
B-16	1.7 to 6.7	98	85	16,160

Note: psi = pounds per square inch.

As summarized above, the RQD values ranged from 85% to 95% indicating the rock mass quality is “good” to “excellent”. The unconfined compressive strength of the rock cores were relatively consistent, ranging from about 15,000 pounds per square inch (psi) to 17,400 psi.

5.4 Groundwater

At the completion of overburden drilling, no water was observed within the hollow stem augers at any of the 27 soil borings or the 21 infiltration borings. In addition, most of the soil samples were described only as “moist”. These conditions suggest a general groundwater condition was not encountered within the overburden soils. However, it is possible that any groundwater, if present, did not have time to accumulate and/or stabilize in the borings during the relatively short time period that had elapsed from the completion of drilling operations and the time of the measurements.

Although not observed, some perched or trapped groundwater could potentially exist within zones of more granular soils or fractured bedrock, which overlie the more competent bedrock. Perched groundwater conditions can be more prevalent following heavy or extended periods of precipitation and during seasonally wet periods. Although limited, some of the collected soil samples were described as having a “wet” or “saturated” condition, which could be an indication of some zones of perched groundwater.

Following the completion of rock coring at borings B-7 and B-16, water was measured at depths of 2 feet and 5 feet, respectively. However, water was introduced into the borings to facilitate the rock coring. Accordingly, these measurements should not be taken to represent an actual groundwater condition. A water level measurement was not made following rock coring at borings B-1 and B-10.

It should be expected that both general and perched groundwater conditions will vary with location and with changes in soil conditions, precipitation, and seasonal conditions. Installation of overburden and bedrock monitoring wells would be required to better define the groundwater conditions at site.

6.00 INFILTRATION TESTING AND RESULTS

The following section describes the infiltration testing procedures and results. The infiltration testing field data are presented on the **Infiltration Test Data Summaries** included in **Appendix E**. The data is also summarized within **Table 2**, included in **Appendix D**.

Following completion of infiltration borings I-1 through I-21, the driller moved over approximately 4 feet, and drilled infiltration test holes to depths ranging from about 1.8 feet to 4.0 feet. Four inch diameter, PVC casing pipes, were then placed in the holes and the annulus space between the casing pipes and the holes were backfilled with soil cuttings. This included 7 test pipes installed within the overburden soils, 13 test pipes installed at the top of bedrock, and one of the test pipes (I-10) installed within a mixture of weathered rock fragments and soils. For the pipes that were installed within the overburden soils, about 1 foot to 3 feet of soil remained between the bottom of the test pipes and the top of bedrock.

Following installation of the test pipes, ATL added about 2.0 feet of water into the casing pipes for pre-soaking. ATL completed the infiltration testing over several days, in general conformance with the infiltration test procedure presented in the *NYSDEC Publication “Stormwater Management Design Manual – January 2015” – Appendix D: Infiltration Testing Requirements*.

Upon arrival to complete the infiltration testing, some amounts of pre-soak water remained within about half of the test pipes. ATL typically added water into the test pipes to increase the water level to a depth of 2.0 feet above the bottom. Exceptions include test pipes I-11, I-12, I-14, and I-19, where 2.0 feet of water was added above the remaining pre-soak water, thereby increasing the water level to 3.4 feet to 4.8 feet above the bottom of these test pipes. The water level drop was then measured in 60 minute intervals, for four consecutive test runs. Following each test run, the water level was adjusted to the same water level at the start of the test.

Within the 6 of the 7 test pipes installed within the overburden soils, no infiltration was observed. Within test pipe I-12 about 0.5 inches of infiltration was observed per hour. However, this was one of the test pipes where 2.0 feet of water was added above the remaining pre-soak water. The laboratory testing results summarized in Section 5.2, indicate the soils near the bottom of test pipes I-12, I-14, and I-21 consisted about 50% to 60% clay and silt size particles, with the remainder consisting of sands and gravels. Based on this data, and considering some amounts of pre-soak water remained within the test pipes, we recommend the infiltration rate for the overburden soils be taken as zero.

For the 13 test pipes installed at the top of bedrock, no infiltration was observed at 4 locations, and a limited amount of infiltration (i.e. 0.2 to 0.4 inches per hour) was observed at 2 other locations. At the remaining 7 test pipe locations installed at the top of bedrock, infiltration rates of 3 inches to more than 24 inches per hour were observed. At test pipe I-10, which was installed within a mixture of weathered rock fragments and soils, an infiltration rate of more than 24 inches per hour was observed. The laboratory testing results summarized in Section 5.2 indicate the soils near the bottom this test pipe consisted of about 80% rock fragments, gravel, and sand size particles.

The variable infiltration rate of zero to more than 24 inches per hour at the top of bedrock suggests that water infiltration into the bedrock will be highly dependent on the location and depth of any fractures and joints within the bedrock.

7.0 GEOTECHNICAL ENGINEERING DISCUSSION & RECOMMENDATIONS

7.1 General

The geotechnical engineering discussion and recommendations are based on the project information provided by Wendel and the subsurface conditions outlined in this report. The following provide generalized recommendations, with more detailed recommendations presented in subsequent sections of this report.

7.1.1 Site Preparation and Earthwork

The initial earthwork and site preparation portion of the project should include: removal of all trees and stumps, topsoil, organic soils, and softer near surface soils; allowing the exposed subgrades to dry, as necessary; compacting and proof-rolling the exposed subgrades; and fill installation as necessary to achieve the design subgrade elevations.

The use of on-site soils for raising site grades is acceptable, provided the soils are free of topsoil, organics, and other deleterious material, and it can be properly placed and compacted in a controlled manner and to a stable well engineered condition. It should be expected that the on-site clay and silt soils will require drying efforts in order to allow for proper compaction and construction of a stable subgrade.

7.1.2 Subgrade Drainage

The subgrade soil conditions are considered to have generally “poor” to “very poor” drainage characteristics. As demonstrated by the infiltration tests completed within the soils, the clay and silt type soils will not adequately allow surface waters resulting from precipitation and seasonal snow melt events to effectively percolate vertically through the subgrade soils. These conditions can result in poor drainage beneath the athletic fields; at-grade mat / slab type foundations; concrete sidewalks; basketball / pickle ball courts; and asphalt pavement parking lots and roadways. Waters that are allowed to accumulate within the Structural Fill / Subbase Stone layers can result in frost heaving as well as weakened subgrade conditions. Accordingly, proper engineering controls and sloping of the subgrades should be incorporated into the design of the sports field complex to provide for adequate drainage.

7.1.3 Spread Foundations

Based on the relatively shallow depth to bedrock within the limits of the proposed building addition, new buildings, and other structures, and the somewhat softer condition of the indigenous soils, it is recommended that all spread foundations be designed to bear directly on the Limestone bedrock, following excavation and removal of all overburden soils which overlie the bedrock surface, and any required bedrock excavation. Excavations to construct the spread foundations could potentially encounter some perched groundwater within the more granular soils or zones of fractured bedrock. When encountered, appropriate dewatering measures should be implemented to allow for construction to proceed in the dry.

7.1.4 Drilled Pier Foundations

The light poles, backstops, or other structures could be supported on drilled pier foundations, bearing on or within the Limestone bedrock. Due to variable depth of the overburden soils, and its somewhat softer condition, the drilled piers can be socketed into the Limestone bedrock to derive additional lateral resistance, if necessary.

7.1.5 At-Grade Mat Foundations

The lightly loaded dugouts and bleachers can be supported on at-grade mat / slab type foundations, following subgrade preparation and filling. A minimum 15 inch thick layer of Structural Fill, separated from the subgrades with a suitable stabilization/separation geotextile, such as Mirafi 600X is recommended beneath the at-grade mat / slab type foundations. Underdrains should be incorporated into the design, to maintain the Structural Fill layer in a drained condition, and limit frost heave.

7.1.6 Bedrock Excavation Considerations

The excavation of the Limestone bedrock could be required for any below grade stormwater management areas or deeper utilities. The bedrock surface within some of the borings was noted to be fractured and had high water infiltration rates, while within other borings, no fractured rock was observed and no water infiltration occurred. In addition, the bedrock cored is of a hard and sound condition, with a “good” to “excellent” rock mass quality. Accordingly, it is only expected that the upper 6 to 12 inches of bedrock might be rippable with a large excavator equipped with rock teeth, and only within portions of the site. Within other areas, it will first be required to break and loosen the bedrock prior to excavation, using hydraulic/pneumatic breakers (“hoe rams”), or rock grinders.

Drilling and blasting methods may be acceptable for the utilities or stormwater management areas, provided that it does not impact adjacent existing structures and utilities, or proposed subgrade support for the new buildings, utilities, pavements, or other structures. The use of drilling and blasting methods to loosen the rock within the limits of the buildings or other structures is not recommended, because it is possible that some uncontrolled rock heave or over-breakage could occur that could impact the integrity of the proposed foundation bearing grades.

7.1.7 Seismic Site Conditions

Based on the subsurface conditions encountered, the site can be classified as **Seismic Site Class "B - Estimated"** in accordance with the criteria in the New York State Building Code.

7.2 Subgrade Preparation and Site-Wide Filling

The site preparation work should be performed during seasonally dry periods to minimize potential degradation of the subgrade soils and undercuts which may be required to establish a stable base for construction. The existing clay and silt soils encountered at the site are sensitive and can degrade and lose strength when they are wet and disturbed by construction equipment traffic. Accordingly, efforts should be made to maintain the subgrades in a dry and stable condition at all times, and minimize construction traffic directly over these soils. These efforts could include:

- Installation of drainage swales and underdrains (i.e. "French drains") to intercept and divert surface runoff and any groundwater away from the construction areas;
- Proper grading and sloping of the subgrade and "sealing" of the surface with a smooth drum roller, at the end of each day or when rain is anticipated to promote runoff; and
- Restricting construction equipment traffic from traveling directly over the subgrade surfaces, especially when they are wet. Any subgrades, which become damaged, rutted, or unstable should be undercut and repaired as necessary prior to placement of the overlying fill courses.

The earthwork and site preparation portion of the project, should initially include: removal of all trees and stumps, topsoil, organic soils, and any softer or wet soils. If unsuitable soils are encountered at the subgrade elevation, some additional undercutting could become necessary to establish a firm and stable subgrade condition for installation of subgrade fill. Upon completion of the site stripping, the exposed soil subgrades should be allowed to dry as necessary, and then be thoroughly compacted and densified. Tracking of the surface with a bulldozer or discing could become necessary to assist with drying efforts, depending on the time of year construction takes place. The subgrade compaction should be performed prior to any required fill placement, using a vibratory smooth drum roller weighing at least 10 tons. The roller should complete at least four passes over the exposed subgrades for the compaction/densification operation.

Following compaction, the subgrades should then be proof-rolled to determine if any soft or unstable conditions exist at the exposed subgrade. The proof-rolling should be performed just prior to the overlying fill placement using a smooth steel drum roller weighing at least 10 tons. The subgrade proof-rolling procedure should be observed and evaluated by qualified geotechnical personnel. Any loose, soft, wet, unstable or otherwise unsuitable areas, should be undercut to a suitable grade and the area stabilized with the placement of a stabilization geotextile and suitable fill material. The placement of an initial lift of oversized stone fill material (i.e. "surge stone", "shot rock", No.4 & No.5 Stone, etc.) encased in stabilization geotextile top and bottom, may be necessary in some cases to help stabilize the subgrades.

Following acceptance of the subgrade soil conditions, site-wide filling can commence. The majority of the site filling and grading necessary to establish the new fields and building subgrade elevations should be completed at least one month in advance of the final subgrade preparation, as well as foundation and utility construction, in order to limit potential post construction settlement.

The use of on-site soils from cut portions of the site, can be used for raising site grades is acceptable, provided the soils can be properly placed and compacted in a controlled manner and to a stable well engineered condition. It should be expected that the on-site clay and silt soils will require drying efforts in order to allow for proper compaction and construction of a stable subgrade. Therefore the use of the on-site soils for filling is expected be difficult to work with during wet weather and seasonally inclement conditions. Based on these considerations, the use imported Suitable Granular Fill or Structural Fill as described in Section 9.0 of this report would be a better option for raising site grades, particularly within the limits of any future buildings or structures.

Subgrade fill should be compacted to a minimum of 95 percent of the maximum dry density as measured by the modified Proctor moisture-density relationship (ASTM D 1557). Placement of fill should not exceed a maximum loose lift thickness of 8 to 10 inches. The loose lift thickness should be reduced, as appropriate, in conjunction with the compaction equipment used so that the required density is attained. Subgrade fill should have a moisture content within two percent of the optimum moisture content at the time of compaction and testing.

The subgrade fill should be placed to a stable and well engineered condition, and should not “pump”, “rut” or show signs of movement or significant deflection (i.e. unstable conditions) as it is being constructed. Any existing soil subgrades or fill subgrades, which become damaged, rutted or unstable should be undercut and repaired as necessary prior to placement of overlying fill courses. The fill subgrades should also be properly graded, drained and protected from moisture and frost. Placement of fill over wet, soft, snow covered or frozen subgrades is not acceptable. All fill placement and compaction should be closely monitored and tested on a “full-time” basis by qualified geotechnical personnel.

7.3 Spread Foundations Bearing on Bedrock

Spread foundations bearing on the Limestone bedrock can be used to support the proposed addition to the Bell Center and for supporting the proposed restrooms, concessions, ticket booths, and kiosks within the central portion of the project site, as well as other structures such as bleachers, light poles, and scoreboards.

The spread foundations should be designed to bear directly on the competent Limestone bedrock or on concrete fill placed over the bedrock. The bedrock bearing surface should be free of all soil, loose rock, or otherwise deleterious materials. Suitable bedrock bearing grades can generally be taken as the depth to where auger refusal conditions were encountered, as summarized in Table 1, within Appendix D. The top of competent bedrock will vary away from the boring locations, in some cases, may vary and require adjustments in the suitable subgrade elevation based on actual conditions encountered at the time of construction. Accordingly, close inspection of the foundation bearing grades by qualified geotechnical personnel is recommended at the time of construction.

It may be desirable to level the bedrock bearing surface with concrete fill, prior to construction of the foundations. The concrete fill should extend about 8 to 12 inches horizontally beyond the footing limits for its entire depth. The footing excavations, therefore, will need to be planned and sized accordingly.

It is recommended that continuous footings be at least 1.5 feet in width and column/individual footings should be at least 2.5 feet in width. The recommended foundation embedment depth for exterior foundations bearing on soil is 4.0 feet, below the finished exterior grades for frost protection. Bearing the foundations directly on clean suitable bedrock or on concrete fill placed over clean sound bedrock, with an embedment of less than 4.0 feet, should be suitable for frost protection in this case. However, the Town of Amherst Building Department should be consulted to confirm that additional embedment or rock anchors are not necessary, as the resulting embedment depth could be less than 4.0 feet in some cases, particularly for the Bell Center addition.

Spread foundations constructed on competent Limestone bedrock, can be sized based on a maximum net allowable bearing pressure of 15,000 pounds per square foot (psf). Based on the minimum recommended foundation widths, as well as the anticipated building loads, actual foundation bearing pressures are expected to be less. Foundations, which are sized and constructed in accordance with our recommendations, should undergo insignificant total settlement.

7.4 Drilled Pier Foundations Bearing on or within Bedrock

Drilled pier foundations (i.e. drilled, cast in-place caisson foundations) bearing on or within the Limestone bedrock can be used as an alternative to spread foundations. Drilled piers should be seated a nominal 2 to 3 inches into the Limestone bedrock (i.e. extend to caisson auger refusal) and be monitored by qualified geotechnical personnel to ensure that the piers are bearing on the competent, sound, bedrock surface. Suitable bedrock bearing grades can generally be taken as the depth to where auger refusal conditions were encountered, as summarized in Table 1, within Appendix D. The top of competent bedrock will vary away from the boring locations, in some cases, may vary and require adjustments in the suitable subgrade elevation based on actual conditions encountered at the time of construction.

Drilled pier foundations, bearing on sound, competent Limestone bedrock can be sized based on an allowable end bearing pressure of 15 tons per square foot (i.e. 30 kips per square foot). A minimum pier diameter of 24 inches is recommended. Drilled piers should be spaced no closer than 3 pier diameters, center to center. Drilled piers constructed on the bedrock, with the above design conditions, and in accordance with our recommendations should undergo insignificant total settlement. All drilled piers should be embedded a minimum of 4 feet below the finished grades for frost protection.

7.5 Foundation Lateral, Overturning and Uplift Resistance

7.5.1 General / Factors of Safety

Spread foundations and drilled pier foundations should be designed for a factor of safety of 2.0 against movement, under sustained lateral and overturning loading conditions. The factor of safety against lateral and overturning movement can be reduced to 1.5 for transient loading conditions. The acceptable lateral movement at the top of the foundation should also be considered by the designer based on a load deflection analysis.

7.5.2 Spread Foundations

Lateral soil resistance, for spread foundations, which are backfilled using Structural Fill or Suitable Granular Fill, can be computed based on passive earth pressures, using a passive earth pressure coefficient (K_p) of 2.7 and a soil unit weight of 125 pounds per cubic foot. In addition to the passive soil resistance, sliding resistance can be computed based on a bedrock subgrade / foundation interface friction factor of 0.60. Additional lateral resistance can be provided by rock anchors, drilled and grouted into the Limestone bedrock.

Uplift design, for spread foundations, should be based on the uplift resistance of the backfill soils and the foundation structure. The weight of the soil column above the foundation, extending out at a maximum angle of 20 degrees, from the vertical line above the edge of the foundation, can be added to the weight of the foundation when computing the uplift resistance. The weight of the soil column may be computed based on a unit weight of 125 pounds per cubic foot provided the backfill is a Structural Fill or Suitable Granular Fill, which is placed and compacted in accordance with our recommendations presented in Section 9.0. Additional uplift resistance can be provided by rock anchors, drilled and grouted into the Limestone bedrock.

7.5.3 Drilled Pier Foundations

Lateral soil resistance, for drilled pier foundation, which are cast against the overburden soils, can be computed using an undrained shear strength (i.e. cohesion) of 1,000 pounds per square foot and a soil unit weight of 110 pounds per cubic foot. Due to the limited embedment depth within the soils, and it somewhat softer condition, we recommend neglecting any uplift resistance within the overburden.

If necessary, the drilled piers can be socketed into the bedrock to provide additional lateral and uplift resistance. However, the upper 1.5 feet of the bedrock socket should be ignored when calculating the lateral and uplift resistance, due to potential irregularities at the bedrock surface.

Lateral resistance, for the portion of the drilled pier within the bedrock can be computed based on an angle of internal friction of 45 degrees (passive earth pressures coefficient K_p of 5.8), an undrained shear strength of 5,000 pounds per square foot, and a bedrock unit weight of 160 pounds per cubic foot. An allowable uplift side shear capacity, for the portion of the drilled pier within the rock socket, of 2,000 pounds per square foot can be used.

7.5.4 Groundwater Conditions

For design purposes, we recommend that groundwater conditions be assumed to exist at a depth of one foot below the ground surface to account for temporary saturated soil conditions following heavy precipitation events or seasonally wet periods. Therefore, submerged or saturated soil unit weights should be used in the foundation analyses for all soils and bedrock beneath a depth of one foot. The submerged unit weight should be calculated by subtracting 62.4 pounds per cubic foot from the total unit weights provided. This is the same as effective / buoyant unit weight.

7.6 At-Grade Mat / Slab Foundation for Dugouts and Bleachers

At-grade mat / slab type foundations can be used for supporting the dugouts and bleachers. Following excavation, the exposed fill soil subgrades should be prepared and evaluated in accordance with the recommendations provided in Section 7.2 of this report.

A suitable stabilization/separation geotextile (i.e., Mirafi 600X or approved suitable equivalent) should be installed over the approved subgrades, followed by a minimum of 15 inches of Structural Fill (non-frost susceptible material), to provide a more uniform and stable subgrade; reduce the foundation stresses acting on the soils; and provide for drainage. The thickness and reinforcing of the at-grade mat/slab type foundation can be designed using a modulus of subgrade reaction of 150 pounds per cubic inch at the top of the Structural Fill layer.

The Structural Fill layer placed beneath the mat/slab foundation should extend horizontally at least 15 inches beyond the outside face of the foundation, unless perimeter frost walls are provided. This will need to be considered in sizing the excavation required. The Structural Fill will help limit potential frost action beneath the foundation. In addition, a subgrade underdrain(s) should be provided to allow drainage of the Structural Fill and to further help minimize the potential for frost action. The underdrain should drain to a suitable storm sewer or other drainage relief point. Recommendations for underdrains are provided in Section 7.11.2.

7.7 Seismic Design Considerations

Based on the subsurface conditions encountered in the borings, the project site can be classified as Seismic Site Class “B - Estimated” in accordance with ASCE 7-16, Table 20.3-1, as referenced in the 2020 Building Code of New York State. Therefore, seismic design can be based on this seismic site classification.

The spectral response accelerations at the project site were obtained by ATL using the OSHPD web site application <https://seismicmaps.org/>. Using the site location, the spectral response accelerations are 0.171g for the short period (0.2 second) response (S_S) and 0.045g for the one second response (S_1). For design purposes, these spectral response accelerations were then adjusted for the Seismic Site Class “B – Estimated” soil profile determined for the project site.

The adjusted spectral response accelerations for Site Class “B - Estimated” are as follows:

- Short Period Response (S_{MS}) - 0.171g
- 1 Second Period Response (S_{M1}) - 0.045g

The corresponding five percent damped design spectral response accelerations (S_{DS} and S_{D1}) are as follows:

- S_{DS} - 0.114g
- S_{D1} - 0.030g

7.8 Slab-on-Grade Floors

Following subgrade preparation, and any site filling, the slab-on-grade floors should be constructed over a minimum 12-inch thick layer of Subbase Stone, separated from the existing soil subgrades with a suitable stabilization/separation geotextile, such as Mirafi 600X. The slab-on-grade floors can be designed using a modulus of subgrade reaction of 150 pounds per cubic inch at the top of the Subbase Stone.

The floor slabs will be constructed above the finished site grades. Therefore, the use of a moisture barrier does not appear warranted, unless otherwise recommended by the finished flooring manufacturer, or as required to meet interior air moisture requirements. It is recommended that the slab-on-grade floors be constructed such that they float on the subbase and subgrades, and are not structurally connected to wall or column footings, to limit potential

differential settlement effects, unless the slab column interface is designed with sufficient reinforcement to bridge potential differential settlement effects at these interfaces.

7.9 Synthetic Athletic Field Considerations

The synthetic turf athletic field system can be constructed over suitable existing soil subgrades, following proper subgrade preparation as outlined in Section 7.2 and any site filling required to raise site grades. Any unsuitable or unstable soil conditions identified during compaction and proof-rolling should be removed and replaced with new fill materials.

The subgrade soil conditions within the limits of the proposed synthetic turf athletic fields are expected to consist primarily of clays and silts with varying amounts of intermixed sand and gravel. The existing near surface soils generally had a “soft” to “medium” consistency with SPT “N” values ranging generally from 3 to 8. Based on these conditions, it is recommended that a minimum 12 inch thick layer of compacted Structural Fill, along with an underlying stabilization / drainage geotextile with a geo-grid should be installed beneath the proposed athletic field base courses that are recommended by the athletic field designer. This will provide for a stiffer subgrade condition. Tensar Corporation has a product that combines a drainage type geotextile (for separation and drainage), combined with a geo-grid (for reinforcement). If used, we would recommend the Tensar - Filter Grid FG60, or equivalent.

If the athletic field design will include a stormwater drainage stone layer of at least 12 inches thick beneath the field base courses, then the recommended 12 inch thick layer of Structural Fill, described above, can be eliminated.

As noted, the overburden soils have poor drainage characteristics, which was confirmed by the infiltration testing. Accordingly, proper engineering controls should be incorporated into the athletic field design to provide for adequate drainage. We have outlined the following options which can be considered.

1. Install an underdrain system consisting of a series of perforated / slotted underdrain pipes within drainage stone lined trenches. We recommend the use of a non-woven geotextile (i.e. Mirafi 160 N or equivalent) to separate the drainage stone material within the underdrain trenches from the underlying and adjacent in-situ soils. Underdrain construction should be as recommended below for the pavement area construction.
2. Install a geosynthetic drainage system beneath the athletic field components consisting of a drainage geonet bound by a non-woven drainage geotextile on both sides. The water collected within the geosynthetic drainage layer would then be conveyed into a series of subsurface drainage pipes. If a geosynthetic drainage system is incorporated, then the stabilization/separation geotextile recommended beneath the Structural Fill layer, as discussed above, can be eliminated.

For both of these options, we recommend the athletic field subgrades be graded with a minimum of a 1.5% to 2% slope to promote positive subsurface drainage to the underdrain collection system(s). A stormwater collection and conveyance system consisting of drainage swales, drainage gutters and/or drainage inlets should also be incorporated as necessary to collect and convey the surface water from the periphery of the athletic field and pavement areas.

7.10 Basket Ball / Pickle Ball Courts

We recommend the basketball and pickle ball courts be constructed over a minimum 15 inch thick layer of Structural Fill, installed over properly prepared subgrades, and separated from the subgrades with a suitable stabilization/separation geotextile, such as Mirafi 600X. Underdrains should be included to maintain the subbase stone in a drained condition. Recommendations for subgrade preparation are provided in Section 7.2, and recommendations for underdrains are provided in Section 7.11.2.

7.11 Asphalt Pavement Design and Construction

7.11.1 Design Recommendations

Asphalt pavement parking lots are planned at several locations around the perimeter of the site. The asphalt pavement section can be constructed following subgrade preparation and filling described in Section 7.2 of this report.

The parking lots are expected to be used primarily by passenger vehicles with occasional maintenance vehicles and / or buses. We anticipated a design value of 50,000 to 75,000 equivalent 18 kip axle loads (EALs) as being appropriate for an approximate 20 to 25 year design life of the pavement structure. The design pavement section was evaluated based on a “medium” consistency silty clay soils. An effective Roadbed Soil Resilient Modulus (Mr) of 2,300 psi was used in the analyses as being generally representative of the expected subgrade soil conditions following site preparation.

Light Duty Asphalt Concrete Pavement

- 1.5 inches - Top Course
- 3.0 inches - Binder Course
- 12 inches (parking areas) – Subbase Course*
- 15 inches (entrances) – Subbase Course*
- Prepared Subgrade
- Geotextile

** The Subbase Course thickness of at the entrances and driveways should be increased to 15 inches. In addition, it may be necessary to increase the subbase thickness in some areas to improve subgrade conditions and to promote drainage to underdrains, etc., as discussed below.*

Materials for the above pavement structure components should consist of the following:

- A. Asphalt Concrete Top Course - NYSDOT Standard Specifications, Hot Mix Asphalt, 9.5 F2 Top Course.
- B. Asphalt Concrete Binder Course with a Thickness less than 3 inches - NYSDOT Standard Specifications, Hot Mix Asphalt, 19 F9 Binder Course.
- C. Asphalt Concrete Binder Course with a Thickness greater than 3 inches - NYSDOT Standard Specifications, Hot Mix Asphalt, 25 F9 Binder Course.
- D. Subbase Course – Should comply with NYSDOT Standard Specifications, Item No. 304.12 - Type 2 Crushed Stone Subbase, as described in the Material Recommendations section of the Report.

- E. Geotextile - Woven polypropylene stabilization/separation geotextile (i.e., Mirafi 600X or approved suitable equivalent).

7.11.2 Asphalt Pavement Drainage

The installation of underdrains or edge drains are recommended to drain the pavement subbase course within any low points, to limit the potential for frost action and improve pavement structure performance and design life. Alternatively, the pavement subbase course can also be allowed to daylight/drain to an adjacent perimeter drainage swale. This could be accomplished by raising the pavement grade. Drainage of the pavement subgrades can be achieved by grading the subgrade to a slope of at least 2 percent to allow drainage to the underdrains or drainage swale.

Underdrains, if used, should include a non-woven geotextile (i.e. Mirafi 160N or suitable equivalent), selected considering drainage and filtration, installed around drainage stone surrounding a slotted or perforated drain pipe. The drainage stone should be sized in accordance with the pipe slotting or perforations. A crushed aggregate (½-inch washed gravel or stone) is generally acceptable for slotted underdrain pipe. The underdrain pipes should be set in the bottom of the subbase layer, or preferably below the top of the soil subgrade elevation. The drainage stone and surrounding geotextile should extend above the underdrain pipe and into the subbase layer. Underdrain pipes should be connected to the site storm water drainage system.

7.11.3 Asphalt Pavement Construction

Placement of the pavement Subbase course can proceed, following proper subgrade preparation and subgrade filling as described in the following section. Installation of adjacent geotextile panels should have minimum overlap of 12 to 18 inches. The Subbase Stone should be placed and compacted in accordance with the recommendations in the Material Recommendations section of this report.

Construction of the Asphalt Concrete Pavement should be performed in accordance with NYSDOT Standard Specification Section 400. The Binder and Top Course compaction / evaluation should comply with NYSDOT Standard Specifications – 80 Series Compaction procedures, as a minimum, or as otherwise required by the jurisdictional agency. In addition, placement of asphalt concrete courses should not be permitted on wet or snow covered surfaces or when the subgrade surface is less than 40° F.

7.12 Portland Cement Concrete Pavement Design and Construction

7.12.1 Design Recommendations

Pavement design recommendations are provided for the concrete walkways throughout the site, which will be used only by pedestrian traffic only. The pavement section recommended below assumes that the subgrades will be prepared following the recommendations provided in Section 7.2 of this report.

Rigid Portland Cement Concrete Pavement – Pedestrian Use Only

- 4 inch thick Portland Cement Concrete Slab with appropriate reinforcement
- 8 inches - Subbase Course*
- Stabilization / Separation Geotextile
- Prepared Subgrade

** The Subbase Course thickness should be increased by 12 inches if maintenance vehicles are anticipated to travel on the sidewalks. In addition, it may be necessary to increase the subbase thickness in some areas to improve subgrade conditions and to promote drainage to underdrains, etc., as discussed below.*

Materials for the above rigid concrete pavement structure components should consist of the following:

- A. Portland Cement Concrete - 4,000 psi minimum compressive strength Portland cement concrete meeting the requirements of NYSDOT Standard Specifications Section 501.
- B. Subbase Course – Should comply with NYSDOT Standard Specifications, Item No. 304.12 - Type 2 Crushed Stone Subbase, as described in the Material Recommendations section of the Report.
- C. Geotextile - Woven polypropylene stabilization/separation geotextile (i.e., Mirafi 600X or approved suitable equivalent).

Control joints, including spacing, and reinforcement of the concrete slabs should be designed in accordance with ACI 330R – “Guide for Design and Construction of Concrete Parking Lots”. Control joints and reinforcement could include: Macro Synthetic Fibers, welded wire mesh reinforcement meeting the requirements of NYSDOT Standard Specifications Section 709-02, and / or plate dowels or dowel baskets, such as manufactured by PNA Construction Technologies, as determined appropriate by the designer.

7.12.2 Portland Cement Concrete Pavement Drainage

The same recommendations provided for asphalt pavement drainage (section 7.11.2) should be followed for the Portland cement concrete pavement section.

7.12.3 Portland Cement Concrete Pavement Construction

Placement of the pavement subbase stone can proceed, following proper subgrade preparation and subgrade filling as described in Section 7.2. Installation of adjacent geotextile panels should have minimum overlap of 12 to 18 inches. Construction of the Rigid Concrete Pavement should be performed in accordance with NYSDOT Standard Specifications Section 502. In addition, placement of asphalt concrete courses and rigid concrete pavement should not be permitted on wet or snow covered surfaces or when the subgrade surface is less than 40° F.

8.0 SITE PREPARATION AND CONSTRUCTION

8.1 Construction Dewatering

Construction dewatering will be required for surface water control and for any excavations which encounter groundwater conditions. Seasonal fluctuations in general and perched groundwater conditions should be expected. Surface water should be diverted away from open excavations and prevented from accumulating on exposed subgrades. It is anticipated that diversion berms, drainage ditches, and proper site grading should generally be sufficient to control surface water conditions.

Excavations which encounter perched or general groundwater conditions should be properly dewatered to allow for construction to proceed in the dry. The amount of groundwater that could be encountered will depend on the excavation depth, the type and depth of shoring (if used), the surrounding soil conditions, and the actual groundwater conditions at the time of construction. It

is recommended that the Contractor excavate some test pits in advance of the excavation work, particularly where deeper excavations are required, to ascertain potential groundwater conditions and plan the dewatering that will be necessary.

Groundwater dewatering plans should include implementation of measures to control erosion, sedimentation, and the migration of soil fines. All dewatering activities should comply with New York State Department of Environmental Conservation (NYSDEC) stormwater discharge requirements and/or applicable federal and local regulations for construction.

8.2 Excavation and Backfilling

All soils and loose or disturbed rock material should be removed from the foundation bearing grades. Any voids or fractures, which may be present at the bedrock bearing grade surface, should be filled with grout. Excavation of the bedrock, if necessary to establish foundation bearing grades, should be performed using methods, which minimize disturbance to the bedrock bearing grades. Therefore, it is recommended that bedrock excavation for proposed foundations be done using a pneumatic or hydraulic breaker or rock grinder, to loosen the bedrock for excavation. The use of drilling and blasting methods to loosen the rock should not be permitted.

Following excavation and cleaning of the bedrock surface, the prepared bearing grades should be observed and evaluated by a representative of Empire. Placement of concrete following observation of the bearing grade may be desirable to level the bearing grade for foundation construction.

After completion of the foundation construction, the excavations should be backfilled as soon as possible and prior to construction of the superstructure. It is recommended that the foundation excavations, within slab-on-grade and pavement areas, be backfilled with a Suitable Granular Fill or Structural Fill, as described in Section 9.0 of this report.

8.3 Drilled Pier Foundation Construction

A general groundwater condition is not expected to be encountered within the overburden soils. However, some perched groundwater conditions could be encountered. Dewatering of drilled pier excavations should be implemented as necessary in order to properly construct the pier structure in the dry.

Alternatively, procedures for constructing the drilled piers below groundwater can also be implemented. However, there is less control during construction in-the-wet, and therefore, there may be greater risk associated with this construction procedure. If this method is used, the hole must be stabilized with a proper drilling slurry and the concrete must be placed in a manner that displaces the slurry from the hole, such as using a tremie. In both cases, installation of temporary casing during drilling will likely be necessary to prevent the sloughing of wet and loose / soft soils into the excavation, particularly with the presence of groundwater conditions. The contractor, however, should be responsible for the means and methods of advancing the excavations to the design depths.

Initially, the excavation should extend to the proposed bedrock bearing grade. Soils, drill cuttings, and bedrock fragments should be removed from the bearing surface. For excavations extending into the bedrock, all loose bedrock should be removed from the bedrock bearing surface. The final bearing surface should be level or near level.

Plumbness of the pier should be maintained within 1% of the total length. The concrete must be placed in a manner that displaces the slurry from the hole, such as utilizing tremie methods. The tremie pipe must be maintained below the water level and at least five feet below the top of the concrete during concrete placement. The fresh concrete must be above the bottom of the casing at all times. Casing removal during concrete placement should proceed in a manner that prevents the concrete from mixing with drilling mud, cave-in of the excavation and/or the formation of voids. The drilled pier construction should be monitored by qualified geotechnical personnel to ensure adequate soil conditions are encountered, and proper installation techniques are followed.

8.4 Protection of Existing Structures

Existing building foundations, foundation walls, underground utilities, roadways / parking areas, sidewalks, and other infrastructure that will remain, should be protected during excavation and construction of the additions. The excavations should also be planned and carried out in a way such that any foundation drainage systems along the existing foundation walls are not adversely impacted, and can continue to function properly after construction of the new foundations. Should it be necessary to extend any excavations below the bearing grade of existing building foundations, the existing foundations must then be properly underpinned, sheeted, braced, etc. Proper bracing of existing foundation walls, which are exposed during excavation, must also be considered. It is recommended that plans be prepared to protect the existing structures as appropriate.

8.5 Testing and Inspection

All sitework and foundation installations should be continuously monitored by a Geotechnical Engineer to verify the stability and uniformity of the subgrade soil, to identify the presence of deleterious fill, and to ensure that adequate soil bearing capacity is obtained.

The final site grading and foundation plans and project specifications should be reviewed by ATL, as the Geotechnical Engineer of Record, to verify that there has not been a misinterpretation of this report and/or ATL's understanding of the project.

We recommend that ATL, as the Geotechnical Engineer of Record, be retained to perform Special Inspections in accordance with the Building Code of New York State during site earthwork and foundation installations. An ATL geotechnical representative familiar with the findings and recommendations of this report will be able to assess the subsurface conditions encountered during construction, provide necessary remedial recommendations, and verify that adequate bearing capacities and proper foundation installation requirements are achieved.

All foundation construction and backfilling should be monitored and tested by an Independent Testing Agency, conforming to ASTM E-329, "Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection." ATL conforms to ASTM E-329 and can be retained to perform required construction phase monitoring and testing services, including applicable Special Inspections and Structural Tests in accordance with the Building Code of New York State.

9.0 MATERIAL RECOMMENDATIONS

9.1 Structural Fill

Structural Fill which is placed beneath foundations, should consist of a crusher run stone, which is free of clay, organics and friable or deleterious particles. The material should comply with NYSDOT Standard Specifications, Item No. 304.12 - Type 2 Subbase with the following gradation requirements.

Item 304.12 – Type 2 Subbase (crusher run stone)	
Sieve Size Distribution	Percent Finer by Weight
2 inch	100
¾ inch	25 to 60
no. 40	5 to 40
no. 200	0 to 10

The Structural Fill should be compacted to a minimum of 95 percent of the maximum dry density as measured by the modified Proctor test (ASTM D1557). Placement of fill should not exceed a maximum loose lift thickness of 8 to 10 inches. The loose lift thickness should be reduced in conjunction with the compaction equipment used so that the required density is attained. The Structural Fill / Subbase Stone should have a moisture content within two percent of the optimum moisture content at the time of compaction.

9.2 Subbase Stone

The subbase stone course placed as the aggregate beneath the slab-on-grade and pavement construction, should conform to the same material requirements as Structural Fill as stated above, and should be installed to the same requirements.

9.3 Suitable Granular Fill

Suitable, well graded from coarse to fine, soil material classified as GW, GP, GM, SW, SP and SM soils using the Unified Soil Classification System (ASTM D-2487) and having no more than 85 percent by weight material passing the No. 4 sieve, no more than 20 percent by weight material passing the No. 200 sieve and which is generally free of particles greater than 4-inches, will be acceptable as Suitable Granular Fill. It should also be free of topsoil, asphalt, concrete rubble, wood, debris, and other deleterious materials.

Suitable Granular Fill can be used as foundation backfill and as subgrade fill to raise site grades beneath slab-on-grade and pavement construction. Material meeting the requirements of New York State Department of Transportation, Standard Specifications, Item 203.07 – Select Granular Fill is acceptable for use as Suitable Granular Fill. The Suitable Granular Fill should be placed and compacted in accordance with the requirements stated above for the Structural Fill.

10.0 LIMITATIONS

The subsurface investigation logs and this report in its entirety should be provided to the designers and contractors for information and interpretation. The subsurface investigation logs may not be representative of the entire site subsurface condition, but only what was encountered at the individual test locations at the time of the investigation. The subsurface soil, bedrock, and groundwater conditions encountered at the time of construction may be different from those described on the subsurface investigation logs.

This report was prepared to present the findings of our subsurface investigation and engineering evaluation, and to outline concepts to be utilized in foundation design and construction. These concepts may require alterations to meet the specific design and economic considerations for this project.

Prepared by:



Thomas R. Seider, PE
Senior Engineer

TRS/JJD/sw

Reviewed by:



John J. Danzer, PE
Senior Engineer

APPENDIX A

Figure 1 – Site Location Plan

Figure 2 – Boring Location Plan (Existing Conditions)

Figure 3 – Boring Location Plan (Proposed Development)



Note: Figure developed from Google Earth

Figure 1 - Site Location Plan

Drawn by:
TRS

Scale:
Not to scale

Project No.:
BD 099

Date:
03-1-20243

**Proposed Sports Fields
ECC – North Campus
6205 Main Street
Town of Amherst, New York**



ATLANTIC TESTING LABORATORIES, Limited

Albany, NY
Elmira, NY
Rochester, NY

Binghamton, NY
Plattsburgh, NY
Utica, NY

Buffalo, NY
Poughkeepsie, NY
Watertown, NY

Canton, NY
Syracuse, NY



Note: Figure developed from 03/06/2024 Boring Location Plan prepare by Wendel.

Figure 3 – Boring Location Plan (Proposed Development)

Drawn by:
TRS

Scale:
Not to scale

Project No.:
BD 099

Date:
03-1-20243

Proposed Sports Fields
ECC – North Campus
6205 Main Street - Town of Amherst, New York



ATLANTIC TESTING LABORATORIES, Limited

Albany, NY	Binghamton, NY	Buffalo, NY	Canton, NY
Elmira, NY	Plattsburgh, NY	Poughkeepsie, NY	Syracuse, NY
Rochester, NY	Utica, NY	Watertown, NY	

APPENDIX B

SUBSURFACE INVESTIGATION LOGS

DATE START <u>1/23/2024</u> FINISH <u>1/23/2024</u> SHEET <u>1</u> OF <u>1</u>		Atlantic Testing Laboratories, Limited Subsurface Log		HOLE NO. <u>B-1</u> SURF. ELEV <u>693.4'</u> G.W. DEPTH <u>See Notes</u>	
PROJECT: <u>PROPOSED SPORTS PLAYING FIELDS</u>		LOCATION: <u>ECC NORTH CAMPUS</u>			
PROJ. NO.: <u>BD099</u>		<u>6205 MAIN ST., AMHERST, NY</u>			

DEPTH FT.	SMPL NO.	BLOWS ON SAMPLER					SOIL OR ROCK CLASSIFICATION	NOTES
		0/6	6/12	12/18	N	PID		
	1	1	1				TOPSOIL Brown CLAY & SILT; little cmf Sand; trace Organics (moist, medium plasticity)	Topsoil thickness not recorded
		3	4		4		Similar Soils; some cmf Sand; little cmf Gravel (wet)	
	2	4	50/0.1		REF			
5							Gray LIMESTONE Rock; hard; sound; laminated to thickly bedded	Run #1: 2.7' - 7.7' REC = 100% RQD = 95%
10							Gray LIMESTONE Rock; hard; sound; laminated to thickly bedded	Run #2 7.7' - 12.7' REC = 100% RQD = 90%
15							Boring Complete at 12.7'	No Free Standing Water encountered before coring
20								

N = NO. BLOWS TO DRIVE 2-INCH SPOON 12-INCHES WITH A 140 LB. PIN WT. FALLING 30-INCHES PER BLOW		CLASSIFIED BY: <u>Geologist</u>
DRILLER: <u>J. PORTER</u>	DRILL RIG TYPE : <u>CME 550X</u>	
METHOD OF INVESTIGATION <u>ASTM D-1586 USING HOLLOW STEM AUGERS</u>		

DATE START 1/24/2024 FINISH 1/24/2024 SHEET 1 OF 1		Atlantic Testing Laboratories, Limited Subsurface Log				HOLE NO. B-2 SURF. ELEV 691.0' G.W. DEPTH See Notes					
PROJECT: PROPOSED SPORTS PLAYING FIELDS PROJ. NO.: BD099		LOCATION: ECC NORTH CAMPUS 6205 MAIN ST., AMHERST, NY									
DEPTH FT.		SMPL NO.		BLOWS ON SAMPLER 0/6 6/12 12/18 N PID			SOIL OR ROCK CLASSIFICATION		NOTES		
		1		1 2			TOPSOIL Brown CLAY & SILT; some cmf Sand; some cf Gravel; trace Organics (moist, medium plasticity)		Driller noted approximately 4" of Topsoil at the surface		
				4 50/0.3 6							
5							Boring Complete at 1.9' with Auger Refusal		No Free Standing Water encountered at boring completion		
10											
15											
20											
N = NO. BLOWS TO DRIVE 2-INCH SPOON 12-INCHES WITH A 140 LB. PIN WT. FALLING 30-INCHES PER BLOW DRILLER: J. PORTER DRILL RIG TYPE : CME 550X METHOD OF INVESTIGATION ASTM D-1586 USING HOLLOW STEM AUGERS											
										CLASSIFIED BY: Geologist	

DATE START 1/18/2024 FINISH 1/18/2024 SHEET 1 OF 1		Atlantic Testing Laboratories, Limited Subsurface Log				HOLE NO. B-3 SURF. ELEV 687.8' G.W. DEPTH See Notes			
PROJECT: PROPOSED SPORTS PLAYING FIELDS		LOCATION: ECC NORTH CAMPUS							
PROJ. NO.: BD099		6205 MAIN ST., AMHERST, NY							
DEPTH FT.		SMPL NO.		BLOWS ON SAMPLER		SOIL OR ROCK CLASSIFICATION		NOTES	
				0/6 6/12 12/18 N PID					
		1		WOH 3		Brown CLAY & SILT; some cmf Sand; some cf Gravel; trace Organics (wet, medium plasticity)		Topsoil thickness not recorded	
		27		50/0.3 30		Boring Complete at 1.8' with Auger Refusal		No Free Standing Water encountered at boring completion	
5								WOH = Weight of Hammer and Rods	
10									
15									
20									

N = NO. BLOWS TO DRIVE 2-INCH SPOON 12-INCHES WITH A 140 LB. PIN WT. FALLING 30-INCHES PER BLOW

DRILLER: J. PORTER

METHOD OF INVESTIGATION ASTM D-1586 USING HOLLOW STEM AUGERS

CLASSIFIED BY: Geologist

DRILL RIG TYPE : CME 550X

DATE START 1/24/2024 FINISH 1/24/2024 SHEET 1 OF 1		Atlantic Testing Laboratories, Limited Subsurface Log 		HOLE NO. B-4 SURF. ELEV 689.6' G.W. DEPTH See Notes				
PROJECT: PROPOSED SPORTS PLAYING FIELDS PROJ. NO.: BD099		LOCATION: ECC NORTH CAMPUS 6205 MAIN ST., AMHERST, NY						
DEPTH FT.	SMPL NO.	BLOWS ON SAMPLER 0/6 6/12 12/18 N PID					SOIL OR ROCK CLASSIFICATION	NOTES
	1	2	50/0.3		REF		TOPSOIL Brown CLAY & SILT; some cmf Sand; little cf Gravel; trace Organics (wet, medium plasticity) Boring Complete at 0.8' with Auger Refusal	Driller noted approximately 4" of Topsoil at the surface No Free Standing Water encountered at boring completion REF = Sample Spoon Refusal
5								
10								
15								
20								
N = NO. BLOWS TO DRIVE 2-INCH SPOON 12-INCHES WITH A 140 LB. PIN WT. FALLING 30-INCHES PER BLOW DRILLER: J. PORTER DRILL RIG TYPE : CME 550X CLASSIFIED BY: Geologist METHOD OF INVESTIGATION ASTM D-1586 USING HOLLOW STEM AUGERS								

DATE START 1/15/2024 FINISH 1/15/2024 SHEET 1 OF 1		Atlantic Testing Laboratories, Limited Subsurface Log				HOLE NO. B-5 SURF. ELEV 687.0' G.W. DEPTH See Notes		
PROJECT: PROPOSED SPORTS PLAYING FIELDS		LOCATION: ECC NORTH CAMPUS						
PROJ. NO.: BD099		6205 MAIN ST., AMHERST, NY						
DEPTH FT.	SMPL NO.	BLOWS ON SAMPLER					SOIL OR ROCK CLASSIFICATION	NOTES
		0/6	6/12	12/18	N	PID		
	1	1	1				TOPSOIL Brown SILT & CLAY; some cmf Sand; little f Gravel; trace Organics (saturated, low plasticity)	Driller noted approximately 4" of Topsoil at the surface
		2	3		3			
	2	5	5				Brown CLAY & SILT; and cmf Sand; little f Gravel (moist, medium plasticity)	REF = Sample Spoon Refusal
		6	17		11		Similar Soils (saturated)	
5	3	50/0.4			REF		Boring Complete at 4.4' with Auger Refusal	No Free Standing Water encountered at boring completion
10								
15								
20								
N = NO. BLOWS TO DRIVE 2-INCH SPOON 12-INCHES WITH A 140 LB. PIN WT. FALLING 30-INCHES PER BLOW								
DRILLER: J. PORTER		DRILL RIG TYPE : CME 550X		CLASSIFIED BY: Geologist				
METHOD OF INVESTIGATION ASTM D-1586 USING HOLLOW STEM AUGERS								

DATE START <u>1/22/2024</u> FINISH <u>1/22/2024</u> SHEET <u>1</u> OF <u>1</u>		Atlantic Testing Laboratories, Limited Subsurface Log		HOLE NO. <u>B-10</u> SURF. ELEV <u>685.8'</u> G.W. DEPTH <u>See Notes</u>	
PROJECT: <u>PROPOSED SPORTS PLAYING FIELDS</u>		LOCATION: <u>ECC NORTH CAMPUS</u>			
PROJ. NO.: <u>BD099</u>		<u>6205 MAIN ST., AMHERST, NY</u>			

DEPTH FT.	SMPL NO.	BLOWS ON SAMPLER					SOIL OR ROCK CLASSIFICATION	NOTES
		0/6	6/12	12/18	N	PID		
5	1	1	1				TOPSOIL Brown Silty CLAY; trace cmf Sand; trace f Gravel; trace Organics (moist, high plasticity)	Driller noted approximately 4" of Topsoil at the surface NQ '2' Size Rock Core
		2	4		3			
	2	4	5				Similar Soils	
		5	50/0.3		10			
10							Gray LIMESTONE Rock; hard; sound; laminated to thickly bedded	Run #1: 3.8' - 8.8' REC = 95% RQD = 85%
15							Boring Complete at 8.8' with Auger Refusal	No Free Standing Water encountered before coring
20								

N = NO. BLOWS TO DRIVE 2-INCH SPOON 12-INCHES WITH A 140 LB. PIN WT. FALLING 30-INCHES PER BLOW		CLASSIFIED BY: <u>Geologist</u>
DRILLER: <u>J. PORTER</u>	DRILL RIG TYPE : <u>CME 550X</u>	
METHOD OF INVESTIGATION <u>ASTM D-1586 USING HOLLOW STEM AUGERS</u>		

DATE START <u>1/12/2024</u> FINISH <u>1/12/2024</u> SHEET <u>1</u> OF <u>1</u>		Atlantic Testing Laboratories, Limited Subsurface Log		HOLE NO. <u>B-13</u> SURF. ELEV <u>690.3'</u> G.W. DEPTH <u>See Notes</u>	
PROJECT: <u>PROPOSED SPORTS PLAYING FIELDS</u>		LOCATION: <u>ECC NORTH CAMPUS</u>			
PROJ. NO.: <u>BD099</u>		<u>6205 MAIN ST., AMHERST, NY</u>			

DEPTH FT.	SMPL NO.	BLOWS ON SAMPLER					SOIL OR ROCK CLASSIFICATION	NOTES
		0/6	6/12	12/18	N	PID		
5	1	1	2				TOPSOIL Brown Silty CLAY; little cmf Sand; trace Organics (moist, high plasticity)	Driller noted approximately 4" of Topsoil at the surface
		3	3		5			
	2	5	8				Similar Soils; trace mf Sand; no Organics	
		8	8		16			
	3	5	6				Similar Soils; some cmf Sand; little cmf Gravel	
		7	10		13			
	4	5	50/0.2		REF		Brown cmf SAND; some f Gravel; some Clay & Silt (wet, non-plastic)	
10							Boring Complete at 6.8' with Auger Refusal	No Free Standing Water encountered at boring completion
15								
20								

N = NO. BLOWS TO DRIVE 2-INCH SPOON 12-INCHES WITH A 140 LB. PIN WT. FALLING 30-INCHES PER BLOW		CLASSIFIED BY: <u>Geologist</u>
DRILLER: <u>J. PORTER</u>	DRILL RIG TYPE : <u>CME 550X</u>	
METHOD OF INVESTIGATION <u>ASTM D-1586 USING HOLLOW STEM AUGERS</u>		

DATE START 1/12/2024 FINISH 1/12/2024 SHEET 1 OF 1		Atlantic Testing Laboratories, Limited Subsurface Log				HOLE NO. B-16 SURF. ELEV 688.2' G.W. DEPTH See Notes		
PROJECT: PROPOSED SPORTS PLAYING FIELDS		LOCATION: ECC NORTH CAMPUS						
PROJ. NO.: BD099		6205 MAIN ST., AMHERST, NY						
DEPTH FT.	SMPL NO.	BLOWS ON SAMPLER 0/6 6/12 12/18 N PID					SOIL OR ROCK CLASSIFICATION	NOTES
	1	3	48				TOPSOIL Gray Weathered Rock Fragments; some Clay & Silt; little cmf Sand; trace Organics (moist, non-plastic)	Driller noted approximately 3" of Topsoil at the surface
		25	50/0.2		73		Gray LIMESTONE Rock; hard; sound; laminated to thickly bedded	Run #1: 1.7' - 6.7' REC = 98% RQD = 85%
5								
10								
15								
20								
N = NO. BLOWS TO DRIVE 2-INCH SPOON 12-INCHES WITH A 140 LB. PIN WT. FALLING 30-INCHES PER BLOW								
DRILLER: J. PORTER		DRILL RIG TYPE : CME 550X		CLASSIFIED BY: Geologist				
METHOD OF INVESTIGATION ASTM D-1586 USING HOLLOW STEM AUGERS								

DATE START 1/16/2024 FINISH 1/16/2024 SHEET 1 OF 1		Atlantic Testing Laboratories, Limited Subsurface Log				HOLE NO. B-18 SURF. ELEV 685.0' G.W. DEPTH See Notes		
PROJECT: PROPOSED SPORTS PLAYING FIELDS		LOCATION: ECC NORTH CAMPUS						
PROJ. NO.: BD099		6205 MAIN ST., AMHERST, NY						
DEPTH FT.	SMPL NO.	BLOWS ON SAMPLER					SOIL OR ROCK CLASSIFICATION	NOTES
		0/6	6/12	12/18	N	PID		
5	1	1	2				TOPSOIL	Topsoil thickness not recorded
							Brown Silty CLAY; little cmf Sand; trace of Gravel (wet, high plasticity)	
		4	4		6			
		2	4	7			Similar Soils; some of Rock Fragments; trace Organics	
		12	50/0.1		19			
10								
15								
20								
N = NO. BLOWS TO DRIVE 2-INCH SPOON 12-INCHES WITH A 140 LB. PIN WT. FALLING 30-INCHES PER BLOW								
DRILLER: J. PORTER		DRILL RIG TYPE : CME 550X		CLASSIFIED BY: Geologist				
METHOD OF INVESTIGATION ASTM D-1586 USING HOLLOW STEM AUGERS								

DATE START 1/11/2024 FINISH 1/11/2024 SHEET 1 OF 1		Atlantic Testing Laboratories, Limited Subsurface Log				HOLE NO. B-19 SURF. ELEV 691.8' G.W. DEPTH See Notes					
PROJECT: PROPOSED SPORTS PLAYING FIELDS PROJ. NO.: BD099		LOCATION: ECC NORTH CAMPUS 6205 MAIN ST., AMHERST, NY									
DEPTH FT.		SMPL NO.	BLOWS ON SAMPLER 0/6 6/12 12/18 N PID				SOIL OR ROCK CLASSIFICATION		NOTES		
5		1	WOH	4				TOPSOIL Brown CLAY & SILT; little cmf Sand; trace f Gravel; trace Rock Fragments; trace Organics (moist, medium plasticity)		Driller noted approximately 8" of Topsoil at the surface	
		5	50/0.3		9						
		2	50/0.1			REF		Gray Rock Fragments; trace Clay & Silt; trace mf Sand (moist, non-plastic)		No Free Standing Water encountered at boring completion WOH = Weight of Hammer and Rods REF = Sample Spoon Refusal	
10								Boring Complete at 2.2' with Auger Refusal			
15											
20											

N = NO. BLOWS TO DRIVE 2-INCH SPOON 12-INCHES WITH A 140 LB. PIN WT. FALLING 30-INCHES PER BLOW

DRILLER: J. PORTER

METHOD OF INVESTIGATION ASTM D-1586 USING HOLLOW STEM AUGERS

CLASSIFIED BY:

Geologist

DRILL RIG TYPE : CME 550X

DATE START 1/16/2024 FINISH 1/16/2024 SHEET 1 OF 1		Atlantic Testing Laboratories, Limited Subsurface Log				HOLE NO. B-20 SURF. ELEV 689.0' G.W. DEPTH See Notes		
PROJECT: PROPOSED SPORTS PLAYING FIELDS		LOCATION: ECC NORTH CAMPUS						
PROJ. NO.: BD099		6205 MAIN ST., AMHERST, NY						
DEPTH FT.	SMPL NO.	BLOWS ON SAMPLER					SOIL OR ROCK CLASSIFICATION	NOTES
		0/6	6/12	12/18	N	PID		
	1	2	50/0.1		REF		TOPSOIL Brown CLAY & SILT; little cmf Sand; trace Rock Fragments; trace Organics (wet, medium plasticity) Boring Complete at 1.1' with Auger Refusal	Topsoil thickness not recorded No Free Standing Water encountered at boring completion REF = Sample Spoon Refusal
5								
10								
15								
20								

N = NO. BLOWS TO DRIVE 2-INCH SPOON 12-INCHES WITH A 140 LB. PIN WT. FALLING 30-INCHES PER BLOW

CLASSIFIED BY: Geologist

DRILLER: J. PORTER

DRILL RIG TYPE : CME 550X

METHOD OF INVESTIGATION ASTM D-1586 USING HOLLOW STEM AUGERS

DATE START 1/19/2024 FINISH 1/19/2024 SHEET 1 OF 1		Atlantic Testing Laboratories, Limited Subsurface Log		HOLE NO. B-23 SURF. ELEV 686.2' G.W. DEPTH See Notes	
PROJECT: PROPOSED SPORTS PLAYING FIELDS PROJ. NO.: BD099		LOCATION: ECC NORTH CAMPUS 6205 MAIN ST., AMHERST, NY			

DEPTH FT.	SMPL NO.	BLOWS ON SAMPLER					SOIL OR ROCK CLASSIFICATION	NOTES
		0/6	6/12	12/18	N	PID		
5	1	4	10				TOPSOIL Brown CLAY & SILT; little cmf Sand; little weathered Rock Fragments; trace f Gravel; trace Organics (moist, medium plasticity) Brown Silty CLAY; little cmf Sand; trace Organics (moist, high plasticity) Similar Soils; trace mf Sand; trace cf Gravel Similar Soils; little cmf Sand; trace f Gravel; trace Rock Fragments	Topsoil thickness not recorded
			26	7		36		
	2	3	4					
		2	3		6			
	3	5	8					
		7	10		15			
	4	6	10					
10		50/0.1			REF		Boring Complete at 7.1' with Auger Refusal	No Free Standing Water encountered at boring completion
15								
20								

N = NO. BLOWS TO DRIVE 2-INCH SPOON 12-INCHES WITH A 140 LB. PIN WT. FALLING 30-INCHES PER BLOW		CLASSIFIED BY: <u>Geologist</u>
DRILLER: <u>J. PORTER</u>	DRILL RIG TYPE : <u>CME 550X</u>	
METHOD OF INVESTIGATION <u>ASTM D-1586 USING HOLLOW STEM AUGERS</u>		

DATE START 1/19/2024 FINISH 1/19/2024 SHEET 1 OF 1		Atlantic Testing Laboratories, Limited Subsurface Log 		HOLE NO. B-24 SURF. ELEV 685.5' G.W. DEPTH See Notes				
PROJECT: PROPOSED SPORTS PLAYING FIELDS		LOCATION: ECC NORTH CAMPUS						
PROJ. NO.: BD099		6205 MAIN ST., AMHERST, NY						
DEPTH FT.	SMPL NO.	BLOWS ON SAMPLER					SOIL OR ROCK CLASSIFICATION	NOTES
		0/6	6/12	12/18	N	PID		
	1	2	2				Brown CLAY & SILT; little cmf Sand; trace Organics (moist, medium plasticity)	Topsoil thickness not recorded
		3	4		5			
	2	3	7				Brown Silty CLAY; little cmf Sand; trace f Gravel; trace Organics (moist, high plasticity)	REF = Sample Spoon Refusal
		50/0.3			REF			
5							Boring Complete at 3.9' with Auger Refusal	No Free Standing Water encountered at boring completion
10								
15								
20								
N = NO. BLOWS TO DRIVE 2-INCH SPOON 12-INCHES WITH A 140 LB. PIN WT. FALLING 30-INCHES PER BLOW								
DRILLER: J. PORTER		DRILL RIG TYPE : CME 550X		CLASSIFIED BY: Geologist				
METHOD OF INVESTIGATION ASTM D-1586 USING HOLLOW STEM AUGERS								

DATE START 1/19/2024 FINISH 1/19/2024 SHEET 1 OF 1		Atlantic Testing Laboratories, Limited Subsurface Log				HOLE NO. B-25 SURF. ELEV 685.5' G.W. DEPTH See Notes		
PROJECT: PROPOSED SPORTS PLAYING FIELDS		LOCATION: ECC NORTH CAMPUS						
PROJ. NO.: BD099		6205 MAIN ST., AMHERST, NY						
DEPTH FT.	SMPL NO.	BLOWS ON SAMPLER 0/6 6/12 12/18 N PID					SOIL OR ROCK CLASSIFICATION	NOTES
5	1	2	2				TOPSOIL Brown CLAY & SILT; trace mf Sand; trace Organics (moist, medium plasticity)	Topsoil thickness not recorded
		3	2		5			
	2	1	2				Brown Silty CLAY; little cmf Sand; trace weathered Rock Fragments; trace Organics (moist, high plasticity)	
		4	3		6			
	3	4	50/0.2		REF		Similar Soils; some weathered Rock Fragments	REF = Sample Spoon Refusal
							Boring Complete at 4.8' with Auger Refusal	No Free Standing Water encountered at boring completion
10								
15								
20								
N = NO. BLOWS TO DRIVE 2-INCH SPOON 12-INCHES WITH A 140 LB. PIN WT. FALLING 30-INCHES PER BLOW								
DRILLER: J. PORTER		DRILL RIG TYPE : CME 550X		CLASSIFIED BY: Geologist				
METHOD OF INVESTIGATION ASTM D-1586 USING HOLLOW STEM AUGERS								

DATE START 1/19/2024 FINISH 1/19/2024 SHEET 1 OF 1		Atlantic Testing Laboratories, Limited Subsurface Log		HOLE NO. B-26 SURF. ELEV 687.3' G.W. DEPTH See Notes	
PROJECT: PROPOSED SPORTS PLAYING FIELDS		LOCATION: ECC NORTH CAMPUS			
PROJ. NO.: BD099		6205 MAIN ST., AMHERST, NY			

DEPTH FT.	SMPL NO.	BLOWS ON SAMPLER					SOIL OR ROCK CLASSIFICATION	NOTES
		0/6	6/12	12/18	N	PID		
5	1	1	16				TOPSOIL Brown Silty CLAY; some cmf Sand; some cf Gravel; trace Organics (moist, high plasticity) Similar Soils; little cmf Sand; little cf Gravel; no Organics	Topsoil thickness not recorded
		6	5		22			
	2	6	7					
		9	13		16			
	3	6	13				Similar Soils	
		7	5		20		Similar Soils; some cmf Sand; little f Gravel	
	4	50/0.2			REF		Boring Complete at 6.2' with Auger Refusal	
10								No Free Standing Water encountered at boring completion
15								
20								

N = NO. BLOWS TO DRIVE 2-INCH SPOON 12-INCHES WITH A 140 LB. PIN WT. FALLING 30-INCHES PER BLOW CLASSIFIED BY: Geologist
 DRILLER: J. PORTER DRILL RIG TYPE : CME 550X
 METHOD OF INVESTIGATION ASTM D-1586 USING HOLLOW STEM AUGERS

DATE START <u>1/15/2024</u> FINISH <u>1/15/2024</u> SHEET <u>1</u> OF <u>1</u>		Atlantic Testing Laboratories, Limited Subsurface Log		HOLE NO. <u>I-1</u> SURF. ELEV <u>688.8'</u> G.W. DEPTH <u>See Notes</u>	
PROJECT: <u>PROPOSED SPORTS PLAYING FIELDS</u>		LOCATION: <u>ECC NORTH CAMPUS</u>			
PROJ. NO.: <u>BD099</u>		<u>6205 MAIN ST., AMHERST, NY</u>			

DEPTH FT.	SMPL NO.	BLOWS ON SAMPLER					SOIL OR ROCK CLASSIFICATION	NOTES
		0/6	6/12	12/18	N	PID		
5	1	2	3				TOPSOIL Brown Silty CLAY; trace mf Sand; trace f Gravel; trace Organics (moist, high plasticity)	Driller noted approximately 3" of Topsoil at the surface
		4	5		7			
	2	50/0.0			REF			
10							Boring Complete at 2.0' with Auger Refusal	No Free Standing Water encountered at boring completion REF = Sample Spoon Refusal S-2: No Recovery Following completion of test boring, driller moved over approx. 4' and drilled an infiltration test hole. 4" PVC infiltration test pipe set at 1.8' below ground surface. Refer to Infiltration Test Data Summary for additional details
15								
20								

N = NO. BLOWS TO DRIVE 2-INCH SPOON 12-INCHES WITH A 140 LB. PIN WT. FALLING 30-INCHES PER BLOW
 CLASSIFIED BY: Geologist

DRILLER: J. PORTER
DRILL RIG TYPE : CME 550X

METHOD OF INVESTIGATION ASTM D-1586 USING HOLLOW STEM AUGERS

DATE START <u>1/23/2024</u> FINISH <u>1/23/2024</u> SHEET <u>1</u> OF <u>1</u>		Atlantic Testing Laboratories, Limited Subsurface Log		HOLE NO. <u>I-6</u> SURF. ELEV <u>686.9'</u> G.W. DEPTH <u>See Notes</u>	
PROJECT: <u>PROPOSED SPORTS PLAYING FIELDS</u>		LOCATION: <u>ECC NORTH CAMPUS</u>			
PROJ. NO.: <u>BD099</u>		<u>6205 MAIN ST., AMHERST, NY</u>			

DEPTH FT.	SMPL NO.	BLOWS ON SAMPLER					SOIL OR ROCK CLASSIFICATION	NOTES
		0/6	6/12	12/18	N	PID		
	1	WOH	2				TOPSOIL Brown Silty CLAY; little cmf Sand; trace Organics (moist, high plasticity)	Topsoil thickness not recorded
		3	5		5		Similar Soils; little cf Gravel; trace Rock Fragments (moist, high plasticity)	WOH = Weight of Hammer and Rods REF = Sample Spoon Refusal
	2	50/0.2			REF			
							Boring Complete at 2.2' with Auger Refusal	No Free Standing Water encountered at boring completion Following completion of test boring, driller moved over approx. 4' and drilled an infiltration test hole. 4" PVC infiltration test pipe set at 1.9' below ground surface. Refer to Infiltration Test Data Summary for additional details.
5								
10								
15								
20								

N = NO. BLOWS TO DRIVE 2-INCH SPOON 12-INCHES WITH A 140 LB. PIN WT. FALLING 30-INCHES PER BLOW

DRILLER: J. PORTER
 METHOD OF INVESTIGATION ASTM D-1586 USING HOLLOW STEM AUGERS

DRILL RIG TYPE : CME 550X

CLASSIFIED BY: Geologist

[illegible]

DATE START <u>1/22/2024</u> FINISH <u>1/22/2024</u> SHEET <u>1</u> OF <u>1</u>		Atlantic Testing Laboratories, Limited Subsurface Log		HOLE NO. <u>I-12</u> SURF. ELEV <u>685.5'</u> G.W. DEPTH <u>See Notes</u>	
PROJECT: <u>PROPOSED SPORTS PLAYING FIELDS</u>		LOCATION: <u>ECC NORTH CAMPUS</u>			
PROJ. NO.: <u>BD099</u>		<u>6205 MAIN ST., AMHERST, NY</u>			

DEPTH FT.	SMPL NO.	BLOWS ON SAMPLER					SOIL OR ROCK CLASSIFICATION	NOTES
		0/6	6/12	12/18	N	PID		
5	1	1	2				TOPSOIL Brown CLAY & SILT; little cmf Sand; trace Organics (moist, medium plasticity)	Driller noted approximately 4" of Topsoil at the surface
		2	4		4			
	2	3	5				Brown Silty CLAY; some cmf Sand; some cf Gravel; trace Organics (wet, high plasticity)	
		8	50/0.2		13			
10							Boring Complete at 3.7' with Auger Refusal	No Free Standing Water encountered at boring completion Following completion of test boring, driller moved over approx. 4' and drilled an infiltration test hole. 4" PVC infiltration test pipe set at 2.6' below ground surface. Refer to Infiltration Test Data Summary for additional details.
	15							
20								

N = NO. BLOWS TO DRIVE 2-INCH SPOON 12-INCHES WITH A 140 LB. PIN WT. FALLING 30-INCHES PER BLOW
 CLASSIFIED BY: Geologist

DRILLER: J. PORTER
DRILL RIG TYPE : CME 550X

METHOD OF INVESTIGATION ASTM D-1586 USING HOLLOW STEM AUGERS

DATE START 1/19/2024 FINISH 1/19/2024 SHEET 1 OF 1		Atlantic Testing Laboratories, Limited Subsurface Log				HOLE NO. I-13 SURF. ELEV 685.7' G.W. DEPTH See Notes					
PROJECT: PROPOSED SPORTS PLAYING FIELDS PROJ. NO.: BD099		LOCATION: ECC NORTH CAMPUS 6205 MAIN ST., AMHERST, NY									
DEPTH FT.		SMPL NO.		BLOWS ON SAMPLER 0/6 6/12 12/18 N PID			SOIL OR ROCK CLASSIFICATION		NOTES		
5		1		WOH 1			TOPSOIL Brown CLAY & SILT; little cmf Sand; little f Gravel; trace Organics (moist, medium plasticity)		Topsoil thickness not recored.		
		2		3					WOH = Weight of Hammer and Rods		
5		2		5			Brown Silty CLAY; little cmf Sand; little f Gravel (moist, high plasticity)				
		5		5			10				
5		3		4			4			Similar Soils; trace f Gravel; trace Organics	
		8		6			12			Similar Soils ; some cmf Sand; trace Rock Fragments (wet)	
5		4		50/0.4			REF			Boring Complete at 6.4' with Auger Refusal	
10										No Free Standing Water encountered at boring completion	
										Following completion of test boring, driller moved over approx. 4' and drilled an infiltration test hole.	
										4" PVC infiltration test pipe set at 3.7' below ground surface.	
15										Refer to Infiltration Test Data Summary for additional details.	
20											

N = NO. BLOWS TO DRIVE 2-INCH SPOON 12-INCHES WITH A 140 LB. PIN WT. FALLING 30-INCHES PER BLOW
 DRILLER: J. PORTER
 METHOD OF INVESTIGATION ASTM D-1586 USING HOLLOW STEM AUGERS

CLASSIFIED BY: Geologist
 DRILL RIG TYPE : CME 550X

DATE START <u>1/16/2024</u> FINISH <u>1/16/2024</u> SHEET <u>1</u> OF <u>1</u>		Atlantic Testing Laboratories, Limited Subsurface Log		HOLE NO. <u>I-16</u> SURF. ELEV <u>689.0'</u> G.W. DEPTH <u>See Notes</u>	
PROJECT: <u>PROPOSED SPORTS PLAYING FIELDS</u>		LOCATION: <u>ECC NORTH CAMPUS</u>			
PROJ. NO.: <u>BD099</u>		<u>6205 MAIN ST., AMHERST, NY</u>			

DEPTH FT.	SMPL NO.	BLOWS ON SAMPLER					SOIL OR ROCK CLASSIFICATION	NOTES
		0/6	6/12	12/18	N	PID		
							TOPSOIL	Topsoil thickness not recorded.
	1	2	7				Gray weathered ROCK FRAGMENTS; some Silty Clay; little cmf Sand; trace f Gravel; trace Organics (wet, non-plastic)	
		7	9		14			Brown Silty CLAY; some weathered Rock Fragments; little cmf Sand; trace f Gravel (moist, high plasticity)
	2	7	10					
		50/0.1			REF		Boring Complete at 3.1' with Auger Refusal	No Free Standing Water encountered at boring completion Following completion of test boring, driller moved over approx. 4' and drilled an infiltration test hole. 4" PVC infiltration test pipe set at 4.0' below ground surface Refer to Infiltration Test Data Summary for additional details.
5								
10								
15								
20								

N = NO. BLOWS TO DRIVE 2-INCH SPOON 12-INCHES WITH A 140 LB. PIN WT. FALLING 30-INCHES PER BLOW		CLASSIFIED BY: <u>Geologist</u>
DRILLER: <u>J. PORTER</u>	DRILL RIG TYPE : <u>CME 550X</u>	
METHOD OF INVESTIGATION <u>ASTM D-1586 USING HOLLOW STEM AUGERS</u>		

DATE START 1/12/2024 FINISH 1/12/2024 SHEET 1 OF 1		Atlantic Testing Laboratories, Limited Subsurface Log		HOLE NO. I-21 SURF. ELEV 685.2' G.W. DEPTH See Notes	
PROJECT: PROPOSED SPORTS PLAYING FIELDS PROJ. NO.: BD099		LOCATION: ECC NORTH CAMPUS 6205 MAIN ST., AMHERST, NY			

DEPTH FT.	SMPL NO.	BLOWS ON SAMPLER					SOIL OR ROCK CLASSIFICATION	NOTES
		0/6	6/12	12/18	N	PID		
5	1	WOH	2				TOPSOIL Brown CLAY & SILT; little cmf Sand; trace Organics (moist, medium plasticity) Similar Soils; trace f Sand Similar Soils; some weathered Rock Fragments; little cmf Sand	Driller noted approximately 6" of Topsoil at the surface WOH = Weight of Hammer and Rods
		3	3		5			
		2	4	6				
		7	7		13			
		3	10	10				
		15	50/0.4		25			
10							Boring Completed at 5.9' with Auger Refusal No Free Standing Water encountered at boring completion Following completion of test boring, driller moved over approx. 4' and drilled an infiltration test hole. 4" PVC infiltration test pipe set at 3.8' below ground surface. Refer to Infiltration Test Data Summary for additional details.	
15								
20								

N = NO. BLOWS TO DRIVE 2-INCH SPOON 12-INCHES WITH A 140 LB. PIN WT. FALLING 30-INCHES PER BLOW		CLASSIFIED BY: <u>Geologist</u>
DRILLER: <u>J. PORTER</u>	DRILL RIG TYPE : <u>CME 550X</u>	
METHOD OF INVESTIGATION <u>ASTM D-1586 USING HOLLOW STEM AUGERS</u>		

APPENDIX C
LABORATORY TEST RESULTS



ATLANTIC TESTING LABORATORIES

WBE certified company

PROJECT INFORMATION

Client: Wendel
Project: Proposed Sports Playing Fields
ECC North Campus

ATL Report No.: BD099-SL01-03-24
Report Date: March 11, 2024
Date Received: March 1, 2024

UNCONFINED COMPRESSIVE STRENGTH OF INTACT ROCK CORE SPECIMENS ASTM D 7012, Method C

Core ID	Depth (ft)	Diameter (in)	Length (in)	Load Rate (lbs/sec)	Total Load (lbs)	Area (in ²)	Compressive Strength (psi)	Calculated Density (pcf)
B-1	5.2 - 5.5	1.99	3.02	400	46,840	3.11	15,060	167.5
B-7	6.5 - 6.9	1.99	5	400	51,750	3.11	16,640	167.4
B-10	6.6 - 7.0	1.98	4.84	400	53,710	3.08	17,440	164.5
B-16	2.8 - 3.2	1.99	4.2	400	50,250	3.11	16,160	161.8

Reviewed By:

Date:

3/12/2024



ATLANTIC TESTING LABORATORIES

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LABORATORY DETERMINATION OF MOISTURE CONTENT OF SOILS
ASTM D 2216

Page 1 of 1

PROJECT INFORMATION

Client: Wendel
Project: Proposed Sports Playing Fields
ECC North Campus

ATL Report No.: BD099-S01-03-24
Report Date: March 7, 2024
Date Received: March 1, 2024

TEST DATA

Boring No.	Sample No.	Depth (ft)	Moisture Content (%)
I-10	S - 2 ¹	2.0 - 4.0	19.1
I-10	S - 3 ¹	4.0 - 4.9	17.0
I-12	S - 2 ¹	2.0 - 3.7	14.7
I-14	S - 2,3 ¹	2.0 - 5.3	14.2
I-21	S - 2 ¹	2.0 - 4.0	18.0
I-21	S - 3 ¹	4.0 - 5.9	13.7
B-5	S - 2 ¹	2.0 - 4.0	18.9
B-7	S - 1 ¹	0.0 - 2.0	23.6
B-22	S - 1,2 ¹	0.0 - 2.4	20.3
B-13	S - 2 ¹	2.0 - 4.0	18.5

REMARKS

1. The drying temperature was 110°C ± 5°C.
2. No material was excluded from the test sample.

Reviewed By:

Date: 3/7/2024



ATLANTIC TESTING LABORATORIES

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LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOIL ASTM D 4318

PROJECT INFORMATION

Client: Wendel
Project: Proposed Sports Playing Fields
ECC North Campus

ATL Report No.: BD099-S01-03-24
Report Date: March 7, 2024
Date Received: March 1, 2024

TEST DATA

Boring No.	Sample No.	As Received Moisture Content (%)	LL	PL	PI
I-10	2	19.1	28	15	13
I-14	2,3	14.2	25	14	11
I-21	2	18	27	16	11
B-5	2	18.9	33	16	17

SAMPLE INFORMATION

Boring No.	Sample No.	Maximum Grain Size (mm)	Estimated Amount of Sample Retained on No. 40 Sieve (%)	Preparation	Method of Removing Oversized Material
I-10	2	6.3	10	Air Dry	Pulverizing and Screening
I-14	2,3	25	30	Air Dry	Pulverizing and Screening
I-21	2	2	2	Air Dry	Pulverizing and Screening
B-5	2	12.5	25	Air Dry	Pulverizing and Screening

EQUIPMENT INFORMATION

Liquid Limit Procedure:	Multipoint - Method A	☒	Single Point - Method B	☐
Liquid Limit Apparatus:	Manual	☒	Motor Driven	☐
Liquid Limit Grooving Tool Material:	Plastic	☐	Metal	☒
Liquid Limit Grooving Tool Shape:	Flat	☒	Curved (AASHTO Only)	☐
Plastic Limit:	Hand Rolled	☒	Mechanical Rolling Device	☐

REMARKS

- 1 No material was excluded from the test sample.

Reviewed By: 

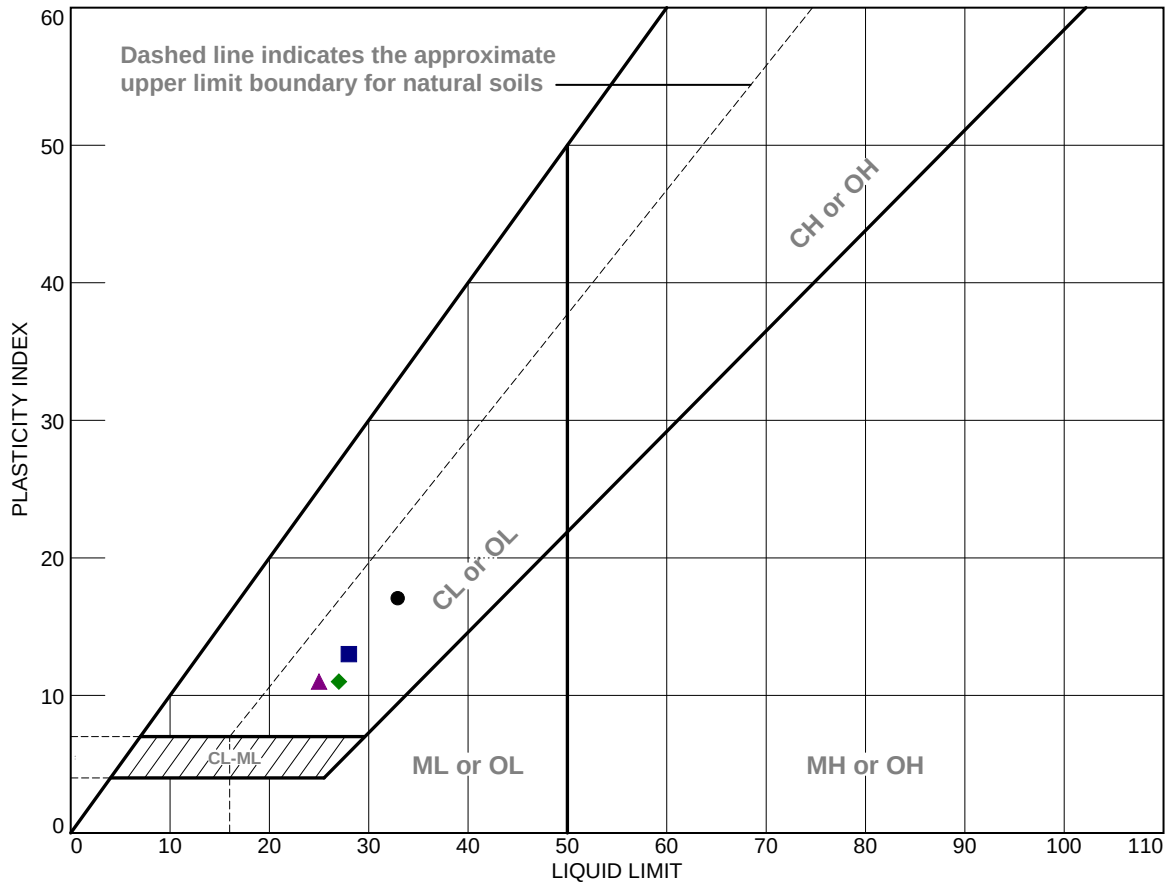
Date: 3/7/2024



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LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	B-5	S-2	2'-4'	18.9	16	33	17	
■	I-10	S-2	2'-4'	19.1	15	28	13	
▲	I-14	S-2 & S-3	2'-5.3'	14.2	14	25	11	
◆	I-21	S-2	2'-4'	18.0	16	27	11	

**ATLANTIC TESTING
LABORATORIES, LIMITED**
Buffalo, New York

Client: Wendel
Project: Proposed Sports Playing Fields - ECC North Campus

Project No.: BD-099

Figure

Tested By: ZM Checked By: PG



ATLANTIC TESTING LABORATORIES

WBE certified company

Particle Size Distribution Report

Project: Proposed Sports Playing Fields - ECC North Campus

Report No.: BD099SL-01-03-24

Client: Wendel

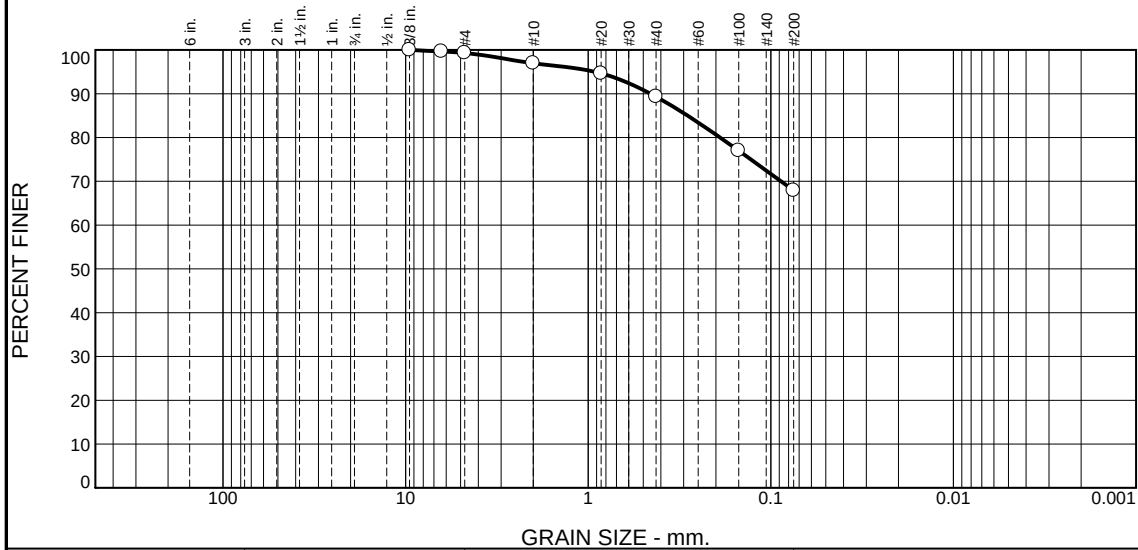
Date: 3-7-2024

Sample No: S-2

Source of Sample: I-10

Location:

Elev./Depth: 2'-4'



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.7	2.3	7.7	21.4	67.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
.375	100.0		
.25	99.6		
#4	99.3		
#10	97.0		
#20	94.6		
#40	89.3		
#100	77.0		
#200	67.9		

Soil Description	
Brown Silty CLAY, some cmf Sand, trace f Gravel	
Atterberg Limits	
PL= 15	LL= 28 PI= 13
Coefficients	
D ₈₅ = 0.2856	D ₆₀ =
D ₃₀ =	D ₁₅ =
C _u =	C _c =
Classification	
USCS= CL	AASHTO= A-6(6)
Remarks	
moisture content = 19.1 %	

* (no specification provided)

ATLANTIC TESTING LABORATORIES, LIMITED

Figure

Reviewed by: Paul Smith

Date: 3-7-2024



ATLANTIC TESTING LABORATORIES

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Particle Size Distribution Report

Project: Proposed Sports Playing Fields - ECC North Campus

Report No.: BD099SL-01-03-24

Client: Wendel

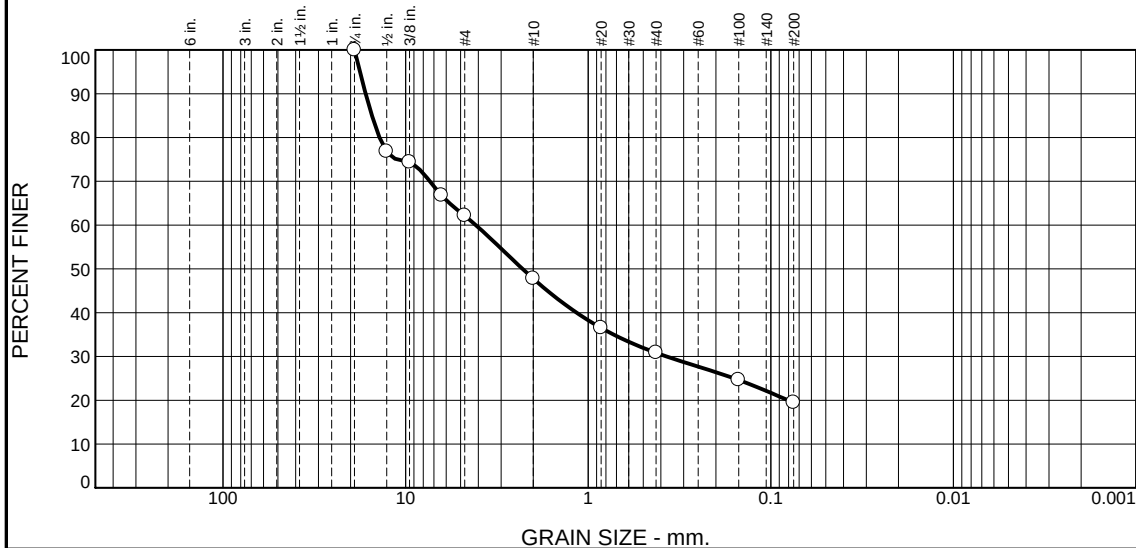
Date: 3-7-2024

Sample No: S-3

Source of Sample: I-10

Location:

Elev./Depth: 4'-4.9'





ATLANTIC TESTING LABORATORIES

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Particle Size Distribution Report

Project: Proposed Sports Playing Fields - ECC North Campus

Report No.: BD099SL-01-03-24

Client: Wendel

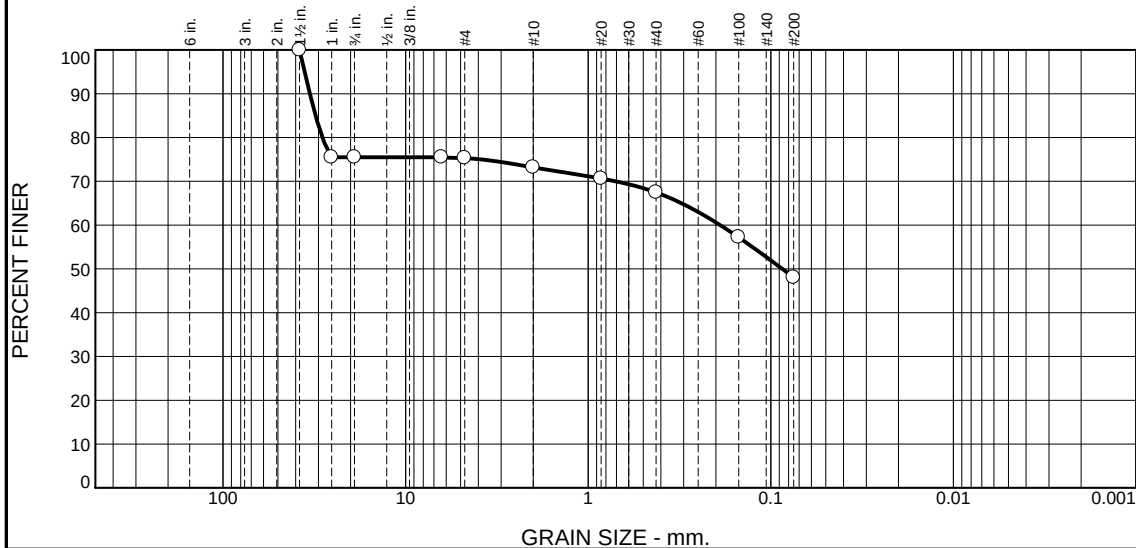
Date: 3-7-2024

Sample No: S-2

Source of Sample: I-12

Location:

Elev./Depth: 2'-3.7'



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	24.5	0.2	2.1	5.7	19.4	48.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
1.5	100.0		
1	75.5		
.75	75.5		
.25	75.5		
#4	75.3		
#10	73.2		
#20	70.6		
#40	67.5		
#100	57.2		
#200	48.1		

Soil Description Brown Silty CLAY, some cmf Sand, little cf Gravel	
Atterberg Limits PL= LL= PI=	Coefficients D ₈₅ = 31.1121 D ₆₀ = 0.1895 D ₃₀ = D ₁₅ = D ₁₀ = C _u = C _c =
Classification USCS= AASHTO=	Remarks moisture content = 14.7 %

* (no specification provided)

ATLANTIC TESTING LABORATORIES, LIMITED

Figure

Reviewed by: _____

Date: 3-7-2024



ATLANTIC TESTING LABORATORIES

WBE certified company

Particle Size Distribution Report

Project: Proposed Sports Playing Fields - ECC North Campus

Report No.: BD099SL01-03-24

Client: Wendel

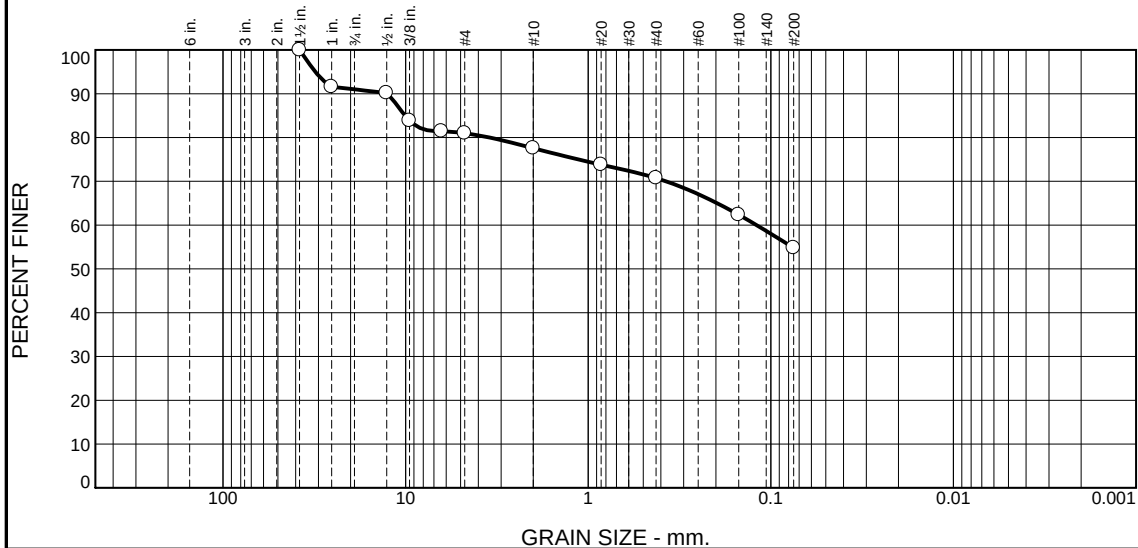
Date: 3-7-2024

Sample No: S-2 & S-3

Source of Sample: I-14

Location:

Elev./Depth: 2'-5.3'



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	9.0	10.0	3.4	6.9	15.9	54.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
1.5	100.0		
1	91.6		
.5	90.2		
.375	83.9		
.25	81.4		
#4	81.0		
#10	77.6		
#20	73.8		
#40	70.7		
#100	62.4		
#200	54.8		

Soil Description

Brown

Atterberg Limits

PL= 14

LL= 25

PI= 11

Coefficients

D₈₅= 10.0741

D₆₀= 0.1198

D₅₀=

D₃₀=

D₁₅=

D₁₀=

C_u=

C_c=

Classification

USCS=

AASHTO=

Remarks

moisture content = 14.2 %

* (no specification provided)

ATLANTIC TESTING LABORATORIES, LIMITED

Figure

Reviewed by: _____

Date: 3-7-2024



ATLANTIC TESTING LABORATORIES

WBE certified company

Particle Size Distribution Report

Project: Proposed Sports Playing Fields - ECC North Campus

Report No.: BD099SL-01-03-24

Client: Wendel

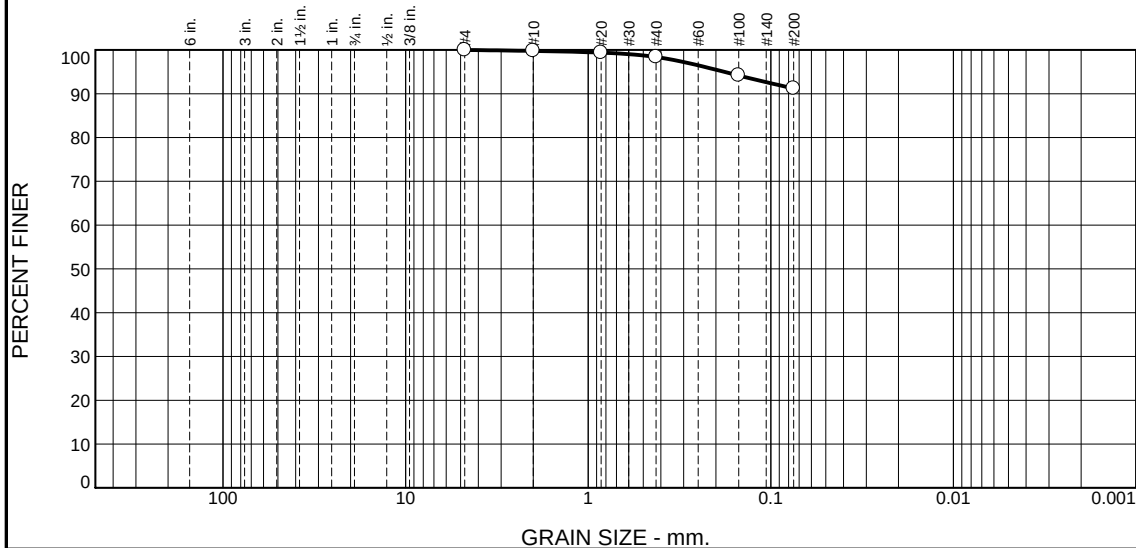
Date: 3-7-2024

Sample No: S-2

Source of Sample: I-21

Location:

Elev./Depth: 2'-4'



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	1.4	7.2	91.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
#4	100.0		
#10	99.8		
#20	99.4		
#40	98.4		
#100	94.2		
#200	91.2		

Soil Description

Brown Silty CLAY, trace cmf Sand

Atterberg Limits

PL= 16

LL= 27

PI= 11

Coefficients

D₈₅=

D₆₀=

D₅₀=

D₃₀=

D₁₅=

D₁₀=

C_u=

C_c=

Classification

USCS=

AASHTO=

Remarks

moisture content = 18.0 %

* (no specification provided)

ATLANTIC TESTING LABORATORIES, LIMITED

Figure

Reviewed by: Paul Smith

Date: 3-7-2024



ATLANTIC TESTING LABORATORIES

WBE certified company

Particle Size Distribution Report

Project: Proposed Sports Playing Fields - ECC North Campus

Report No.: BD099SL-01-03-24

Client: Wendel

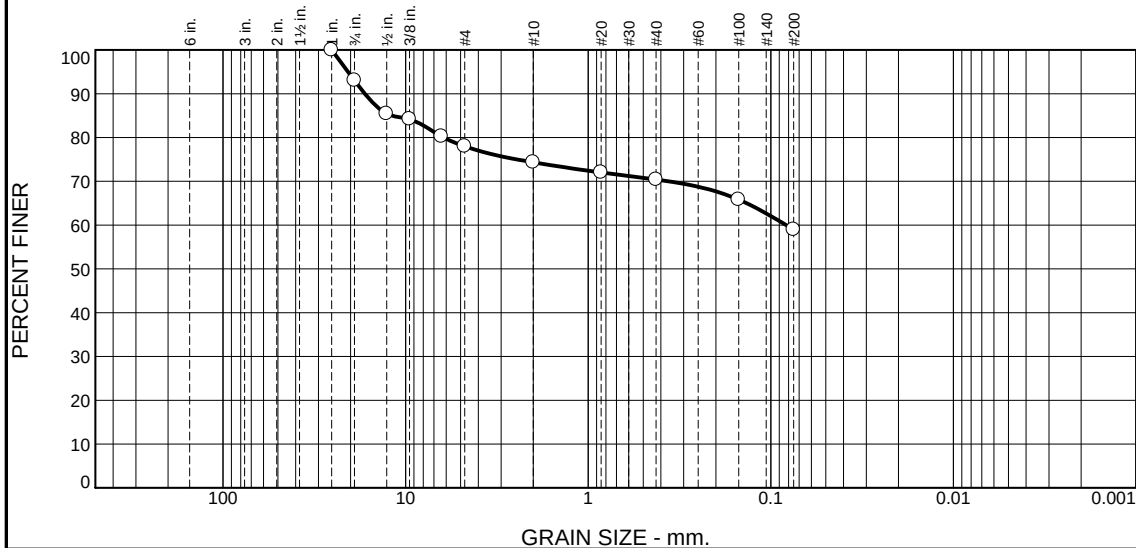
Date: 3-7-2024

Sample No: S-3

Source of Sample: I-21

Location:

Elev./Depth: 4'-5.9'



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	7.0	15.0	3.7	3.9	11.4	59.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
1	100.0		
.75	93.0		
.5	85.4		
.375	84.2		
.25	80.2		
#4	78.0		
#10	74.3		
#20	72.0		
#40	70.4		
#100	65.8		
#200	59.0		

Soil Description

Brown Silty CLAY, some cmf Sand,
some weathered rock fragments

Atterberg Limits

PL=

LL=

PI=

Coefficients

D₈₅= 11.9203

D₆₀= 0.0825

D₅₀=

D₃₀=

D₁₅=

D₁₀=

C_u=

C_c=

Classification

USCS=

AASHTO=

Remarks

moisture content = 13.7 %

* (no specification provided)

ATLANTIC TESTING LABORATORIES, LIMITED

Figure

Reviewed by: Paul Smith

Date: 3-7-2024



ATLANTIC TESTING LABORATORIES

WBE certified company

Particle Size Distribution Report

Project: Proposed Sports Playing Fields - ECC North Campus

Report No.: BD099SL-01-03-24

Client: Wendel

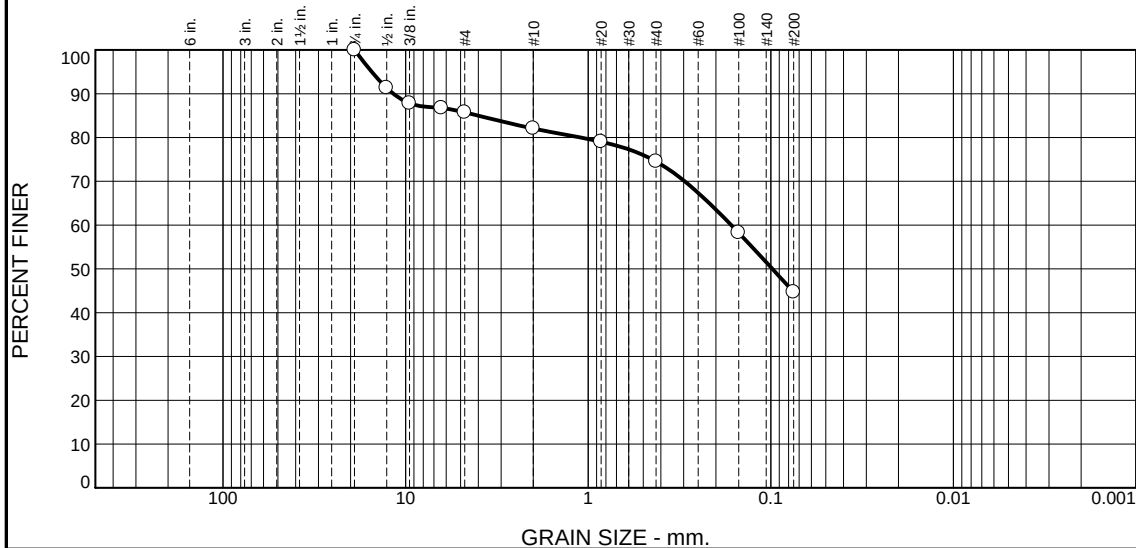
Date: 3-7-2024

Sample No: S-2

Source of Sample: B-5

Location:

Elev./Depth: 2'-4'



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	14.3	3.6	7.6	29.8	44.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
.75	100.0		
.5	91.3		
.375	87.8		
.25	86.7		
#4	85.7		
#10	82.1		
#20	79.0		
#40	74.5		
#100	58.2		
#200	44.7		

Soil Description Brown Silty CLAY & cmf Sand, little cmf Gravel		
Atterberg Limits PL= 16 LL= 33 PI= 17		
Coefficients D ₈₅ = 4.0051 D ₆₀ = 0.1647 D ₅₀ = 0.0981 D ₃₀ = D ₁₅ = D ₁₀ = C _u = C _c =		
Classification USCS= AASHTO=		
Remarks moisture content = 18.9 %		

* (no specification provided)

ATLANTIC TESTING LABORATORIES, LIMITED

Figure

Reviewed by: Paul Smith

Date: 3-7-2024



ATLANTIC TESTING LABORATORIES

WBE certified company

Particle Size Distribution Report

Project: Proposed Sports Playing Fields - ECC North Campus

Report No.: BD099SL-01-03-24

Client: Wendel

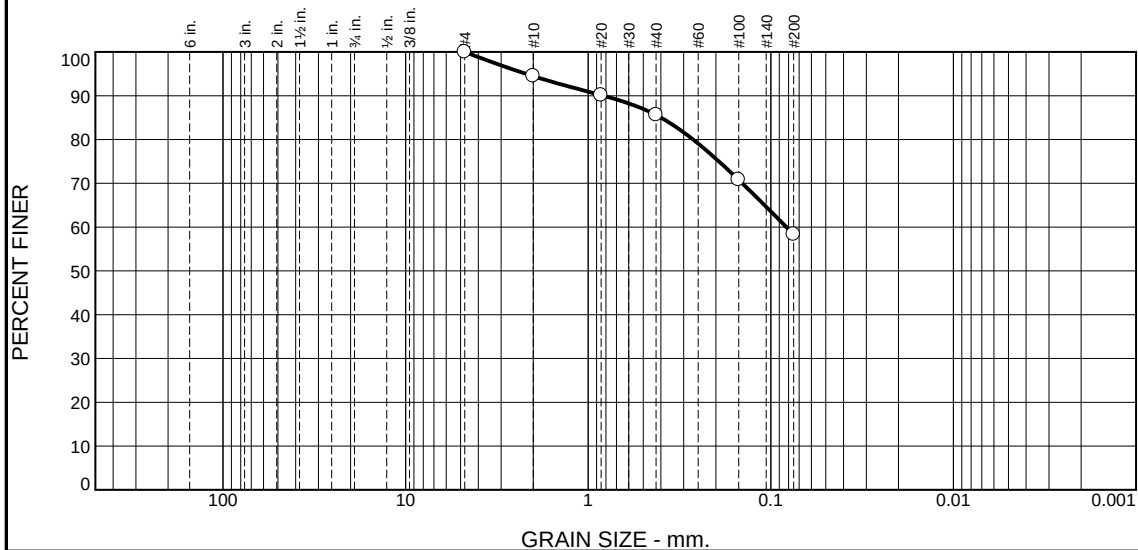
Date: 3-7-2024

Sample No: S-1

Source of Sample: B-7

Location:

Elev./Depth: 0'-2'



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	5.5	8.9	27.3	58.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
#4	100.0		
#10	94.5		
#20	90.1		
#40	85.6		
#100	70.8		
#200	58.3		

Soil Description
Brown Silty CLAY & cmf Sand

Atterberg Limits
PL= LL= PI=

Coefficients
D₈₅= 0.3997 D₆₀= 0.0822 D₅₀=
D₃₀= D₁₅= D₁₀=
C_u= C_c=

Classification
USCS= AASHTO=

Remarks
moisture content = 23.6 %

* (no specification provided)

ATLANTIC TESTING LABORATORIES, LIMITED

Figure

Reviewed by: Paul Smith

Date: 3-7-2024



ATLANTIC TESTING LABORATORIES

WBE certified company

Particle Size Distribution Report

Project: Proposed Sports Playing Fields - ECC North Campus

Report No.: BD099SL-01-03-24

Client: Wendel

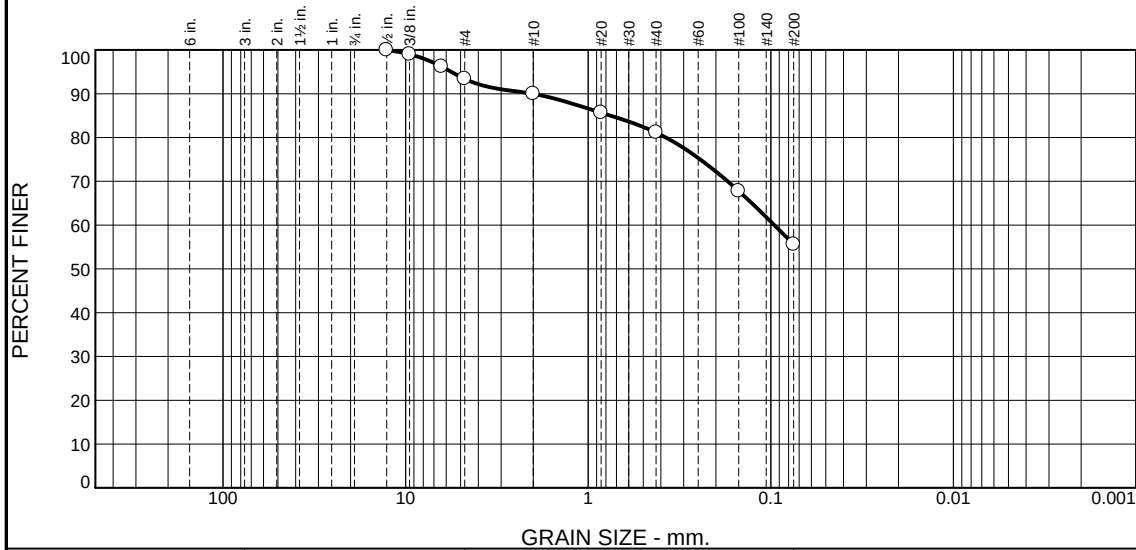
Date: 3-7-2024

Sample No: S-1 & S-2

Source of Sample: B-22

Location:

Elev./Depth: 0'-2.4'



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	6.6	3.4	8.9	25.5	55.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
.5	100.0		
.375	99.0		
.25	96.2		
#4	93.4		
#10	90.0		
#20	85.7		
#40	81.1		
#100	67.8		
#200	55.6		

Soil Description Brown Silty CLAY & cmf Sand, trace mf Gravel		
Atterberg Limits PL= LL= PI=		
Coefficients D ₈₅ = 0.7556 D ₆₀ = 0.0957 D ₅₀ = D ₃₀ = D ₁₅ = D ₁₀ = C _u = C _c =		
Classification USCS= AASHTO=		
Remarks moisture content =20.3 %		

* (no specification provided)

ATLANTIC TESTING LABORATORIES, LIMITED

Figure

Reviewed by: _____

Date: 3-7-2024



ATLANTIC TESTING LABORATORIES

WBE certified company

Particle Size Distribution Report

Project: Proposed Sports Playing Fields - ECC North Campus

Report No.: BD099SL-01-03-24

Client: Wendel

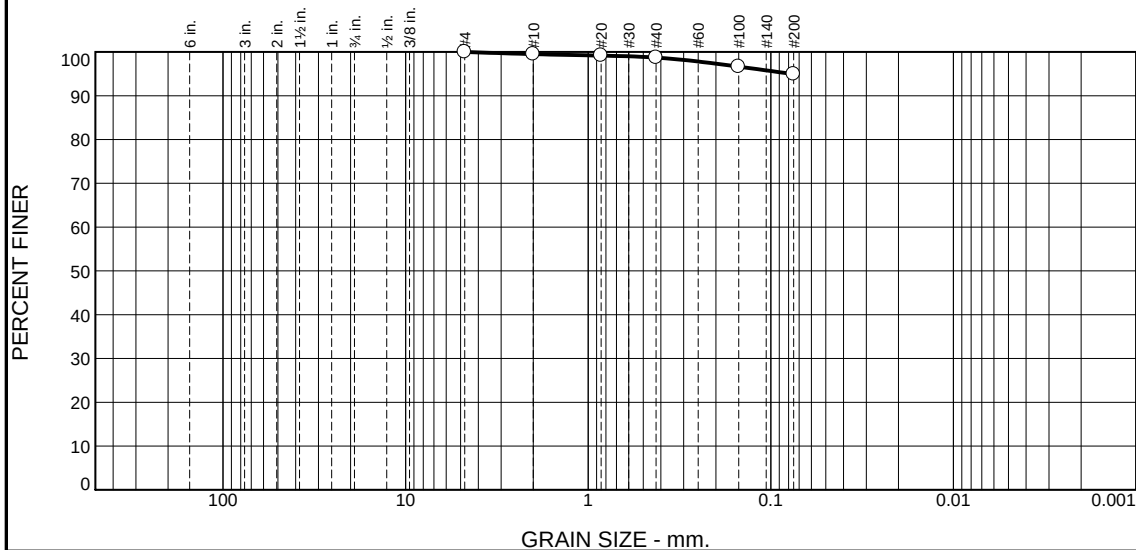
Date: 3-7-2024

Sample No: S-2

Source of Sample: B-13

Location:

Elev./Depth: 2'-4'



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	0.8	3.8	94.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
#4	100.0		
#10	99.5		
#20	99.2		
#40	98.7		
#100	96.6		
#200	94.9		

Soil Description
Brown Silty CLAY, trace mf Sand

Atterberg Limits
PL= LL= PI=

Coefficients
D₈₅= D₆₀= D₅₀=
D₃₀= D₁₅= D₁₀=
C_u= C_c=

Classification
USCS= AASHTO=

Remarks
moisture content = 18.5 %

* (no specification provided)

ATLANTIC TESTING LABORATORIES, LIMITED

Figure

Reviewed by: 

Date: 3-7-2024

APPENDIX D

Table 1 – Top of Bedrock Summary

Table 2 – Infiltration Testing Summary

**Table 1
Top of Bedrock Summary**

**Proposed Sports Fields
ECC - North Campus
6205 Main Street, Town of Amherst, New York**

Boring Number	Ground Surface Elevation (feet)	Top of Bedrock		
		Depth to Top (feet)	Elevation (feet)	Determined By
B-1	693.4	2.7	690.7	C
B-2	691.0	1.9	689.1	AR
B-3	687.8	1.8	686.0	AR
B-4	689.6	0.8	688.8	AR
B-5	687.0	4.4	682.6	AR
B-6	687.1	3.3	683.8	AR
B-7	686.3	2.5	683.8	C
B-8	686.7	2.6	684.1	AR
B-9	687.0	2.4	684.6	AR
B-10	685.8	3.8	682.0	C
B-11	686.9	2.7	684.2	AR
B-12	687.7	4.8	682.9	AR
B-13	690.3	6.8	683.5	AR
B-14	684.8	6.8	678.0	AR
B-15	685.8	3.6	682.2	AR
B-16	688.2	1.7	686.5	C
B-17	688.2	4.2	684.0	AR
B-18	685.0	3.6	681.4	AR
B-19	691.8	2.2	689.6	AR
B-20	689.0	1.1	687.9	AR
B-21	689.8	5.2	684.6	AR
B-22	688.3	2.6	685.7	AR
B-23	686.2	7.1	679.1	AR
B-24	685.5	3.9	681.6	AR
B-25	685.5	4.8	680.7	AR
B-26	687.3	6.2	681.1	AR
B-27	685.5	6.2	679.3	AR

Boring Number	Ground Surface Elevation (feet)	Top of Bedrock in Boring			Top of Bedrock at Infiltration Test Pipe		
		Depth to Top (feet)	Elevation (feet)	Determined By	Depth to Top (feet)	Elevation (feet)	Difference from Adjacent Boring (feet)
I-1	688.8	2.0	686.8	AR	1.8	687.0	0.2 shallower
I-2	687.1	3.1	684.0	AR	3.1	684.0	0.0 same
I-3	690.0	1.1	688.9	AR	1.7	688.3	0.6 deeper
I-4	686.8	3.1	683.7	AR	Infiltration Pipe Set in Soil		
I-5	687.4	3.6	683.8	AR	Infiltration Pipe Set in Soil		
I-6	686.9	2.2	684.7	AR	1.9	685.0	0.3 shallower
I-7	686.5	1.8	684.7	AR	1.7	684.8	0.1 shallower
I-8	685.9	3.2	682.7	AR	3.0	682.9	0.2 shallower
I-9	686.1	2.0	684.1	AR	2.5	683.6	0.5 deeper
I-10	686.0	4.9	681.1	AR	Infiltration Pipe Set in Soil		
I-11	685.5	3.6	681.9	AR	3.6	681.9	0.0 same
I-12	685.5	3.7	681.8	AR	Infiltration Pipe Set in Soil		
I-13	685.7	6.4	679.3	AR	Infiltration Pipe Set in Soil		
I-14	685.8	5.3	680.5	AR	Infiltration Pipe Set in Soil		
I-15	686.2	5.9	680.3	AR	Infiltration Pipe Set in Soil		
I-16	689.0	3.1	685.9	AR	4.0	685.0	0.9 deeper
I-17	688.9	1.8	687.1	AR	1.9	687.0	0.1 deeper
I-18	688.9	3.3	685.6	AR	3.0	685.9	0.3 shallower
I-19	684.5	3.4	681.1	AR	2.8	681.7	0.6 shallower
I-20	686.7	2.8	683.9	AR	2.7	684.0	0.1 shallower
I-21	685.2	5.9	679.3	AR	Infiltration Pipe Set in Soil		

Notes:

Depths and elevations shown should be considered approximate.

AR = Auger Refusal

C = Rock Coring

**Table 2
Infiltration Testing Summary**

**Proposed Sports Fields
ECC - North Campus
6205 Main Street, Town of Amherst, New York**

Boring Number	Ground Surface Elevation (feet)	Bottom of Test Pipe			Pre-Soak Water Remaining in Test Pipe		Adjustment to Water Level within Test Pipe (feet)		Water Level During Testing		Approximate Infiltration Rate (inches / hour)
		Depth (feet)	Elevation (feet)	Set in Soil or on Bedrock	Height above Bottom (feet)	Elevation (feet)			Height Above Bottom (feet)	Elevation (feet)	
I-1	688.8	1.8	687.0	Bedrock	0.0	---	added	2.0	2.0	689.0	0.0
I-2	687.1	3.1	684.0	Bedrock	0.1	684.1	added	1.9	2.0	686.0	0.2
I-3	690.0	1.7	688.3	Bedrock	0.0	---	added	2.0	2.0	690.3	7.3
I-4	686.8	2.2	684.6	Soil	1.0	685.6	added	1.0	2.0	686.6	0.0
I-5	687.4	2.3	685.1	Soil	1.5	686.6	added	0.5	2.0	687.1	0.0
I-6	686.9	1.9	685.0	Bedrock	1.7	686.7	added	0.3	2.0	687.0	0.0
I-7	686.5	1.7	684.8	Bedrock	0.8	685.6	added	1.2	2.0	686.8	0.4
I-8	685.9	3.0	682.9	Bedrock	0.0	682.9	added	2.0	2.0	684.9	8.1
I-9	686.1	2.5	683.6	Bedrock	0.0	---	added	2.0	2.0	685.6	4.4
I-10	686.0	3.9	682.1	Soil / Bedrock	0.0	---	added	2.0	2.0	684.1	24
I-11	685.5	3.6	681.9	Bedrock	1.6	683.5	added	2.0	3.6	685.5	3.0 [Note 1]
I-12	685.5	2.6	682.9	Soil	1.4	684.3	added	2.0	3.4	686.3	0.5 [Note 1]
I-13	685.7	3.7	682.0	Soil	1.5	683.5	added	0.5	2.0	684.0	0.0
I-14	685.8	3.6	682.2	Soil	2.5	684.7	added	2.3	4.8	687.0	0.0 [Note 1]
I-15	686.2	3.7	682.5	Soil	1.6	684.1	added	0.4	2.0	684.5	0.0
I-16	689.0	4.0	685.0	Bedrock	0.0	---	added	2.0	2.0	687.0	24
I-17	688.9	1.9	687.0	Bedrock	0.0	---	added	2.0	2.0	689.0	24
I-18	688.9	3.0	685.9	Bedrock	0.0	---	added	2.0	2.0	687.9	24
I-19	684.5	2.8	681.7	Bedrock	2.5	684.2	added	1.4	3.9	685.6	0.0 [Note 1]
I-20	686.7	2.7	684.0	Bedrock	1.6	685.6	added	0.4	2.0	686.0	0.0
I-21	685.2	3.8	681.4	Soil	1.8	683.2	added	0.2	2.0	683.4	0.0

Notes:

1] More than the standard 2.0 feet of water was used during the infiltration test.

APPENDIX E
INFILTRATION TEST DATA SUMMARY SHEETS



INFILTRATION TEST DATA SUMMARY

PROJECT: PROPOSED ECC NORTH CAMPUS SPORTS FIELDS

LOCATION: 6205 MAIN STREET, AMHERST, NY

PROJECT NO.: BD099

INFILTRATION

TEST POINT: I-1

PRESOAK DATE: 1/24/2024

PRESOAK TIME:

TEST DATA

TEST DATE: 2/1/2024

START OF TEST TIME: 10:15 AM

IS THERE PRESOAK WATER IN TEST CASING?

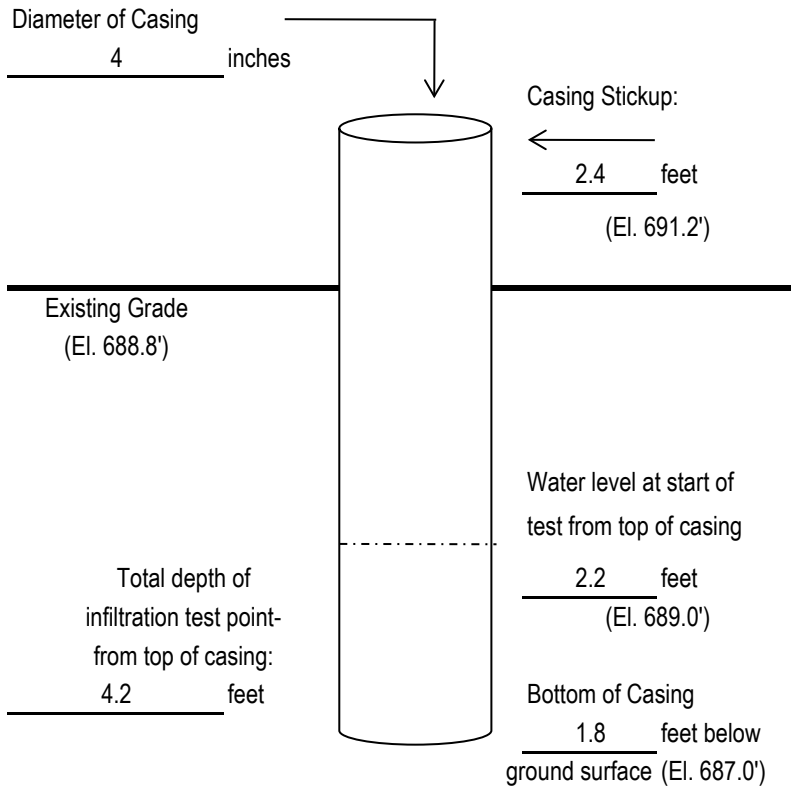
YES

NO

IF YES, WHAT DEPTH:

N/A

FEET FROM TOP OF CASING.



RUN NUMBER	START TIME (HOURS)	END TIME (HOURS)	ELAPSED TIME (MIN)	DROP IN WATER LEVEL DURING TEST RUN (FEET)	REFILLED WITH WATER, LEVEL FROM TOP OF CASING (FEET)
START					2.2
RUN #1	10:15	11:15	60	0.0	2.2
RUN #2	11:15	12:15	60	0.0	2.2
RUN #3	12:15	1:15	60	0.0	2.2
RUN #4	1:15	2:15	60	0.0	

AVERAGE INFILTRATION RATE 0.0 FEET PER HOUR
AVERAGE INFILTRATION RATE 0.0 INCHES PER HOUR

TESTED BY: C. MURPHY



INFILTRATION TEST DATA SUMMARY

PROJECT: PROPOSED ECC NORTH CAMPUS SPORTS FIELDS

LOCATION: 6205 MAIN STREET, AMHERST, NY

PROJECT NO.: BD099

INFILTRATION

TEST POINT: I-2

PRESOAK DATE: 1/24/2024

PRESOAK TIME:

TEST DATA

TEST DATE: 2/1/2024

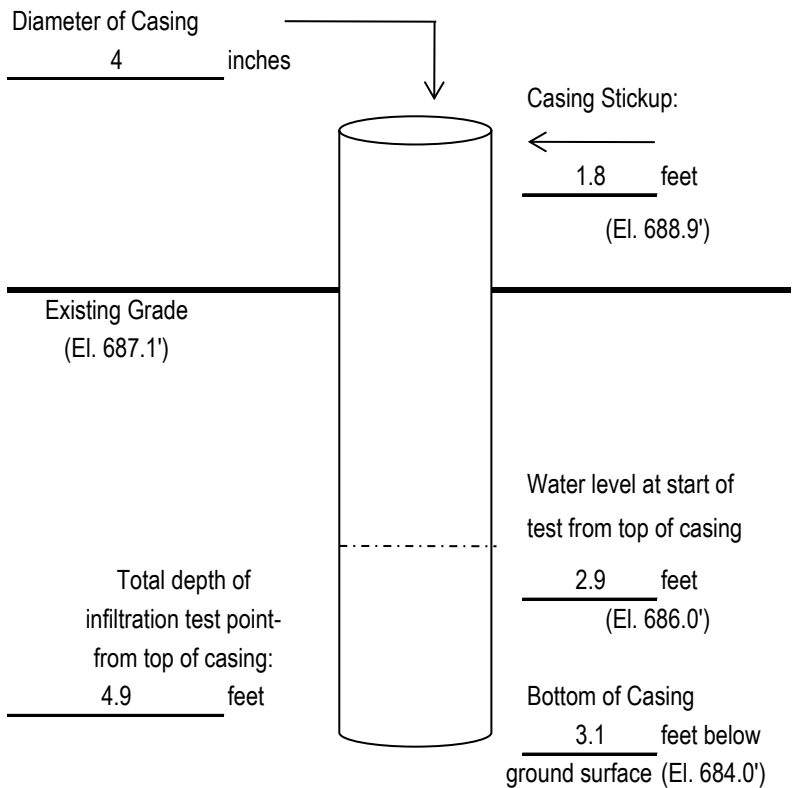
START OF TEST TIME: 10:20 AM

IS THERE PRESOAK WATER IN TEST CASING?

☒ YES ☐ NO

IF YES, WHAT DEPTH:

4.8 FEET FROM TOP OF CASING.
(El. 684.1')



RUN NUMBER	START TIME (HOURS)	END TIME (HOURS)	ELAPSED TIME (MIN)	DROP IN WATER LEVEL DURING TEST RUN (FEET)	REFILLED WITH WATER, LEVEL FROM TOP OF CASING (FEET)
START					2.9
RUN #1	10:20	11:20	60	0.0	2.9
RUN #2	11:20	12:20	60	0.0	2.9
RUN #3	12:20	1:20	60	0.05	2.9
RUN #4	1:20	2:20	60	0.04	

AVERAGE INFILTRATION RATE 0.02 FEET PER HOUR
AVERAGE INFILTRATION RATE 0.2 INCHES PER HOUR

TESTED BY: C. MURPHY



INFILTRATION TEST DATA SUMMARY

PROJECT: PROPOSED ECC NORTH CAMPUS SPORTS FIELDS

LOCATION: 6205 MAIN STREET, AMHERST, NY

PROJECT NO.: BD099

INFILTRATION

TEST POINT: I-3

PRESOAK DATE: 2/1/2024

PRESOAK TIME:

TEST DATA

TEST DATE: 2/2/2024

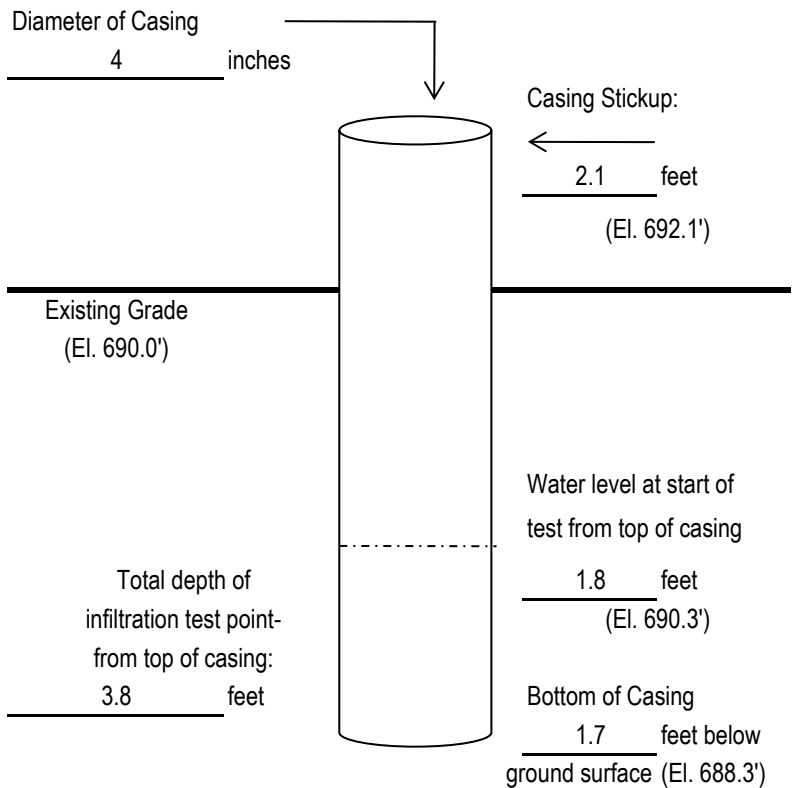
START OF TEST TIME: 9:45 AM

IS THERE PRESOAK WATER IN TEST CASING?

YES ☐ NO ☒

IF YES, WHAT DEPTH:

N/A FEET FROM TOP OF CASING.



RUN NUMBER	START TIME (HOURS)	END TIME (HOURS)	ELAPSED TIME (MIN)	DROP IN WATER LEVEL DURING TEST RUN (FEET)	REFILLED WITH WATER, LEVEL FROM TOP OF CASING (FEET)
START					1.8
RUN #1	9:45	10:45	60	0.71	1.8
RUN #2	10:45	11:45	60	0.50	1.8
RUN #3	11:45	12:45	60	0.62	1.8
RUN #4	12:45	1:45	60	0.62	

AVERAGE INFILTRATION RATE 0.61 FEET PER HOUR
AVERAGE INFILTRATION RATE 7.3 INCHES PER HOUR

TESTED BY: C. MURPHY



INFILTRATION TEST DATA SUMMARY

PROJECT: PROPOSED ECC NORTH CAMPUS SPORTS FIELDS

LOCATION: 6205 MAIN STREET, AMHERST, NY

PROJECT NO.: BD099

INFILTRATION

TEST POINT: I-4

PRESOAK DATE: 1/24/2024

PRESOAK TIME:

TEST DATA

TEST DATE: 2/1/2024

START OF TEST TIME: 10:25 AM

IS THERE PRESOAK WATER IN TEST CASING?

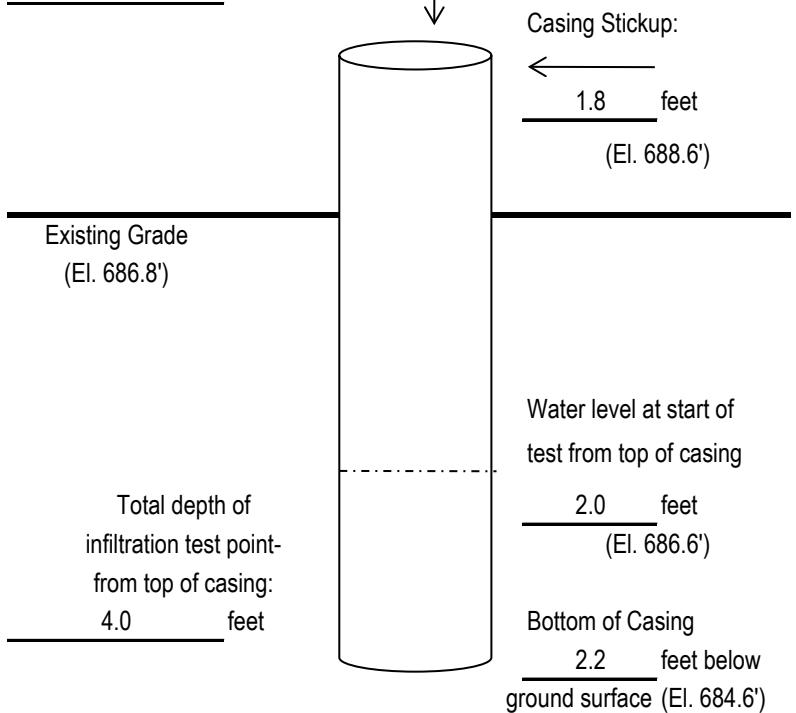
YES

NO

IF YES, WHAT DEPTH:

3.0 FEET FROM TOP OF CASING.
(El. 685.6')

Diameter of Casing
4 inches



RUN NUMBER	START TIME (HOURS)	END TIME (HOURS)	ELAPSED TIME (MIN)	DROP IN WATER LEVEL DURING TEST RUN (FEET)	REFILLED WITH WATER, LEVEL FROM TOP OF CASING (FEET)
START					2.0
RUN #1	10:25	11:25	60	0.0	2.0
RUN #2	11:25	12:25	60	0.0	2.0
RUN #3	12:25	1:25	60	0.0	2.0
RUN #4	1:25	2:25	60	0.0	

AVERAGE INFILTRATION RATE 0.0 FEET PER HOUR
AVERAGE INFILTRATION RATE 0.0 INCHES PER HOUR

TESTED BY: C. MURPHY



INFILTRATION TEST DATA SUMMARY

PROJECT: PROPOSED ECC NORTH CAMPUS SPORTS FIELDS

LOCATION: 6205 MAIN STREET, AMHERST, NY

PROJECT NO.: BD099

INFILTRATION

TEST POINT: I-5

PRESOAK DATE: 1/24/2024

PRESOAK TIME:

TEST DATA

TEST DATE: 2/1/2024

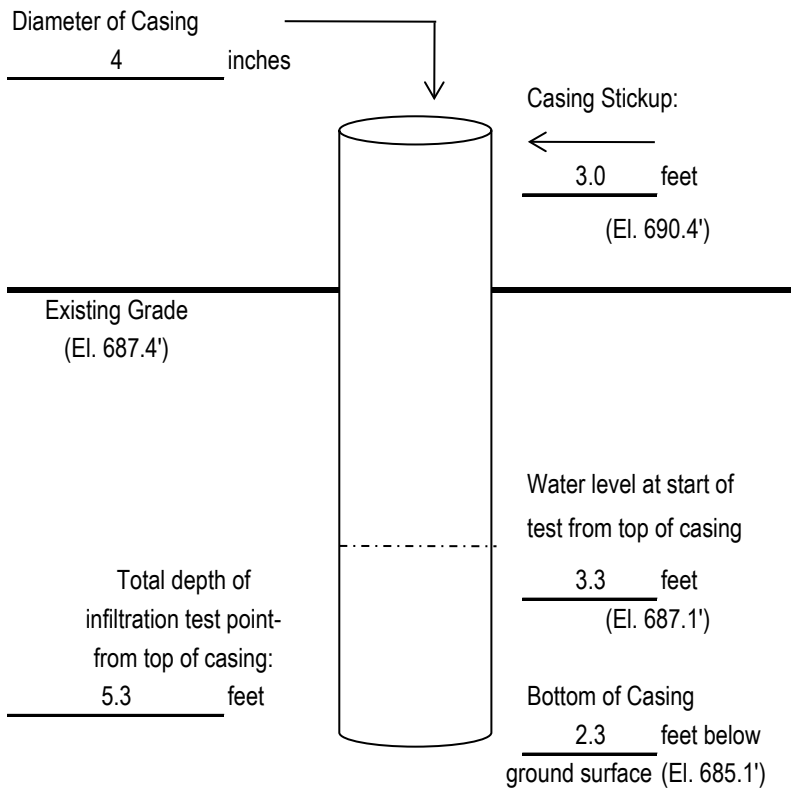
START OF TEST TIME: 10:35 AM

IS THERE PRESOAK WATER IN TEST CASING?

☒ YES ☐ NO

IF YES, WHAT DEPTH:

3.8 FEET FROM TOP OF CASING.
(El. 686.6')



RUN NUMBER	START TIME (HOURS)	END TIME (HOURS)	ELAPSED TIME (MIN)	DROP IN WATER LEVEL DURING TEST RUN (FEET)	REFILLED WITH WATER, LEVEL FROM TOP OF CASING (FEET)
START					3.3
RUN #1	10:35	11:35	60	0.0	3.3
RUN #2	11:35	12:35	60	0.0	3.3
RUN #3	12:35	1:35	60	0.0	3.3
RUN #4	1:35	2:35	60	0.0	

AVERAGE INFILTRATION RATE 0.0 FEET PER HOUR
AVERAGE INFILTRATION RATE 0.0 INCHES PER HOUR

TESTED BY: C. MURPHY



INFILTRATION TEST DATA SUMMARY

PROJECT: PROPOSED ECC NORTH CAMPUS SPORTS FIELDS

LOCATION: 6205 MAIN STREET, AMHERST, NY

PROJECT NO.: BD099

INFILTRATION

TEST POINT: I-6

PRESOAK DATE: 1/24/2024

PRESOAK TIME:

TEST DATA

TEST DATE: 2/1/2024

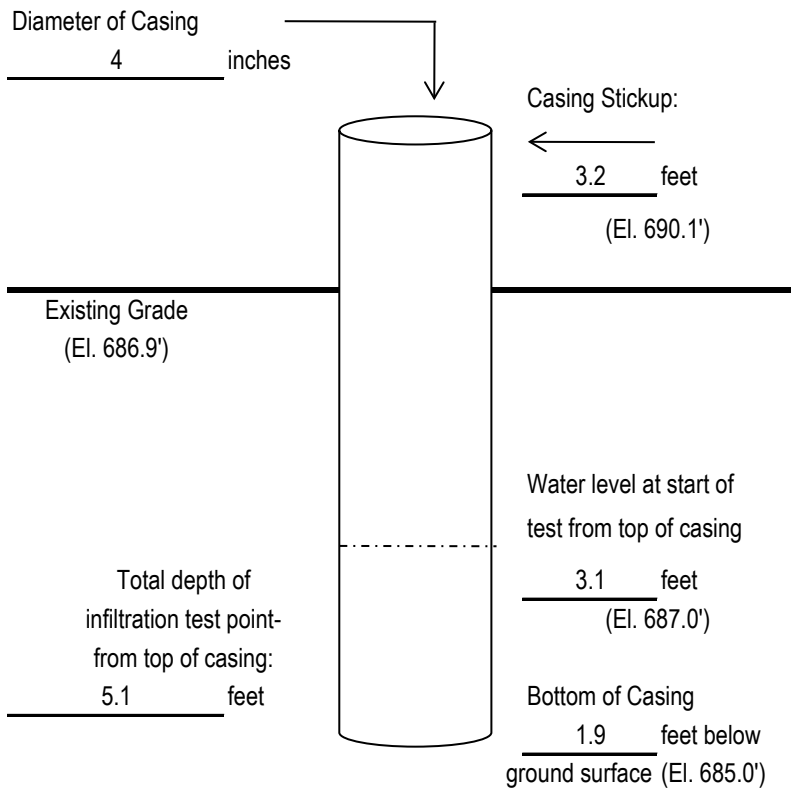
START OF TEST TIME: 10:30 AM

IS THERE PRESOAK WATER IN TEST CASING?

☒ YES ☐ NO

IF YES, WHAT DEPTH:

3.4 FEET FROM TOP OF CASING.
(El. 686.7')



RUN NUMBER	START TIME (HOURS)	END TIME (HOURS)	ELAPSED TIME (MIN)	DROP IN WATER LEVEL DURING TEST RUN (FEET)	REFILLED WITH WATER, LEVEL FROM TOP OF CASING (FEET)
START					3.1
RUN #1	10:30	11:30	60	0.0	3.1
RUN #2	11:30	12:30	60	0.0	3.1
RUN #3	12:30	1:30	60	0.0	3.1
RUN #4	1:30	2:30	60	0.0	

AVERAGE INFILTRATION RATE 0.0 FEET PER HOUR
AVERAGE INFILTRATION RATE 0.0 INCHES PER HOUR

TESTED BY: C. MURPHY



INFILTRATION TEST DATA SUMMARY

PROJECT: PROPOSED ECC NORTH CAMPUS SPORTS FIELDS

LOCATION: 6205 MAIN STREET, AMHERST, NY

PROJECT NO.: BD099

INFILTRATION

TEST POINT: I-7

PRESOAK DATE: 2/1/2024

PRESOAK TIME:

TEST DATA

TEST DATE: 2/2/2024

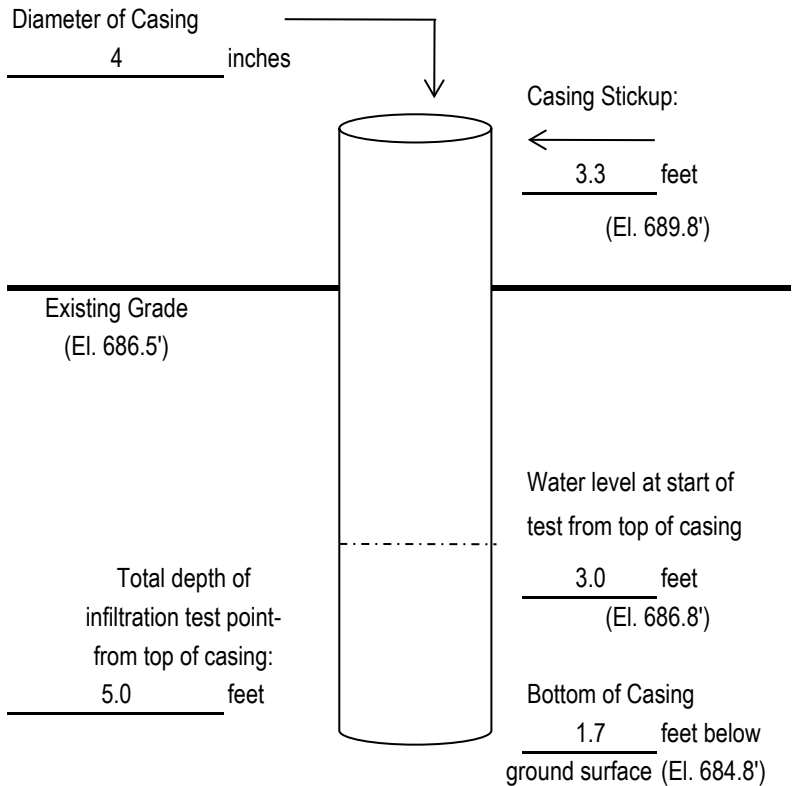
START OF TEST TIME: 9:25 AM

IS THERE PRESOAK WATER IN TEST CASING?

☒ YES ☐ NO

IF YES, WHAT DEPTH:

4.2 FEET FROM TOP OF CASING.
(El. 685.6')



RUN NUMBER	START TIME (HOURS)	END TIME (HOURS)	ELAPSED TIME (MIN)	DROP IN WATER LEVEL DURING TEST RUN (FEET)	REFILLED WITH WATER, LEVEL FROM TOP OF CASING (FEET)
START					3.0
RUN #1	9:25	10:25	60	0.0	3.0
RUN #2	10:25	11:25	60	0.07	3.0
RUN #3	11:25	12:25	60	0.05	3.0
RUN #4	12:25	1:25	60	0.0	

AVERAGE INFILTRATION RATE 0.03 FEET PER HOUR
AVERAGE INFILTRATION RATE 0.4 INCHES PER HOUR

TESTED BY: C. MURPHY



INFILTRATION TEST DATA SUMMARY

PROJECT: PROPOSED ECC NORTH CAMPUS SPORTS FIELDS

LOCATION: 6205 MAIN STREET, AMHERST, NY

PROJECT NO.: BD099

INFILTRATION

TEST POINT: I-8

PRESOAK DATE: 2/1/2024

PRESOAK TIME:

TEST DATA

TEST DATE: 2/2/2024

START OF TEST TIME: 9:27 AM

IS THERE PRESOAK WATER IN TEST CASING?

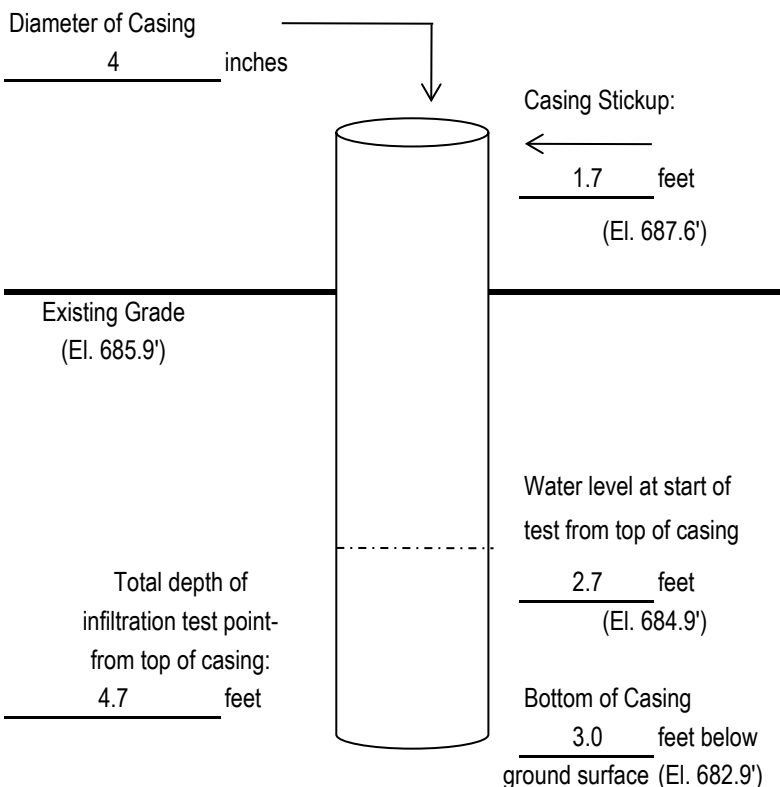
YES

NO

IF YES, WHAT DEPTH:

N/A

FEET FROM TOP OF CASING.



RUN NUMBER	START TIME (HOURS)	END TIME (HOURS)	ELAPSED TIME (MIN)	DROP IN WATER LEVEL DURING TEST RUN (FEET)	REFILLED WITH WATER, LEVEL FROM TOP OF CASING (FEET)
START					2.7
RUN #1	9:27	10:27	60	0.80	2.7
RUN #2	10:27	11:27	60	0.55	2.7
RUN #3	11:27	12:27	60	0.70	2.7
RUN #4	12:27	1:27	60	0.65	

AVERAGE INFILTRATION RATE 0.68 FEET PER HOUR
AVERAGE INFILTRATION RATE 8.1 INCHES PER HOUR

TESTED BY: O. QUARTZ



INFILTRATION TEST DATA SUMMARY

PROJECT: PROPOSED ECC NORTH CAMPUS SPORTS FIELDS

LOCATION: 6205 MAIN STREET, AMHERST, NY

PROJECT NO.: BD099

INFILTRATION

TEST POINT: I-9

PRESOAK DATE: 2/1/2024

PRESOAK TIME:

TEST DATA

TEST DATE: 2/2/2024

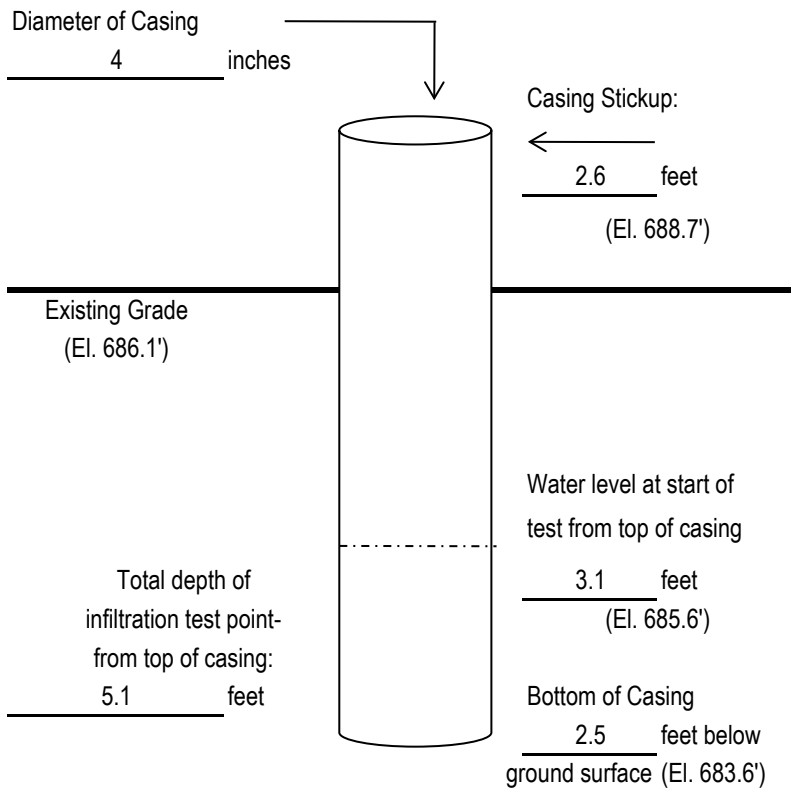
START OF TEST TIME: 9:19 AM

IS THERE PRESOAK WATER IN TEST CASING?

YES ☐ NO ☒

IF YES, WHAT DEPTH:

N/A FEET FROM TOP OF CASING.



RUN NUMBER	START TIME (HOURS)	END TIME (HOURS)	ELAPSED TIME (MIN)	DROP IN WATER LEVEL DURING TEST RUN (FEET)	REFILLED WITH WATER, LEVEL FROM TOP OF CASING (FEET)
START					3.1
RUN #1	9:19	10:19	60	0.45	3.1
RUN #2	10:19	11:19	60	0.35	3.1
RUN #3	11:19	12:19	60	0.35	3.1
RUN #4	12:19	1:19	60	0.30	

AVERAGE INFILTRATION RATE 0.36 FEET PER HOUR
AVERAGE INFILTRATION RATE 4.4 INCHES PER HOUR

TESTED BY: O. QUARTZ



INFILTRATION TEST DATA SUMMARY

PROJECT: PROPOSED ECC NORTH CAMPUS SPORTS FIELDS

LOCATION: 6205 MAIN STREET, AMHERST, NY

PROJECT NO.: BD099

INFILTRATION

TEST POINT: I-10

PRESOAK DATE: 2/1/2024

PRESOAK TIME:

TEST DATA

TEST DATE: 2/2/2024

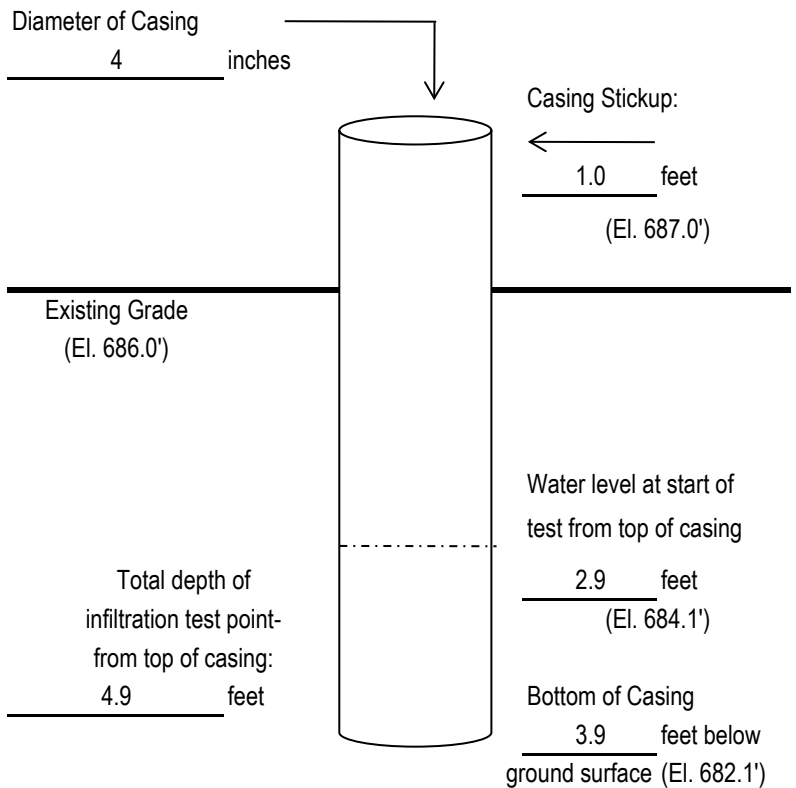
START OF TEST TIME: 10:13 AM

IS THERE PRESOAK WATER IN TEST CASING?

YES ☐ NO ☒

IF YES, WHAT DEPTH:

N/A FEET FROM TOP OF CASING.



RUN NUMBER	START TIME (HOURS)	END TIME (HOURS)	ELAPSED TIME (MIN)	DROP IN WATER LEVEL DURING TEST RUN (FEET)	REFILLED WITH WATER, LEVEL FROM TOP OF CASING (FEET)
START					2.9
RUN #1	10:13	11:13	60	2.0	2.9
RUN #2	11:13	12:13	60	2.0	2.9
RUN #3	12:13	1:13	60	2.0	2.9
RUN #4	1:13	2:13	60	2.0	

AVERAGE INFILTRATION RATE 2.0 FEET PER HOUR
AVERAGE INFILTRATION RATE 24 INCHES PER HOUR

TESTED BY: O. QUARTZ



INFILTRATION TEST DATA SUMMARY

PROJECT: PROPOSED ECC NORTH CAMPUS SPORTS FIELDS

LOCATION: 6205 MAIN STREET, AMHERST, NY

PROJECT NO.: BD099

INFILTRATION

TEST POINT: I-11

PRESOAK DATE: 2/1/2024

PRESOAK TIME:

TEST DATA

TEST DATE: 2/2/2024

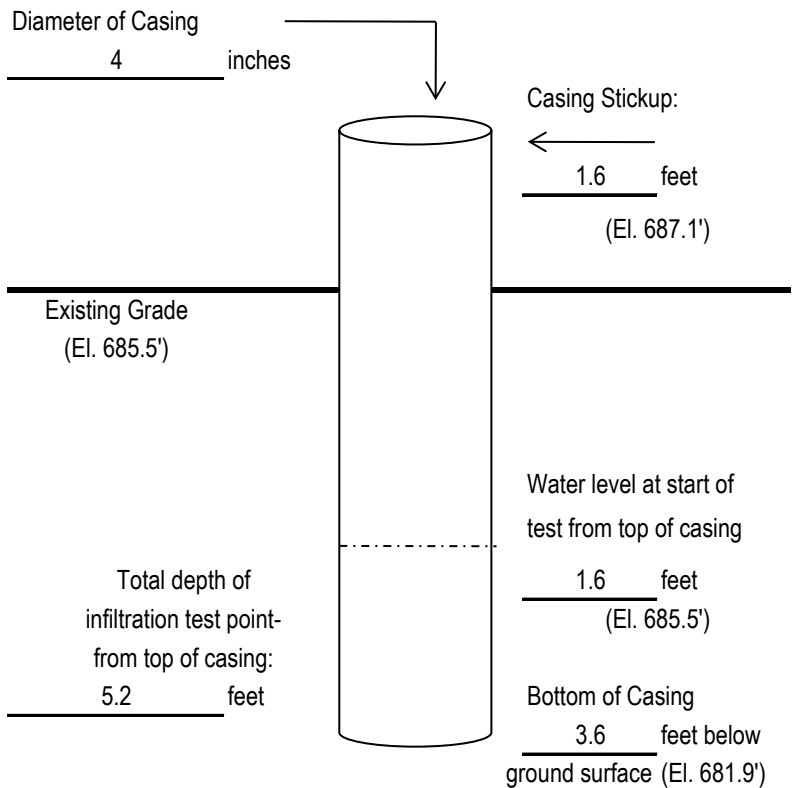
START OF TEST TIME: 9:36 AM

IS THERE PRESOAK WATER IN TEST CASING?

☒ YES ☐ NO

IF YES, WHAT DEPTH:

3.6 FEET FROM TOP OF CASING.
(El. 683.5')



RUN NUMBER	START TIME (HOURS)	END TIME (HOURS)	ELAPSED TIME (MIN)	DROP IN WATER LEVEL DURING TEST RUN (FEET)	REFILLED WITH WATER, LEVEL FROM TOP OF CASING (FEET)
START					1.6
RUN #1	9:36	10:36	60	0.95	1.6
RUN #2	10:36	11:36	60	0.05	1.6
RUN #3	11:36	12:36	60	0.0	1.6
RUN #4	12:36	1:36	60	0.0	

AVERAGE INFILTRATION RATE 0.25 FEET PER HOUR
AVERAGE INFILTRATION RATE 3.0 INCHES PER HOUR

TESTED BY: O. QUARTZ



INFILTRATION TEST DATA SUMMARY

PROJECT: PROPOSED ECC NORTH CAMPUS SPORTS FIELDS

LOCATION: 6205 MAIN STREET, AMHERST, NY

PROJECT NO.: BD099

INFILTRATION

TEST POINT: I-12

PRESOAK DATE: 2/1/2024

PRESOAK TIME:

TEST DATA

TEST DATE: 2/2/2024

START OF TEST TIME: 10:00 AM

IS THERE PRESOAK WATER IN TEST CASING?

YES

NO

IF YES, WHAT DEPTH:

4.1 FEET FROM TOP OF CASING.
(El. 684.3')

Diameter of Casing
4 inches

Existing Grade
(El. 685.5')

Total depth of
infiltration test point-
from top of casing:
5.5 feet

Casing Stickup:
2.9 feet
(El. 688.4')

Water level at start of
test from top of casing
2.1 feet
(El. 686.3')

Bottom of Casing
2.6 feet below
ground surface (El. 682.9')

RUN NUMBER	START TIME (HOURS)	END TIME (HOURS)	ELAPSED TIME (MIN)	DROP IN WATER LEVEL DURING TEST RUN (FEET)	REFILLED WITH WATER, LEVEL FROM TOP OF CASING (FEET)
START					2.1
RUN #1	10:00	11:00	60	0.15	2.1
RUN #2	11:00	12:00	60	0.0	2.1
RUN #3	12:00	1:00	60	0.0	2.1
RUN #4	1:00	2:00	60	0.0	

AVERAGE INFILTRATION RATE 0.04 FEET PER HOUR
AVERAGE INFILTRATION RATE 0.45 INCHES PER HOUR

TESTED BY: O. QUARTZ



INFILTRATION TEST DATA SUMMARY

PROJECT: PROPOSED ECC NORTH CAMPUS SPORTS FIELDS

LOCATION: 6205 MAIN STREET, AMHERST, NY

PROJECT NO.: BD099

INFILTRATION

TEST POINT: I-13

PRESOAK DATE: 2/1/2024

PRESOAK TIME:

TEST DATA

TEST DATE: 2/2/2024

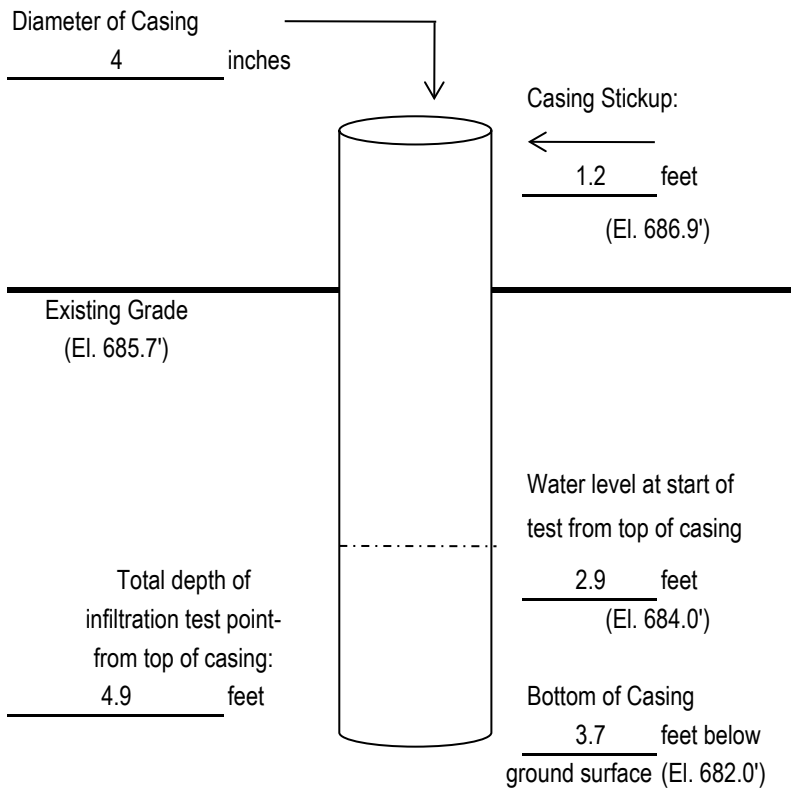
START OF TEST TIME: 9:30 AM

IS THERE PRESOAK WATER IN TEST CASING?

☒ YES ☐ NO

IF YES, WHAT DEPTH:

3.4 FEET FROM TOP OF CASING.
(El. 683.5')



RUN NUMBER	START TIME (HOURS)	END TIME (HOURS)	ELAPSED TIME (MIN)	DROP IN WATER LEVEL DURING TEST RUN (FEET)	REFILLED WITH WATER, LEVEL FROM TOP OF CASING (FEET)
START					2.9
RUN #1	9:30	10:30	60	0.0	2.9
RUN #2	10:30	11:30	60	0.0	2.9
RUN #3	11:30	12:30	60	0.0	2.9
RUN #4	12:30	1:30	60	0.0	

AVERAGE INFILTRATION RATE 0.0 FEET PER HOUR
AVERAGE INFILTRATION RATE 0.0 INCHES PER HOUR

TESTED BY: C. MURPHY



INFILTRATION TEST DATA SUMMARY

PROJECT: PROPOSED ECC NORTH CAMPUS SPORTS FIELDS

LOCATION: 6205 MAIN STREET, AMHERST, NY

PROJECT NO.: BD099

INFILTRATION

TEST POINT: I-14

PRESOAK DATE: 2/1/2024

PRESOAK TIME:

TEST DATA

TEST DATE: 2/2/2024

START OF TEST TIME: 9:40 AM

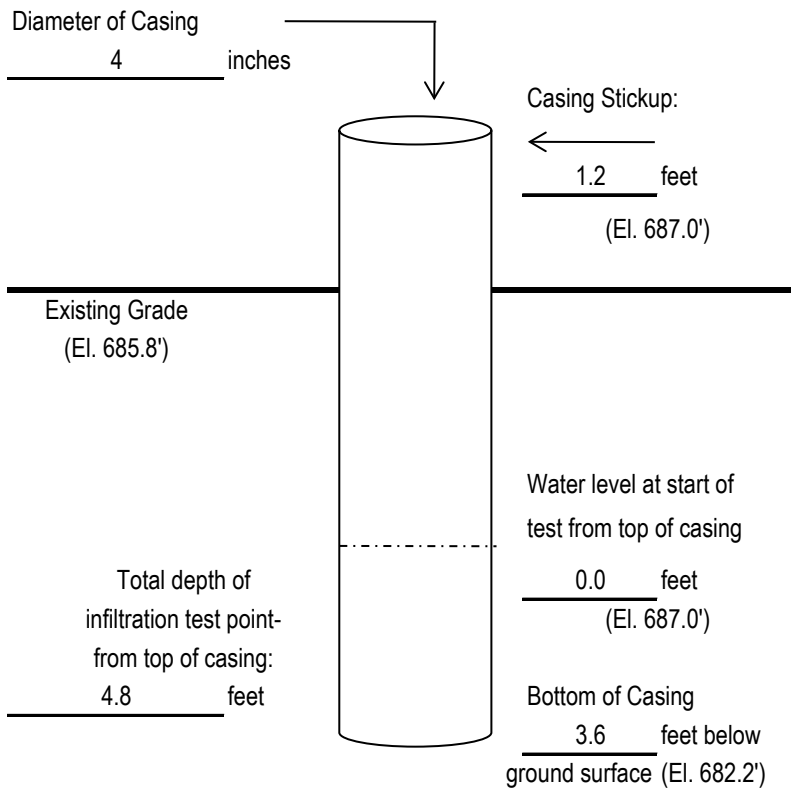
IS THERE PRESOAK WATER IN TEST CASING?

YES

NO

IF YES, WHAT DEPTH:

2.3 FEET FROM TOP OF CASING.
(El. 684.7')



RUN NUMBER	START TIME (HOURS)	END TIME (HOURS)	ELAPSED TIME (MIN)	DROP IN WATER LEVEL DURING TEST RUN (FEET)	REFILLED WITH WATER, LEVEL FROM TOP OF CASING (FEET)
START					0.0
RUN #1	9:40	10:40	60	0.0	0.0
RUN #2	10:40	11:40	60	0.0	0.0
RUN #3	11:40	12:40	60	0.0	0.0
RUN #4	12:40	1:40	60	0.0	

AVERAGE INFILTRATION RATE 0.0 FEET PER HOUR
AVERAGE INFILTRATION RATE 0.0 INCHES PER HOUR

TESTED BY: C. MURPHY



INFILTRATION TEST DATA SUMMARY

PROJECT: PROPOSED ECC NORTH CAMPUS SPORTS FIELDS

LOCATION: 6205 MAIN STREET, AMHERST, NY

PROJECT NO.: BD099

INFILTRATION

TEST POINT: I-15

PRESOAK DATE: 2/1/2024

PRESOAK TIME:

TEST DATA

TEST DATE: 2/2/2024

START OF TEST TIME: 9:35 AM

IS THERE PRESOAK WATER IN TEST CASING?

YES

NO

IF YES, WHAT DEPTH:

3.4 FEET FROM TOP OF CASING.
(El. 684.1')

Diameter of Casing
4 inches

Existing Grade
(El. 686.2')

Total depth of
infiltration test point-
from top of casing:
5.0 feet

Casing Stickup:
1.3 feet
(El. 687.5')

Water level at start of
test from top of casing
3.0 feet
(El. 684.5')

Bottom of Casing
3.7 feet below
ground surface (El. 682.5')

RUN NUMBER	START TIME (HOURS)	END TIME (HOURS)	ELAPSED TIME (MIN)	DROP IN WATER LEVEL DURING TEST RUN (FEET)	REFILLED WITH WATER, LEVEL FROM TOP OF CASING (FEET)
START					3.0
RUN #1	9:35	10:35	60	0.0	3.0
RUN #2	10:35	11:35	60	0.0	3.0
RUN #3	11:35	12:35	60	0.0	3.0
RUN #4	12:35	1:35	60	0.0	

AVERAGE INFILTRATION RATE 0.0 FEET PER HOUR
AVERAGE INFILTRATION RATE 0.0 INCHES PER HOUR

TESTED BY: C. MURPHY



INFILTRATION TEST DATA SUMMARY

PROJECT: PROPOSED ECC NORTH CAMPUS SPORTS FIELDS

LOCATION: 6205 MAIN STREET, AMHERST, NY

PROJECT NO.: BD099

INFILTRATION

TEST POINT: I-16

PRESOAK DATE: 2/12/2024

PRESOAK TIME:

TEST DATA

TEST DATE: 2/13/2024

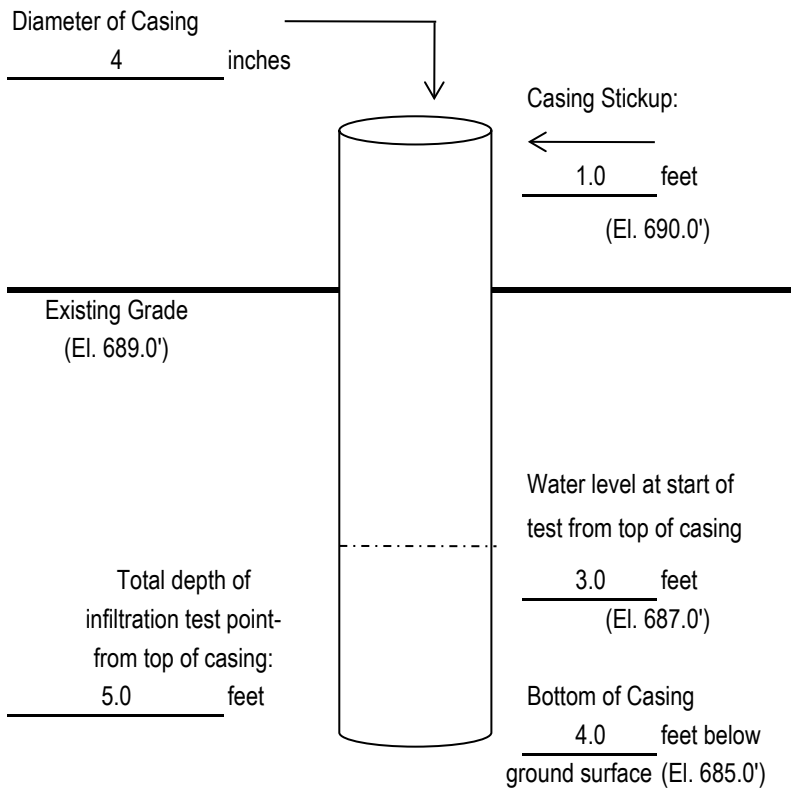
START OF TEST TIME: 10:11 AM

IS THERE PRESOAK WATER IN TEST CASING?

YES ☐ NO ☒

IF YES, WHAT DEPTH:

N/A FEET FROM TOP OF CASING.



RUN NUMBER	START TIME (HOURS)	END TIME (HOURS)	ELAPSED TIME (MIN)	DROP IN WATER LEVEL DURING TEST RUN (FEET)	REFILLED WITH WATER, LEVEL FROM TOP OF CASING (FEET)
START					3.0
RUN #1	10:11	11:11	60	2.0	3.0
RUN #2	11:11	12:11	60	2.0	3.0
RUN #3	12:11	1:11	60	2.0	3.0
RUN #4	1:11	2:11	60	2.0	

AVERAGE INFILTRATION RATE 2.0 FEET PER HOUR
AVERAGE INFILTRATION RATE 24 INCHES PER HOUR

TESTED BY: C. MURPHY



INFILTRATION TEST DATA SUMMARY

PROJECT: PROPOSED ECC NORTH CAMPUS SPORTS FIELDS

LOCATION: 6205 MAIN STREET, AMHERST, NY

PROJECT NO.: BD099

INFILTRATION

TEST POINT: I-17

PRESOAK DATE: 2/12/2024

PRESOAK TIME:

TEST DATA

TEST DATE: 2/13/2024

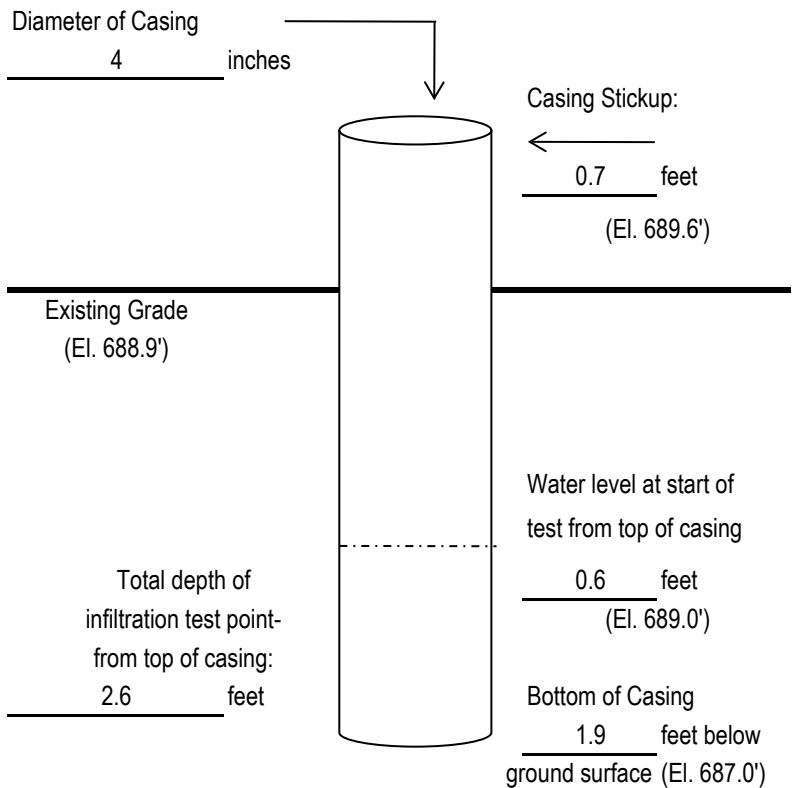
START OF TEST TIME: 10:07 AM

IS THERE PRESOAK WATER IN TEST CASING?

YES ☐ NO ☒

IF YES, WHAT DEPTH:

N/A FEET FROM TOP OF CASING.



RUN NUMBER	START TIME (HOURS)	END TIME (HOURS)	ELAPSED TIME (MIN)	DROP IN WATER LEVEL DURING TEST RUN (FEET)	REFILLED WITH WATER, LEVEL FROM TOP OF CASING (FEET)
START					0.6
RUN #1	10:07	11:07	60	2.0	0.6
RUN #2	11:07	12:07	60	2.0	0.6
RUN #3	12:07	1:07	60	2.0	0.6
RUN #4	1:07	2:07	60	2.0	

AVERAGE INFILTRATION RATE 2.0 FEET PER HOUR
AVERAGE INFILTRATION RATE 24 INCHES PER HOUR

TESTED BY: C. MURPHY



INFILTRATION TEST DATA SUMMARY

PROJECT: PROPOSED ECC NORTH CAMPUS SPORTS FIELDS

LOCATION: 6205 MAIN STREET, AMHERST, NY

PROJECT NO.: BD099

INFILTRATION

TEST POINT: I-18

PRESOAK DATE: 2/12/2024

PRESOAK TIME:

TEST DATA

TEST DATE: 12/13/2024

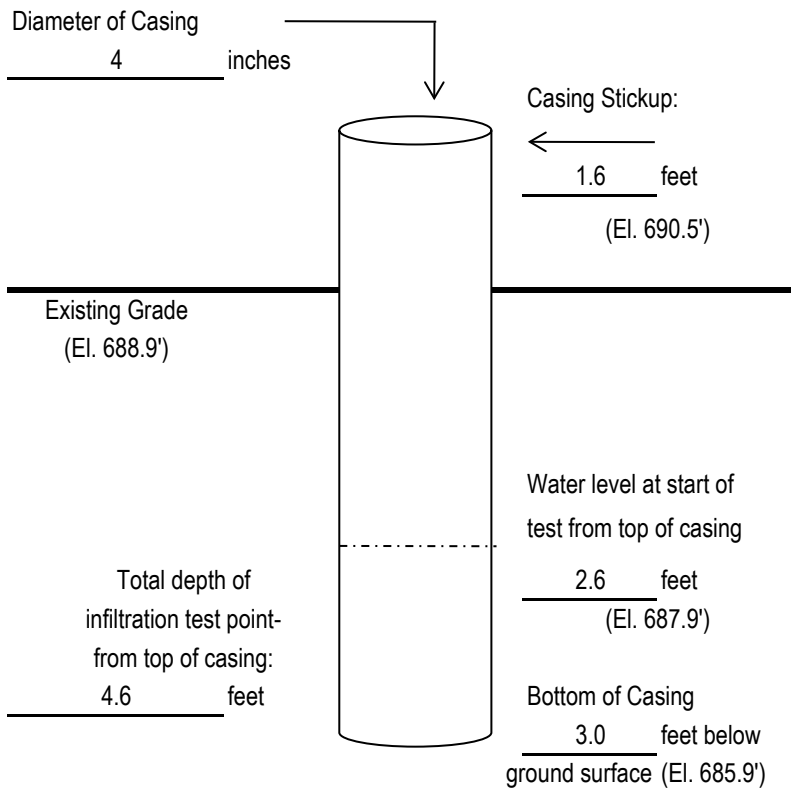
START OF TEST TIME: 10:04 AM

IS THERE PRESOAK WATER IN TEST CASING?

YES ☐ NO ☒

IF YES, WHAT DEPTH:

N/A FEET FROM TOP OF CASING.



RUN NUMBER	START TIME (HOURS)	END TIME (HOURS)	ELAPSED TIME (MIN)	DROP IN WATER LEVEL DURING TEST RUN (FEET)	REFILLED WITH WATER, LEVEL FROM TOP OF CASING (FEET)
START					2.6
RUN #1	10:04	11:04	60	2.0	2.6
RUN #2	11:04	12:04	60	2.0	2.6
RUN #3	12:04	1:04	60	2.0	2.6
RUN #4	1:04	2:04	60	2.0	

AVERAGE INFILTRATION RATE 2.0 FEET PER HOUR
AVERAGE INFILTRATION RATE 24 INCHES PER HOUR

TESTED BY: C. MURPHY



INFILTRATION TEST DATA SUMMARY

PROJECT: PROPOSED ECC NORTH CAMPUS SPORTS FIELDS

LOCATION: 6205 MAIN STREET, AMHERST, NY

PROJECT NO.: BD099

INFILTRATION

TEST POINT: I-19

PRESOAK DATE: 2/1/2024

PRESOAK TIME:

TEST DATA

TEST DATE: 2/2/2024

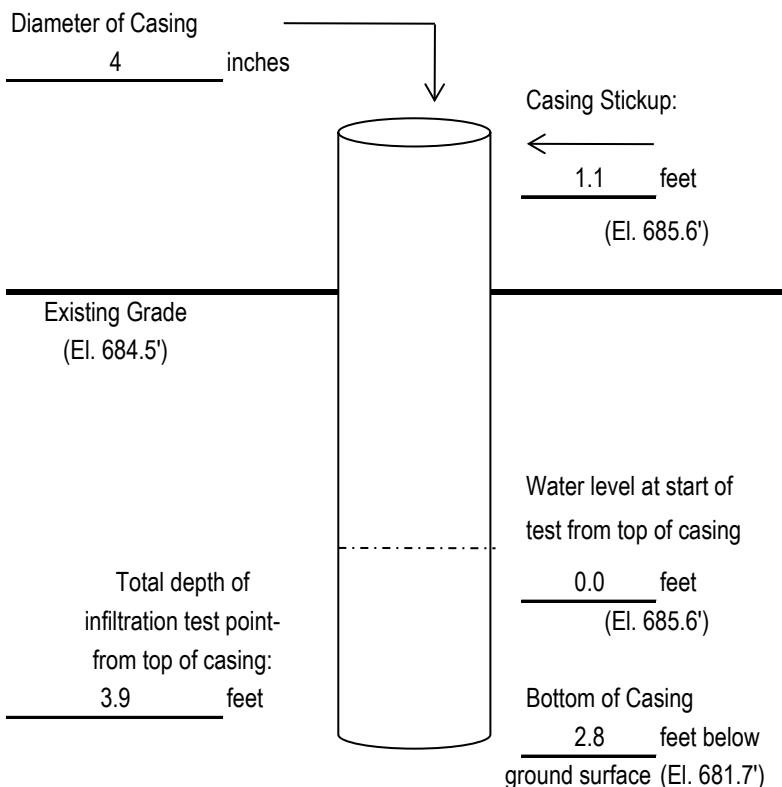
START OF TEST TIME: 10:08 AM

IS THERE PRESOAK WATER IN TEST CASING?

☒ YES ☐ NO

IF YES, WHAT DEPTH:

1.4 FEET FROM TOP OF CASING.
(El. 684.2')



RUN NUMBER	START TIME (HOURS)	END TIME (HOURS)	ELAPSED TIME (MIN)	DROP IN WATER LEVEL DURING TEST RUN (FEET)	REFILLED WITH WATER, LEVEL FROM TOP OF CASING (FEET)
START					0.0
RUN #1	10:08	11:08	60	0.0	0.0
RUN #2	11:08	12:08	60	0.0	0.0
RUN #3	12:08	1:08	60	0.0	0.0
RUN #4	1:08	2:08	60	0.0	

AVERAGE INFILTRATION RATE 0.0 FEET PER HOUR
AVERAGE INFILTRATION RATE 0.0 INCHES PER HOUR

TESTED BY: O. QUARTZ



INFILTRATION TEST DATA SUMMARY

PROJECT: PROPOSED ECC NORTH CAMPUS SPORTS FIELDS

LOCATION: 6205 MAIN STREET, AMHERST, NY

PROJECT NO.: BD099

INFILTRATION

TEST POINT: I-20

PRESOAK DATE: 2/12/2024

PRESOAK TIME:

TEST DATA

TEST DATE: 12/13/2024

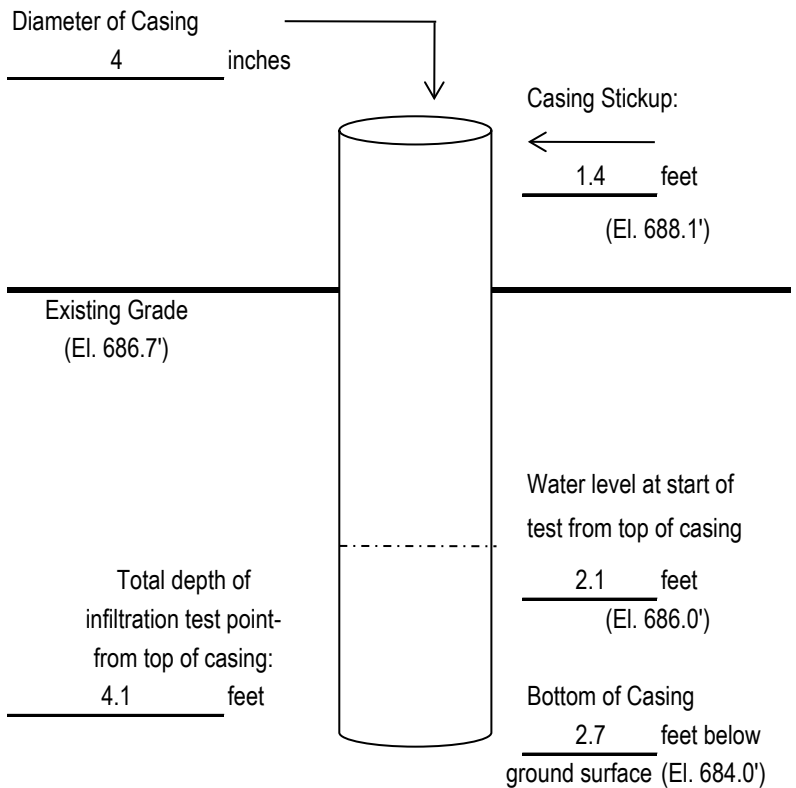
START OF TEST TIME: 9:59 AM

IS THERE PRESOAK WATER IN TEST CASING?

☒ YES ☐ NO

IF YES, WHAT DEPTH:

2.5 FEET FROM TOP OF CASING.
(El. 685.6')



RUN NUMBER	START TIME (HOURS)	END TIME (HOURS)	ELAPSED TIME (MIN)	DROP IN WATER LEVEL DURING TEST RUN (FEET)	REFILLED WITH WATER, LEVEL FROM TOP OF CASING (FEET)
START					2.1
RUN #1	9:59	10:59	60	0.0	2.1
RUN #2	10:59	11:59	60	0.0	2.1
RUN #3	11:59	12:59	60	0.0	2.1
RUN #4	12:59	1:59	60	0.0	

AVERAGE INFILTRATION RATE 0.0 FEET PER HOUR
AVERAGE INFILTRATION RATE 0.0 INCHES PER HOUR

TESTED BY: C. MURPHY



INFILTRATION TEST DATA SUMMARY

PROJECT: PROPOSED ECC NORTH CAMPUS SPORTS FIELDS

LOCATION: 6205 MAIN STREET, AMHERST, NY

PROJECT NO.: BD099

INFILTRATION

TEST POINT: I-21

PRESOAK DATE: 2/12/2024

PRESOAK TIME:

TEST DATA

TEST DATE: 12/13/2024

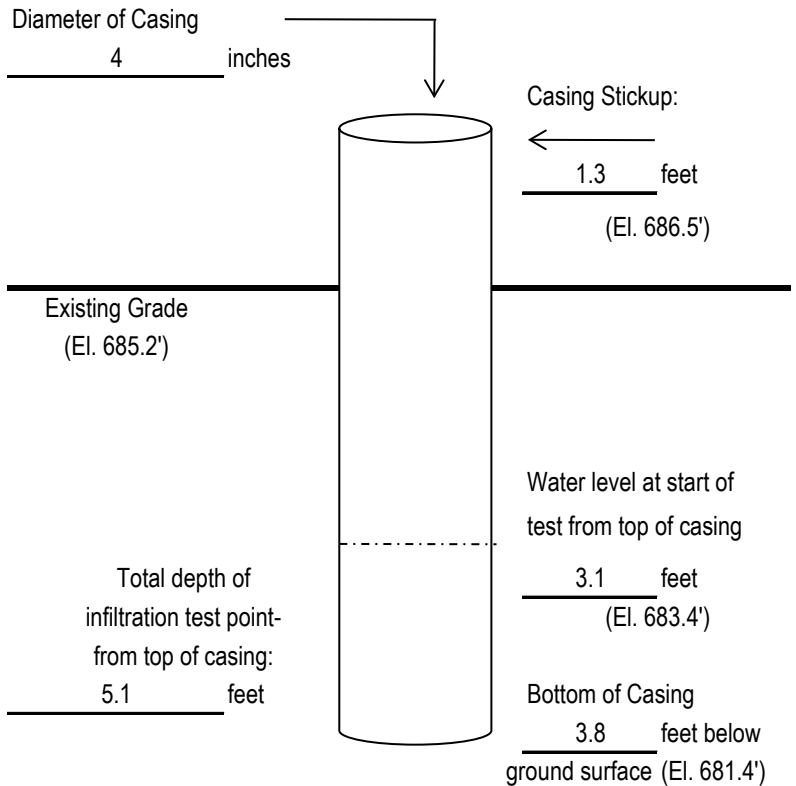
START OF TEST TIME: 9:52 AM

IS THERE PRESOAK WATER IN TEST CASING?

☒ YES ☐ NO

IF YES, WHAT DEPTH:

3.3 FEET FROM TOP OF CASING.
(El. 683.2')



RUN NUMBER	START TIME (HOURS)	END TIME (HOURS)	ELAPSED TIME (MIN)	DROP IN WATER LEVEL DURING TEST RUN (FEET)	REFILLED WITH WATER, LEVEL FROM TOP OF CASING (FEET)
START					3.1
RUN #1	9:52	10:52	60	0.0	3.1
RUN #2	10:52	11:52	60	0.0	3.1
RUN #3	11:52	12:52	60	0.0	3.1
RUN #4	12:52	1:52	60	0.0	

AVERAGE INFILTRATION RATE 0.0 FEET PER HOUR
AVERAGE INFILTRATION RATE 0.0 INCHES PER HOUR

TESTED BY: C. MURPHY

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Concrete formwork.
- B. Concrete for composite floor construction.
- C. Floors and slabs on grade.
- D. Concrete foundation walls.
- E. Concrete reinforcement.
- F. Joint devices associated with concrete work.
- G. Miscellaneous concrete elements, including equipment pads.
- H. Concrete curing.

1.2 RELATED REQUIREMENTS

- A. Section 014533 - Code-Required Special Inspections and Procedures
- B. Section 033511 - Concrete Floor Finishes: Densifiers, hardeners, applied coatings, and polishing.
- C. Section 079200 - Joint Sealants: Products and installation for sealants and joint fillers for saw cut joints and isolation joints in slabs.

1.3 REFERENCE STANDARDS

- A. ACI CODE-318 - Building Code Requirements for Structural Concrete and Commentary; 2019 (Reapproved 2022).
- B. ACI PRC-211.1 - Selecting Proportions for Normal-Density and High Density-Concrete - Guide; 2022.
- C. ACI PRC-302.1 - Guide to Concrete Floor and Slab Construction; 2015.
- D. ACI PRC-304 - Guide for Measuring, Mixing, Transporting, and Placing Concrete; 2000 (Reapproved 2009).
- E. ACI PRC-305 - Guide to Hot Weather Concreting; 2020.
- F. ACI PRC-306 - Guide to Cold Weather Concreting; 2016.

WENDEL
SUNY ERIE COMMUNITY COLLEGE
SPORTS PLAYING FIELD PROJECT PHASE 1
WENDEL PROJECT #: 279806
ECDPW PROJECT #: 2023-956-01 ECCN Sports Fields

- G. ACI PRC-308 - Guide to External Curing of Concrete; 2016.
- H. ACI PRC-347 - Guide to Formwork for Concrete; 2014 (Reapproved 2021).
- I. ACI SPEC-117 - Specification for Tolerances for Concrete Construction and Materials; 2010 (Reapproved 2015).
- J. ACI SPEC-301 - Specifications for Concrete Construction; 2020.
- K. ASTM A194/A194M - Standard Specification for Carbon Steel, Alloy Steel, and Stainless Steel Nuts for Bolts for High Pressure or High Temperature Service, or Both; 2023.
- L. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement; 2022.
- M. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete; 2022.
- N. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2023.
- O. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2023.
- P. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2024.
- Q. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 50 mm [2 in.] Cube Specimens); 2023.
- R. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete; 2020.
- S. ASTM C150/C150M - Standard Specification for Portland Cement; 2022.
- T. ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete; 2020.
- U. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method; 2023.
- V. ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete; 2010a (Reapproved 2016).
- W. ASTM C348 - Standard Test Method for Flexural Strength of Hydraulic-Cement Mortars; 2021.
- X. ASTM C348 - Standard Test Method for Flexural Strength of Hydraulic-Cement Mortars; 2021.
- Y. ASTM C472 - Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters, and Gypsum Concrete; 2020.
- Z. ASTM C472 - Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters, and Gypsum Concrete; 2020.
- AA. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete; 2019, with Editorial Revision (2022).

WENDEL
SUNY ERIE COMMUNITY COLLEGE
SPORTS PLAYING FIELD PROJECT PHASE 1
WENDEL PROJECT #: 279806
ECDPW PROJECT #: 2023-956-01 ECCN Sports Fields

- BB. ASTM C685/C685M - Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing; 2017.
- CC. ASTM C881/C881M - Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete; 2020a.
- DD. ASTM C1059/C1059M - Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete; 2021.
- EE. ASTM C1107/C1107M - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink); 2020.
- FF. ASTM C1202 - Standard Test Method for Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration; 2019.
- GG. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete; 2022.
- HH. ASTM D8139 - Standard Specification for Semi-Rigid, Closed-Cell Polypropylene Foam, Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction; 2023.
- II. ASTM D8139 - Standard Specification for Semi-Rigid, Closed-Cell Polypropylene Foam, Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction; 2023.
- JJ. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2023.
- KK. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2023.
- LL. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Asphalt Types); 2023.
- MM. ASTM E1155 - Standard Test Method for Determining FF Floor Flatness and FL Floor Levelness Numbers; 2020.
- NN. ASTM E1155M - Standard Test Method for Determining FF Floor Flatness and FL Floor Levelness Numbers (Metric); 2014.
- OO. ASTM E1643 - Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs; 2018a.
- PP. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs; 2017 (Reapproved 2023).
- QQ. ASTM F593 - Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs; 2022.
- RR. ASTM F1554 - Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength; 2020.

- SS. ICC-ES AC308 - Acceptance Criteria for Post-Installed Adhesive Anchors in Concrete Elements; 2023.
- TT. ICRI 310.2R - Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair; 2013.

1.4 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions for each product indicated in the specification and drawings.
- C. Mix Design: Submit proposed concrete mix design.
 - 1. Indicate proposed mix design complies with requirements of ACI SPEC-301, Section 4 - Concrete Mixtures.
 - 2. Indicate proposed mix design complies with admixture manufacturer's written recommendations.
- D. Shop Drawings: Comply with requirements of ACI SP-66. Place drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.
- E. Samples: Submit samples of underslab vapor retarder to be used.
- F. Test Reports: Submit report for each test or series of tests specified.
- G. Minutes of preinstallation conference.

1.5 QUALITY ASSURANCE

- A. Perform work of this section in accordance with ACI SPEC-301 and ACI CODE-318.
- B. Follow recommendations of ACI PRC-305 when concreting during hot weather.
- C. Follow recommendations of ACI PRC-306 when concreting during cold weather.
- D. Installer Qualifications:
 - 1. A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.
 - 2. An experienced installer who has completed concrete Work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance
- E. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94 requirements for production facilities and equipment.

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1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- F. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant and obtain aggregate from one source. Obtain admixtures through one source from a single manufacturer, unless supplier certifies compatibility between admixtures from multiple manufacturers.
- G. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.
- H. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." The Contractor shall record, type, and distribute minutes of the meeting to all parties concerned within 5 days.
 1. Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
 - a. Contractor's superintendent.
 - b. Special Inspector.
 - c. Independent testing agency responsible for concrete design mixes.
 - d. Independent testing agency responsible for field quality control.
 - e. Ready-mix concrete manufacturer.
 - f. Concrete subcontractor.
 - g. Concrete pump supplier (if pumps are to be used).
 - h. Architect.
 2. Review special inspection and testing and inspecting agency procedures for field quality control; concrete finishes and finishing; cold- and hot-weather concreting procedures; curing procedures; construction, contraction and isolation joints; joint-filler strips and semi-rigid joint fillers; forms and form removal limitations; shoring and reshoring procedures; vapor-retarder installation; anchor rod and anchorage device installation tolerances; steel reinforcement installation; floor and slab flatness and levelness measurement; concrete repair procedures; and concrete protection.

1.6 WARRANTY

- A. See Section 017800 - Closeout Submittals for additional warranty requirements.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.

PART 2 PRODUCTS

2.1 FORMWORK

- A. Formwork Design and Construction: Comply with guidelines of ACI PRC-347 to provide formwork that will produce concrete complying with tolerances of ACI SPEC-117.

- B. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
 - 1. Form Facing for Exposed Finish Concrete: Contractor's choice of materials that will provide smooth, stain-free final appearance.
 - 2. Form Coating: Release agent that will not adversely affect concrete or interfere with application of coatings.
 - 3. Form Ties: Cone snap type that will leave no metal within 1-1/2 inches of concrete surface.
- C. Void Forms: Biodegradable paper surface, treated for moisture resistance, structurally sufficient to support weight of plastic concrete and other superimposed loads.
- D. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch, minimum.

2.2 REINFORCEMENT MATERIALS

- A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi).
 - 1. Type: Deformed billet-steel bars.
 - 2. Finish: Unfinished, unless otherwise indicated.
- B. Steel Welded Wire Reinforcement (WWR): Plain type, ASTM A1064/A1064M.
 - 1. Form: Flat Sheets.
 - 2. WWR Style: As indicated on drawings.
- C. Reinforcement Accessories:
 - 1. Tie Wire: Annealed, minimum 16 gauge, 0.0508 inch.
 - 2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.
 - 3. Provide stainless steel, galvanized, plastic, or plastic coated steel components for placement within 1-1/2 inches of weathering surfaces.

2.3 CONCRETE MATERIALS

- A. Cement: ASTM C150/C150M, Type I - Normal Portland type. , Color: Gray
 - 1. Acquire cement for entire project from same source.
 - 2. Supplemental cementitious materials are not acceptable.
- B. Fine and Coarse Aggregates: ASTM C33/C33M.
 - 1. Acquire aggregates for entire project from same source.
 - 2. Class 3S coarse aggregate or better, graded.
 - 3. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- C. Water: ASTM C1602/C1602M; clean, potable, and not detrimental to concrete.

2.4 ADMIXTURES

- A. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.

- B. Air Entrainment Admixture: ASTM C260/C260M.
- C. High Range Water Reducing and Retarding Admixture: ASTM C494/C494M Type G.
- D. High Range Water Reducing Admixture: ASTM C494/C494M Type F.
- E. Water Reducing and Accelerating Admixture: ASTM C494/C494M Type E.
- F. Water Reducing and Retarding Admixture: ASTM C494/C494M Type D.
- G. Accelerating Admixture: ASTM C494/C494M Type C.
- H. Retarding Admixture: ASTM C494/C494M Type B.
- I. Water Reducing Admixture: ASTM C494/C494M Type A.

2.5 ACCESSORY MATERIALS

- A. Underslab Vapor Retarder:
 - 1. Sheet Material: ASTM E1745, Class A; 15 mil thickness, stated by manufacturer as suitable for installation in contact with soil or granular fill under concrete slabs. Single ply polyethylene is prohibited.
 - 2. Accessory Products: Vapor retarder manufacturer's recommended tape, adhesive, mastic, prefabricated boots, etc., for sealing seams and penetrations.
- B. Non-Shrink Cementitious Grout: Premixed compound consisting of nonmetallic aggregate, cement, water reducing and plasticizing agents.
 - 1. Grout: Comply with ASTM C1107/C1107M.
 - 2. Minimum Compressive Strength at 48 Hours, ASTM C109/C109M: 2,000 pounds per square inch.
 - 3. Minimum Compressive Strength at 28 Days, ASTM C109/C109M: 7,000 pounds per square inch.
 - 4. Products containing aluminum powder are not permitted.

2.6 BONDING AND JOINTING PRODUCTS

- A. Latex Bonding Agent: Non-redispersable acrylic latex, complying with ASTM C1059/C1059M, Type II.
- B. Epoxy Bonding System:
 - 1. Complying with ASTM C881/C881M and of Type required for specific application.
- C. Hybrid Anchoring System:
 - 1. High performance injectable epoxy mortars are to be used for drilling and grouting steel rebar and threaded anchor rods into hardened concrete.
 - a. Base Materials: Concrete, cracked and un-cracked.
 - b. Base Material Condition: dry, submerged, water-filled, wet.
 - c. Epoxy suitable for all-year use; cures at base material temperature range of 23 - 104 degrees fahrenheit.

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- d. Allowable with hammer-drill, hollow drill bit system, and core drilling methods.
- e. Adhesive: Complying with ASTM C881/C881M and of Type required for specific application; Type N, Grade 2 and 3, Class A, B, and C except gel times.
- f. Anchor Rod:
 - 1) Moisture Exposed Anchors: ASTM F593, AISI Type 316 stainless steel, condition CW, with ASTM A194/A194M, Grade 8S (nitronic 60) stainless steel nuts and locknuts.
 - 2) Dry/Protected Anchors: ASTM F1554 Grade 36
- 2. Adhesives shall have an evaluation report by ICC ES and be successfully tested in accordance with ICC-ES AC308.
- 3. Minimum Embedment: 4 inches unless indicated otherwise on the Contract Drawings.
- 4. Anchor capacity used in design shall be based on the technical data published by HILTI. Substitution requests for alternate products must be approved in writing by the structural engineer of record prior to use. Contractor shall provide calculations that have been sealed by another licensed engineer demonstrating that the substituted product is capable of meeting the performance of the specified product. Substitutions will be evaluated by their having an ICC ESR showing compliance with the relevant building code for seismic uses, load resistance, installation category, and installation instructions. Adhesive anchor evaluation will also consider creep, in-service temperature, installation temperature, moisture condition of the concrete, and drilling methods.
- 5. The contractor shall arrange an anchor manufacturer's representative to provide onsite installation training for all anchor products specified. The structural engineer of record must receive documented confirmation that all personnel who install anchors are trained prior to the commencement of anchor installation.
- D. Slab Isolation Joint Filler: 1/2-inch thick, height equal to slab thickness, with removable top section forming 1/2-inch deep sealant pocket after removal.
 - 1. Material: ASTM D1751, cellulose fiber.
- E. Slab Construction Joint Devices: Combination keyed joint form and screed, galvanized steel, with rectangular or round knockout holes for conduit or rebar to pass through joint form at 6 inches on center; ribbed steel stakes for setting.
- F. Dowel Sleeves: Plastic sleeve and nailable plastic base for smooth, round, steel load-transfer dowels.

2.7 CURING MATERIALS

- A. Evaporation Reducer: Liquid thin-film-forming compound that reduces rapid moisture loss caused by high temperature, low humidity, and high winds; intended for application immediately after concrete placement.
- B. Curing Compound, Naturally Dissipating: Clear, water-based, liquid membrane-forming compound; complying with ASTM C309.
- C. Moisture-Retaining Sheet: ASTM C171.
 - 1. Polyethylene film, white opaque, minimum nominal thickness of 4 mil, 0.004 inch.
 - 2. White-burlap-polyethylene sheet, weighing not less than 3.8 ounces per square yard.

- D. Water: Potable, not detrimental to concrete.

2.8 CONCRETE MIX DESIGN

- A. Proportioning Normal Weight Concrete: Comply with ACI PRC-211.1 recommendations.
- B. Concrete Strength: Establish required average strength for each type of concrete on the basis of field experience or trial mixtures, as specified in ACI SPEC-301.
1. For trial mixtures method, employ independent testing agency acceptable to Architect for preparing and reporting proposed mix designs.
- C. Admixtures: Add acceptable admixtures as recommended in ACI PRC-211.1 and at rates recommended or required by manufacturer.
- D. When a mineral aggregate hardener is to be used, consult with the manufacturer prior to concrete mix design submittal in order to determine its compatibility with the hardener.
- E. Concrete Mix requirements:

Portion of Structure	28-day Minimum Strength (psi)	Slump (+/- 1")	Maximum Water/cement Ratio	Air Content (+/- 1.5%)	Maximum Coarse Aggregate Size (ASTM C33)
Footings	3000	3"	0.50	6%	#57
Foundation walls, piers, grade beams	4500	4"	0.42	6%	#57
Interior slabs on grade	4000	4"	0.45	2%	#57
Interior slabs on metal deck (normal weight)	4000	3"	0.45	2%	#57

2.9 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.10 MIXING

- A. On Project Site: Mix in drum type batch mixer, complying with ASTM C685/C685M. Mix each batch not less than 1-1/2 minutes and not more than 5 minutes.
- B. Transit Mixers: Comply with ASTM C94/C94M.
- C. Adding Water: If concrete arrives on-site with slump less than suitable for placement, do not add water that exceeds the maximum water-cement ratio or exceeds the maximum permissible slump.

- D. Furnish batch ticket information.
- E. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 EXECUTION

3.1 EXAMINATION

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

3.2 PREPARATION

- A. Formwork: Comply with requirements of ACI SPEC-301. Design and fabricate forms to support all applied loads until concrete is cured and for easy removal without damage to concrete.
- B. Verify that forms are clean and free of rust before applying release agent.
- C. Chamfer exterior corners and edges of permanently exposed concrete.
- D. Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.
- E. Prepare existing concrete surfaces to be repaired according to ICRI 310.2R, CSP 6.
- F. Where new concrete is to be bonded to previously placed concrete, prepare existing surface by cleaning and applying bonding agent in according to bonding agent manufacturer's instructions.
 - 1. Use epoxy bonding system for bonding to damp surfaces, for structural load-bearing applications, and where curing under humid conditions is required.
 - 2. Use latex bonding agent only for non-load-bearing applications.
- G. In locations where new concrete is doweled to existing work, drill holes in existing concrete, install adhesive anchor system material, and insert steel dowels.
- H. Interior Slabs on Grade: Install vapor retarder under interior slabs on grade. Comply with ASTM E1643. Lap joints minimum 6 inches. Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions. Repair damaged vapor retarder before covering.
 - 1. Vapor Retarder Over Granular Fill: Install compactible granular fill before placing vapor retarder as indicated on drawings. Do not use sand.

3.3 INSTALLING REINFORCEMENT AND OTHER EMBEDDED ITEMS

- A. Comply with requirements of ACI SPEC-301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection. 'Wet sticking' components in concrete is not acceptable.

- B. Install welded wire reinforcement in maximum possible lengths, and offset end laps in both directions. Splice laps with tie wire.
- C. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with concrete placement.

3.4 PLACING CONCRETE

- A. Place concrete in accordance with ACI PRC-304.
- B. Place concrete for floor slabs in accordance with ACI PRC-302.1.
- C. Notify Architect not less than 24 hours prior to commencement of placement operations.
- D. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
- E. Ensure reinforcement, inserts, waterstops, embedded parts, and formed construction joint devices will not be disturbed during concrete placement.
- F. Place concrete continuously without construction (cold) joints wherever possible; where construction joints are necessary, before next placement prepare joint surface by removing laitance and exposing the sand and sound surface mortar, by sandblasting or high-pressure water jetting.
- G. Finish floors level and flat, unless otherwise indicated, within the tolerances specified below.
- H. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect.

3.5 SLAB JOINTING

- A. Locate joints as indicated on drawings.
- B. Anchor joint fillers and devices to prevent movement during concrete placement.
- C. Isolation Joints: Use preformed joint filler with removable top section for joint sealant, total height equal to thickness of slab, set flush with top of slab.
- D. Load Transfer Construction and Contraction Joints: Install load transfer devices as indicated; saw cut joint at surface as indicated for contraction joints.
- E. Saw Cut Contraction Joints: Saw cut joints before concrete begins to cool, within 4 to 12 hours after placing; use 3/16 inch thick blade and cut at least 1 inch deep but not less than one quarter (1/4) the depth of the slab.
- F. Construction Joints: Where not otherwise indicated, use metal combination screed and key form, with removable top section for joint sealant.

3.6 FLOOR FLATNESS AND LEVELNESS TOLERANCES

- A. Minimum F(F) Floor Flatness and F(L) Floor Levelness Values:
 - 1. Exposed to View and Foot Traffic: F(F) of 20; F(L) of 15, on-grade only.
 - 2. Under Thick-Bed Tile: F(F) of 20; F(L) of 15, on-grade only.
 - 3. Under Carpeting: F(F) of 25; F(L) of 20, on-grade only.
 - 4. Under Thin Resilient Flooring and Thinset Tile: F(F) of 35; F(L) of 25, on-grade only.
- B. Measure F(F) Floor Flatness and F(L) Floor Levelness in accordance with ASTM E1155 (ASTM E1155M), within 48 hours after slab installation; report both composite overall values and local values for each measured section.
- C. Correct the slab surface if composite overall value is less than specified and if local value is less than two-thirds of specified value or less than F(F) 13/F(L) 10.
- D. Correct defects by grinding or by removal and replacement of the defective work. Areas requiring corrective work will be identified. Re-measure corrected areas by the same process.

3.7 CONCRETE FINISHING

- A. Repair surface defects, including tie holes, immediately after removing formwork.
- B. Unexposed Form Finish: Rub down or chip off fins or other raised areas 1/4 inch or more in height.
- C. Exposed Form Finish: Rub down or chip off and smooth fins or other raised areas 1/4 inch or more in height. Provide finish as follows:
 - 1. Smooth Rubbed Finish: Wet concrete and rub with carborundum brick or other abrasive, not more than 24 hours after form removal.
- D. Concrete Slabs: Finish to requirements of ACI PRC-302.1 and as follows:
 - 1. Surfaces to Receive Thin Floor Coverings: "Steel trowel" as described in ACI PRC-302.1; thin floor coverings include carpeting, resilient flooring, seamless flooring, resinous matrix terrazzo, thin set quarry tile, and thin set ceramic tile.
 - 2. Decorative Exposed Surfaces: Trowel as described in ACI PRC-302.1; take measures necessary to avoid black-burnish marks; decorative exposed surfaces include surfaces to receive liquid hardeners and all other exposed slab surfaces.
 - 3. Other Surfaces to Be Left Exposed: Trowel as described in ACI PRC-302.1, minimizing burnish marks and other appearance defects.
 - 4. Chemical Hardener: See Section 033511 - Concrete Floor Finishes.
- E. In areas with floor drains, maintain floor elevation at walls; pitch surfaces uniformly to drains at 1:100 nominal.
- F. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.8 CURING AND PROTECTION

- A. Comply with requirements of ACI PRC-308. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
 - 1. Normal concrete: Not less than seven days.
- C. Formed Surfaces: Cure by moist curing with forms in place for full curing period.
- D. Surfaces Not in Contact with Forms:
 - 1. Slabs and Floors To Receive Adhesive-Applied Flooring: Curing compounds and other surface coatings are usually considered unacceptable by flooring and adhesive manufacturers. If such materials must be used, either obtain the approval of the flooring and adhesive manufacturers prior to use or remove the surface coating after curing to flooring manufacturer's satisfaction.
 - 2. Initial Curing: Start as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than three days by water ponding, water-saturated sand, water-fog spray, or saturated burlap.
 - a. Saturated Burlap: Saturate burlap-polyethylene and place burlap-side down over floor slab areas, lapping ends and sides; maintain in place.
 - 3. Final Curing: Begin after initial curing but before surface is dry.
 - a. Moisture-Retaining Sheet: Lap strips not less than 3 inches and seal with waterproof tape or adhesive; secure at edges.
 - 4. Wait a minimum of 48 hours after finishing slab before allowing foot traffic on slab. Do not allow construction traffic or loads to be applied to slabs on grade until the concrete is 7 days old.

3.9 FIELD QUALITY CONTROL

- A. An independent testing agency will perform field quality control tests, as specified in Section 014000 - Quality Requirements.
- B. Special Inspections: Special Inspections required are enumerated in the Schedule of Special Inspection Services contained in Section 014533 - Code-Required Special Inspections and Procedures.
- C. Provide free access to concrete operations at project site and cooperate with appointed firm.
- D. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of concrete operations.
- E. Tests of concrete and concrete materials may be performed at any time to ensure compliance with specified requirements.
- F. Testing Frequency: Obtain samples from the first three (3) batches at the start of placement for each day's pour of each concrete mixture exceeding 5 cu. yd., plus one (1) set for each additional 50 cu. yd. or fraction thereof.

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1. Should any portion of required testing and/or batch time not meet specified requirements, the concrete batch in question shall be rejected. Testing shall then be performed until three (3) consecutive batches of concrete meets all specified requirements, including batch time. Testing shall return to the specified frequency only when all testing requirements have been satisfied for three (3) consecutive batches of concrete.
 - a. All appropriate parties shall be notified immediately of each failed test.
 - b. Additional testing required due to concrete not meeting specified requirements shall be performed at contractor's expense.
 2. When frequency of testing will provide fewer than five (5) composite samples of each concrete mixture, testing shall be conducted from at least five (5) randomly selected batches or from each batch if fewer than five (5) are used.
- G. Compressive Strength Tests: ASTM C39/C39M, for each test, mold and cure three concrete test cylinders. Obtain test samples for every 50 cubic yards or less of each class of concrete placed.
- H. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.
- I. 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.
- J. Perform one slump test for each set of test cylinders taken, following procedures of ASTM C143/C143M. Perform additional tests when concrete consistency appears to change.
- K. Air Content: ASTM C 231, pressure method, for normal-weight concrete; ASTM C173/C173M, volumetric method, for structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
- L. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
- M. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
- N. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42 or by other methods as directed by Architect.
- O. Measure floor and slab flatness and levelness according to ASTM E1155 within 24 to 48 hours of finishing.
 1. Calculate the actual overall F numbers using the inferior/superior method.
 2. Take measurements for elevated slabs before removal of any shores and formwork.
 3. Provide the Architect and Contractor with the results of all profile tests, including a running tabulation of the overall F numbers to date, within 72 hours after the completion of each slab placement
- P. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

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3.10 DEFECTIVE CONCRETE

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

3.11 PROTECTION

- A. Do not permit traffic over unprotected concrete floor surface until fully cured.

END OF SECTION

SECTION 033511 - CONCRETE FLOOR FINISHES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Liquid densifiers and hardeners.

1.2 RELATED REQUIREMENTS

- A. Section 033000 - Cast-in-Place Concrete: Finishing of concrete surface to tolerance; floating, troweling, and similar operations; curing.

1.3 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate the work with concrete floor placement and concrete floor curing.

1.4 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's published data on each finishing product, including information on compatibility of different products and limitations.
- C. Maintenance Data: Provide data on maintenance and renewal of applied finishes.
- D. Warranty Documentation: Manufacturer warranty; ensure that forms have been completed in Owner's name and registered with manufacturer.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer's sealed packaging, including application instructions.

1.6 FIELD CONDITIONS

- A. Maintain ambient temperature of 50 degrees F minimum.

1.7 WARRANTY

- A. See Section 017800 - Closeout Submittals for additional warranty requirements.
- B. Correct defective work within a two-year period commencing on the Date of Substantial Completion.

PART 2 PRODUCTS

2.1 CONCRETE FLOOR FINISH APPLICATIONS

- A. Unless otherwise indicated, all concrete floors are to be finished using liquid densifier/hardener.

2.2 DENSIFIERS AND HARDENERS

- A. Liquid Densifier and Hardener: Penetrating chemical compound that reacts with concrete, filling the pores, hardening, and dustproofing.
 - 1. Composition: Sodium silicate.
 - a. Products:
 - 1) Euclid Chemical Company; EUCO DIAMOND HARD: www.euclidchemical.com/#sle.
 - 2) L&M Construction Chemicals, Inc; SEAL HARD: www.lmcc.com/#sle.
 - 3) W. R. Meadows, Inc; Liqui-Hard: www.wrmeadows.com/#sle.
 - 4) Substitutions: See Section 016000 - Product Requirements.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that floor surfaces are acceptable to receive the work of this section.
- B. Verify that flaws in concrete have been patched and joints filled with methods and materials suitable for further finishes.

3.2 GENERAL

- A. Apply materials in accordance with manufacturer's instructions.

3.3 COATING APPLICATION

- A. Verify that surface is free of previous coatings, sealers, curing compounds, water repellents, laitance, efflorescence, fats, oils, grease, wax, soluble salts, residues from cleaning agents, and other impediments to adhesion.
- B. Verify that water vapor emission from concrete and relative humidity in concrete are within limits established by coating manufacturer.
- C. Protect adjacent non-coated areas from drips, overflow, and overspray; immediately remove excess material.

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- D. Apply coatings in accordance with manufacturer's instructions, matching approved mock-ups for color, special effects, sealing and workmanship.

END OF SECTION

SECTION 051200 - STRUCTURAL STEEL FRAMING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Structural steel framing members.
- B. Base plates, shear stud connectors and expansion joint plates.
- C. Grout.
- D. Accessories.

1.2 RELATED REQUIREMENTS

- A. Section 014000 - Quality Requirements.
- B. Section 014533 - Code-Required Special Inspections and Procedures.
- C. Section 052100 - Steel Joist Framing.
- D. Section 053100 - Steel Decking: Support framing for small openings in deck.
- E. Section 055000 - Metal Fabrications: Steel fabrications affecting structural steel work.
- F. Section 078100 - Applied Fire Protection: Fireproof protection to framing and metal deck systems.
- G. Division 09 Sections for surface preparation, priming and final painting requirements.

1.3 REFERENCE STANDARDS

- A. AISC (MAN) - Steel Construction Manual; 2023, with Errata (2024).
- B. AISC 303 - Code of Standard Practice for Steel Buildings and Bridges; 2022.
- C. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.
- D. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.
- E. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2023.
- F. ASTM A501/A501M - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing; 2021.

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- G. ASTM A563/A563M - Standard Specification for Carbon and Alloy Steel Nuts (Inch and Metric); 2021a.
- H. ASTM A992/A992M - Standard Specification for Structural Steel Shapes; 2022.
- I. ASTM C827/C827M - Standard Test Method for Change in Height at Early Ages of Cylindrical Specimens of Cementitious Mixtures; 2023.
- J. ASTM E164 - Standard Practice for Contact Ultrasonic Testing of Weldments; 2019.
- K. ASTM E165/E165M - Standard Practice for Liquid Penetrant Testing for General Industry; 2023.
- L. ASTM E709 - Standard Guide for Magnetic Particle Testing; 2021.
- M. ASTM F436/F436M - Standard Specification for Hardened Steel Washers Inch and Metric Dimensions; 2019.
- N. ASTM F959/F959M - Standard Specification for Compressible-Washer-Type Direct Tension Indicators for Use with Structural Fasteners, Inch and Metric Series; 2017a.
- O. ASTM F1554 - Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength; 2020.
- P. ASTM F3125/F3125M - Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, Inch Dimensions 120 ksi and 150 ksi Minimum Tensile Strength, and Metric Dimensions 830 MPa and 1040 MPa Minimum Tensile Strength; 2023.
- Q. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination; 2020.
- R. AWS B2.1/B2.1M - Specification for Welding Procedure and Performance Qualification; 2021, with Errata (2023).
- S. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2020, with Errata (2023).
- T. IAS AC172 - Accreditation Criteria for Fabricator Inspection Programs for Structural Steel AC172; 2019.
- U. RCSC (HSBOLT) - Specification for Structural Joints Using High-Strength Bolts; Research Council on Structural Connections; 2020.
- V. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic); 2019.
- W. SSPC-SP 3 - Power Tool Cleaning; 2018.
- X. SSPC-SP 6 - Commercial Blast Cleaning; 2007.

1.4 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.

- B. Product Data: For each type of product indicated.
- C. Shop Drawings: Show fabrication of structural-steel components.
 - 1. Indicate profiles, sizes, spacing, locations of structural members, openings, attachments, and fasteners.
 - 2. Connections not detailed.
 - 3. Indicate welded connections with AWS A2.4 welding symbols. Indicate net weld lengths.
- D. Welders' Qualification Statement: Welders' certificates in accordance with AWS B2.1/B2.1M and dated no more than 12 months before start of scheduled welding work.
- E. Designer's Qualification Statement.
- F. Fabricator's Qualification Statement: Provide documentation showing steel fabricator is accredited under IAS AC172.

1.5 QUALITY ASSURANCE

- A. Fabricate structural steel members in accordance with AISC (MAN) "Steel Construction Manual."
- B. Installer Qualifications, shall comply with one of the following:
 - 1. Erector shall be a qualified installer who participates in the AISC Quality Certification Program and is designated an AISC-Certified Erector, Category ACSE CSE.
 - 2. For non AISC-Certified Erectors, installer shall comply with the following practices and procedure requirements, and submit supporting documentation.
 - a. Provide a written safety plan, compliant with governmental regulations, that is understood and implemented by supervision and erection crews.
 - b. All welders are qualified per AWS D1.1, "Structural Welding Code--Steel."
 - c. Provide a written bolt tightening procedure, compliant with the Research Council on Structural Connections (RCSC) specifications.
 - d. Provide a written fall protection procedure, periodically monitored and recorded by a qualified fall protection personal.
 - e. Crane operators shall be CCO certified or equivalently trained.
 - f. Provide project specific erection plans with all hoisting and erection requirements.
 - g. Erector shall provide a project history, a minimum of four projects, of similar size jobs with reference contacts.
- C. Fabricator Qualifications, shall comply with one of the following. Additional requirements are provided in the "Source Quality Control" Article.
 - 1. Fabricator shall be a qualified fabricator who participates in the AISC Quality Certification Program and is certified to the "Standard for Steel Building Structures (STD)."
 - 2. For non AISC-Certified Plants, comply with independent testing and inspection requirements.
 - a. Fabricator shall be registered with and approved by authorities having jurisdiction.

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- b. Erector shall provide a project history, a minimum of four projects, of similar size jobs with reference contacts.
- D. Maintain one copy of each document on site.
- E. Welder Qualifications: Welding processes and welding operators qualified in accordance with AWS D1.1/D1.1M and no more than 12 months before start of scheduled welding work.
- F. Comply with applicable provisions of the following specifications and documents:
 - 1. AISC 341 and AISC 341s1.
 - 2. AISC 360.
- G. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Sections.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver structural steel to Project site in such quantities and at such times to ensure continuity of installation.
- B. 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.
- C. Store fasteners in a protected place in sealed containers with manufacturer's labels intact.
 - 1. Fasteners may be repackaged provided Owner'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 F 1852 fasteners and for retesting fasteners after lubrication.

1.7 COORDINATION

- A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' 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.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Steel Angles and Plates: ASTM A36/A36M.

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- B. Steel W Shapes and Tees: ASTM A992/A992M.
- C. Rolled Steel Structural Shapes: ASTM A992/A992M.
- D. Cold-Formed Structural Tubing: ASTM A500/A500M, Grade B.
- E. Hot-Formed Structural Tubing: ASTM A501/A501M, seamless or welded.
- F. High-Strength Structural Bolts, Nuts, and Washers: ASTM F3125/F3125M, Type 1, with matching compatible ASTM A563/A563M nuts and ASTM F436/F436M washers.
- G. Tension Control Bolts: Twist-off type; ASTM F3125/F3125M.
- H. Unheaded Anchor Rods: ASTM F1554, Grade 36, plain, with matching ASTM A563/A563M nuts and ASTM F436/F436M Type 1 washers.
- I. Headed Anchor Rods: ASTM F1554 Grade 36, plain.
- J. Threaded Rods: ASTM A 36.
 - 1. Nuts: ASTM A 563 heavy hex carbon steel.
 - 2. Washers: ASTM F 436 hardened or ASTM A 36 carbon steel.
- K. Load Indicator Washers: Provide washers complying with ASTM F959/F959M at connections requiring high-strength bolts. Provide "Squirter" washers, using highly visible orange gel that squirts out when the correct tension has been reached.
- L. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.
- M. Grout: ASTM C1107/C1107M; Non-shrink; premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.
 - 1. Minimum Compressive Strength at 48 Hours: 2,000 pounds per square inch.
 - 2. Minimum Compressive Strength at 28 Days: 7,000 pounds per square inch.
 - 3. Height Change, Plastic State; when tested according to ASTM C827/C827M:
 - a. Maximum: Plus 4 percent.
 - b. Minimum: Plus 1 percent.
- N. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20 Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.
- O. Primer
 - 1. Primer: Fabricator's standard lead- and chromate-free, nonasphaltic, rust-inhibiting primer.

2.2 FABRICATION

- A. Shop fabricate to greatest extent possible. Fabricate according to AISC's "Code of Standard Practice for Steel Buildings and Bridges" and AISC 360.
- B. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.

- C. Bolt Holes: Cut, drill, mechanically thermal cut, 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 according to SSPC-SP 1, "Solvent Cleaning" or SSPC-SP 2, "Hand Tool Cleaning."
- F. Continuously seal joined members by continuous welds. Grind exposed welds smooth.
- G. Fabricate connections for bolt, nut, and washer connectors.

2.3 FINISH

- A. Prepare structural component surfaces in accordance with SSPC-SP 3 for interior steel exposed to view.
- B. Shop prime structural steel members. Do not prime surfaces that will be galvanized, fireproofed, field welded, in contact with concrete, or high strength bolted.
- C. Immediately after surface preparation, apply primer according to manufacturer's written instructions and at rate recommended by SSPC to provide the dry film thickness specified, but not less than 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 inaccessible surfaces after assembly or erection. Change color of second coat to distinguish it from first.
- D. Galvanize structural steel members to comply with ASTM A123/A123M. Provide minimum 1.7 oz/sq ft galvanized coating.
 - 1. Fill vent holes and grind smooth after galvanizing.
 - 2. Galvanize lintels and shelf angles attached to structural-steel frame and located in exterior walls.
 - 3. Galvanizing Repair Paint: SSPC-Paint 20.

2.4 SOURCE QUALITY CONTROL

- A. For AISC certified facilities, submit a written program for the proposed fabrication quality control. As a minimum, perform at least the following shop tests and inspections and submit test reports. If Fabricator's facility is not AISC certified, Contractor will engage an independent testing and inspecting agency, acceptable to the Owner, to perform shop inspections and tests and to prepare test reports.
 - 1. Provide testing agency with access to places where structural-steel work is being fabricated or produced to perform tests and inspections.
 - 2. Testing agency will conduct and interpret tests and state in each report whether test specimens comply with or deviate from requirements.
- B. Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

- C. Additional testing, at Contractor's expense, will be performed to determine compliance of corrected Work with specified requirements.
- D. High-Strength Bolts: Provide testing and verification of shop-bolted connections in accordance with RCSC (HSBOLT) "Specification for Structural Joints Using High-Strength Bolts".
- E. Welded Connections: Visually inspect all shop-welded connections and test welds using one of the following according to AWS D1.1:
 - 1. Radiographic testing performed in accordance with ASTM E94/E94M.
 - 2. Ultrasonic testing performed in accordance with ASTM E164.
 - 3. Liquid penetrant inspection performed in accordance with ASTM E165/E165M.
 - 4. Magnetic particle inspection performed in accordance with ASTM E709.
- F. In addition to visual inspection, shop-welded shear connectors will be tested and inspected according to requirements in AWS D1.1 for stud welding and as follows:
 - 1. Bend tests will be performed if visual inspections reveal either a less-than- continuous 360-degree flash or welding repairs to any shear connector.
 - 2. Tests will be conducted on additional shear connectors if weld fracture occurs on shear connectors already tested, according to requirements in AWS D1.1.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that conditions are appropriate for erection of structural steel and that the work may properly proceed.
- B. Proceed with installation only after unsatisfactory cond

3.2 ERECTION

- A. Erect structural steel in compliance with AISC 303.
- B. Allow for erection loads and provide sufficient temporary bracing to maintain structure in safe condition, plumb, and in true alignment until completion of erection and installation of permanent bracing.
- C. Field weld components and shear studs indicated on shop drawings.
- D. Use carbon steel bolts only for temporary bracing during construction, unless otherwise specifically permitted on drawings. Install high-strength bolts in accordance with RCSC (HSBOLT) "Specification for Structural Joints Using High-Strength Bolts".
- E. Do not field cut or alter structural members without approval of Architect.
- F. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts.

- G. After erection, prime welds, abrasions, and surfaces not shop primed, except surfaces to be in contact with concrete.
- H. Base and Bearing Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting base and bearing plates. Clean bottom surface of base and bearing plates.
 - 1. Set base and bearing plates for structural members on wedges, shims, or setting nuts as required.
 - 2. Weld plate washers to top of base plate.
 - 3. Snug-tighten or pretension anchor rods as directed, after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of base or bearing plate before packing with grout.
 - 4. Promptly pack grout solidly between bearing surfaces and base or bearing 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.

3.3 TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.
- B. Maximum Offset From True Alignment: 1/4 inch.

3.4 FIELD QUALITY CONTROL

- A. An independent testing agency will perform field quality control tests, as specified in Section 014000 - Quality Requirements and 014533 - Code-Required Special Inspections and Procedures.
- B. Correct deficiencies in or remove and replace structural steel that inspections and test reports indicate do not comply with specified requirements.
- C. Additional testing, at Contractor's expense, will be performed to determine compliance of corrected Work with specified requirements.
- D. High-Strength Bolts: Provide testing and verification of field-bolted connections in accordance with RCSC (HSBOLT) "Specification for Structural Joints Using High-Strength Bolts".
- E. Welded Connections: Visually inspect all field-welded connections according to AWS D1.1
 - 1. Ultrasonic testing performed in accordance with ASTM E164.
 - a. 100 % of all full penetration welds.
 - b. 100 % of all column splices in braced or moment frames.
 - c. 20 % of all other partial penetration column splices.
 - 2. Magnetic particle inspection performed in accordance with ASTM E709.
 - a. 20 % of all connection fillet welds at random, final pass only.
 - b. 20 % of all continuity plate and bracing gusset plate fillet welds at random, final pass only.
 - c. 100 % of tension member fillet welds (i.e. hanger connection plates and other similar connections) for root and final passes.

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- d. 20 % of length of built-up column member partial penetration and fillet welds at random for root and final passes.

3.5 REPAIRS AND PROTECTION

- A. Repair damaged galvanized coatings on galvanized items with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.
- B. Touchup Painting: After installation, promptly clean, prepare, and prime or reprime field connections, rust spots, and abraded surfaces of prime-painted joists and accessories, bearing plates, and abutting structural steel.
 - 1. Clean and prepare surfaces by SSPC-SP 2 hand-tool cleaning or SSPC-SP 3 power-tool cleaning.
 - 2. Apply a compatible primer of same type as shop primer used on adjacent surfaces.

END OF SECTION

SECTION 061000 - ROUGH CARPENTRY

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Sheathing.
- B. Preservative treated wood materials.
- C. Fire retardant treated wood materials.
- D. Communications and electrical room mounting boards.
- E. Concealed wood blocking, nailers, and supports.
- F. Miscellaneous wood nailers, furring, and grounds.

1.2 RELATED REQUIREMENTS

- A. Section 092116 - Gypsum Board Assemblies: Gypsum-based sheathing.

1.3 REFERENCE STANDARDS

- A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.
- B. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2017.
- C. ASTM D2898 - Standard Practice for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing; 2010 (Reapproved 2017).
- D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
- E. AWC (WFCM) - Wood Frame Construction Manual for One- and Two-Family Dwellings; 2024, with Errata.
- F. AWWA U1 - Use Category System: User Specification for Treated Wood; 2024.
- G. ICC (IBC) - International Building Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- H. PS 2 - Performance Standard for Wood Structural Panels; 2018.
- I. PS 20 - American Softwood Lumber Standard; 2021.

1.4 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Manufacturer's Certificate: Certify that wood products supplied for rough carpentry meet or exceed specified requirements.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.
- B. Fire Retardant Treated Wood: Prevent exposure to precipitation during shipping, storage, and installation.

1.6 WARRANTY

- A. See Section 017800 - Closeout Submittals for additional warranty requirements.
- B. Correct defective work within a two-year period commencing on Date of Substantial Completion.

PART 2 PRODUCTS

2.1 GENERAL REQUIREMENTS

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
 - 1. If no species is specified, provide species graded by the agency specified; if no grading agency is specified, provide lumber graded by grading agency meeting the specified requirements.
 - 2. Grading Agency: Grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee at www.alsc.org, and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

2.2 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

- A. Sizes: Nominal sizes as indicated on drawings, S4S.
- B. Moisture Content: S-dry or MC19.
- C. Rafter Framing (2 by 6 through 4 by 16):
 - 1. Machine stress-rated (MSR) as follows:
 - a. Fb-single; minimum extreme fiber stress in bending: 1500 psi.
 - b. E; minimum modulus of elasticity: 1,400,000 psi.
 - 2. Species and Grades: As indicated on drawings.

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- D. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
 - 1. Lumber: S4S, No. 2 or Standard Grade.
 - 2. Boards: Standard or No. 3.

2.3 CONSTRUCTION PANELS

- A. Roof Sheathing: PS 2 type, rated Structural I Sheathing.
 - 1. Bond Classification: Exposure 1.
 - 2. Span Rating: 40/20.
 - 3. Performance Category: 15/32 PERF CAT.
- B. Wall Sheathing, For Dugouts: Plywood, PS 1, Grade C-C, Exterior Exposure.
 - 1. Thickness: 3/4 inch unless indicated otherwise.
- C. Communications and Electrical Room Mounting Boards: PS 1 A-D plywood, or medium density fiberboard; 3/4 inch thick; flame spread index of 25 or less, smoke developed index of 450 or less, when tested in accordance with ASTM E84.

2.4 ACCESSORIES

- A. Fasteners and Anchors:
 - 1. Metal and Finish: Hot-dipped galvanized steel complying with ASTM A153/A153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.
 - 2. Drywall Screws: Bugle head, hardened steel, power driven type, length three times thickness of sheathing.
 - 3. Anchors: Toggle bolt type for anchorage to hollow masonry.

2.5 FACTORY WOOD TREATMENT

- A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
 - 1. Fire-Retardant Treated Wood: Mark each piece of wood with producer's stamp indicating compliance with specified requirements.
 - 2. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWPA standards.
- B. Fire Retardant Treatment:
 - 1. Exterior Type: AWPA U1, Category UCFB, Commodity Specification H, chemically treated and pressure impregnated; capable of providing a maximum flame spread index of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes both before and after accelerated weathering test performed in accordance with ASTM D2898.
 - a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
 - b. Treat exterior rough carpentry items.

- c. Do not use treated wood in direct contact with the ground.
- 2. Interior Type A: AWP A U1, Use Category UCFA, Commodity Specification H, low temperature (low hygroscopic) type, chemically treated and pressure impregnated; capable of providing a maximum flame spread index of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes.
 - a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
 - b. Treat rough carpentry items as indicated .
 - c. Do not use treated wood in applications exposed to weather or where the wood may become wet.
- C. Preservative Treatment:
 - 1. Preservative Pressure Treatment of Lumber Above Grade: AWP A U1, Use Category UC3B, Commodity Specification A using waterborne preservative.
 - a. Kiln dry lumber after treatment to maximum moisture content of 19 percent.
 - b. Treat lumber exposed to weather.
 - c. Treat lumber in contact with roofing, flashing, or waterproofing.
 - d. Treat lumber in contact with masonry or concrete.
 - e. Treat lumber less than 18 inches above grade.
 - f. Treat lumber in other locations as indicated.

PART 3 EXECUTION

3.1 PREPARATION

3.2 INSTALLATION - GENERAL

- A. Select material sizes to minimize waste.
- B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.
- C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

3.3 BLOCKING, NAILERS, AND SUPPORTS

- A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim. Provide framing and blocking members for Owner-provided Contractor-installed restroom accessories.
- B. In framed assemblies that have concealed spaces, provide solid wood fireblocking as required by applicable local code, to close concealed draft openings between floors and between top story and roof/attic space; other material acceptable to authorities having jurisdiction may be used in lieu of solid wood blocking.

- C. In metal stud walls, provide continuous blocking around door and window openings for anchorage of frames, securely attached to stud framing.
- D. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.
- E. Where ceiling-mounting is indicated, provide blocking and supplementary supports above ceiling, unless other method of support is explicitly indicated.
- F. Provide the following specific nonstructural framing and blocking:
 - 1. Cabinets and shelf supports.
 - 2. Wall brackets.
 - 3. Handrails.
 - 4. Grab bars.
 - 5. Towel and bath accessories.
 - 6. Wall-mounted door stops.
 - 7. Chalkboards and marker boards.

3.4 INSTALLATION OF CONSTRUCTION PANELS

- A. Roof Sheathing: Secure panels with long dimension perpendicular to framing members, with ends staggered and over firm bearing.
 - 1. Nail panels to framing; staples are not permitted.
- B. Wall Sheathing: Secure with long dimension perpendicular to wall studs, with ends over firm bearing and staggered, using nails, screws, or staples.
- C. Communications and Electrical Room Mounting Boards: Secure with screws to studs with edges over firm bearing; space fasteners at maximum 24 inches on center on all edges and into studs in field of board.
 - 1. At fire-rated walls, install board over wall board indicated as part of the fire-rated assembly.
 - 2. Where boards are indicated as full floor-to-ceiling height, install with long edge of board parallel to studs.
 - 3. Install adjacent boards without gaps.
 - 4. Size and Location: As indicated on drawings.

3.5 FIELD QUALITY CONTROL

- A. See Section 014000 - Quality Requirements for additional requirements.

3.6 CLEANING

- A. Waste Disposal: See Section 017419 - Construction Waste Management and Disposal.
 - 1. Comply with applicable regulations.
 - 2. Do not burn scrap on project site.
 - 3. Do not burn scraps that have been pressure treated.

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4. Do not send materials treated with pentachlorophenol, CCA, or ACA to co-generation facilities or “waste-to-energy” facilities.
- B. Do not leave wood, shavings, sawdust, etc. on the ground or buried in fill.
- C. Prevent sawdust and wood shavings from entering the storm drainage system.

END OF SECTION

SECTION 071616 - CRYSTALLINE WATERPROOFING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Crystalline waterproofing.
- B. Preparation of surfaces.

1.2 RELATED REQUIREMENTS

1.3 REFERENCE STANDARDS

- A. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 50 mm [2 in.] Cube Specimens); 2023.
- B. COE CRD-C 48 - Handbook for Concrete and Cement Standard Test Method for Water Permeability of Concrete; 1992.
- C. NSF 61 - Drinking Water System Components - Health Effects; 2023, with Errata.
- D. UL (DIR) - Online Certifications Directory; Current Edition.
- E. NRCA (WM) - The NRCA Waterproofing Manual; 2021.

1.4 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Manufacturer's qualification statement.
- C. Installer's qualification statement.
- D. Specimen warranty.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with at least three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. See Section 017419 - Construction Waste Management and Disposal for packaging waste requirements.
- B. Store products in manufacturer's unopened packaging until ready for installation.
- C. Take necessary precautions to keep cementitious materials dry.

1.7 FIELD CONDITIONS

- A. Maintain environmental conditions, such as temperature, humidity, and ventilation within limits recommended by manufacturer for acceptable results; do not install products under environmental conditions outside the manufacturer's indicated limits.

1.8 WARRANTY

- A. See Section 017800 - Closeout Submittals for additional warranty requirements.
- B. Installer Warranty: Provide 2-year warranty commencing on the Date of Substantial Completion for correcting leaking waterproofing, unless leakage is caused by structural failure, structural movement, or other causes beyond the installer's control. Complete forms in Owner's name and register with installer.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Crystalline Waterproofing:
 - 1. Tremco Commercial Sealants & Waterproofing; Permaquik 200: www.tremcosealants.com.
 - 2. W.R. Meadows, Inc; CEM-KOTE CW PLUS: www.wrmeadows.com.
 - 3. Xypex Chemical Corporation; Xypex Concentrate: www.xypex.com.

2.2 MATERIALS

- A. Crystalline Waterproofing: Portland cement, quartz or silica sand, and other active chemicals that when applied to surface of concrete forms insoluble crystals in capillary pores preventing passage of liquids, while having no adverse effect on normal properties of concrete.
 - 1. Water Permeability of Applied Concrete: No measurable leakage or water flow at pressure ranging from 175 psi to 200 psi when tested in accordance with COE CRD-C 48, using at least 2-inch thick sample, and with applied surface preparation and installation in accordance with NRCA (WM).
 - 2. Compressive Strength: At least 3600 psi at test age of 28 days in accordance with ASTM C109/C109M test method.
 - 3. Toxicity: Non-toxic.

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- a. Potable Water and Drinking Water Safe: Provide UL (DIR) listed and labeled waterproofing; tested to be safe for use in potable and drinking water applications in accordance with NSF 61.
- B. Plugging Compound: Ready-mixed cementitious compound meeting requirements and approved by waterproofing manufacturer, resistant to water but vapor permeable for horizontal, vertical, and overhead surfaces not exposed to vehicular traffic and compatible with substrate.
- C. Patching Compound: Ready-mixed cementitious mortar approved by waterproofing manufacturer for patching or filling tie holes, reveals, honeycombs, or other damaged cementitious surfaces and compatible with substrate.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using methods recommended by manufacturer for achieving best result for substrate under project conditions, and consider use of sandblasting, water blasting, or acid etching as recommended.
- C. Plug water leaks.
- D. Patch holes, construction joints, and cracks; remove defective concrete.
- E. Obtain approval of manufacturer's field representative before beginning installation.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's written instructions, maintain environmental conditions required and recommended by manufacturer, and keep a copy of manufacturer's instructions on site.
- B. Coordinate waterproofing installation with installation of products that must penetrate waterproofed surfaces.
- C. Prevent excessive drying of surface.
 - 1. Cure waterproofing for at least three days, or length of time required by manufacturer, with water spray and adequate air circulation.
 - 2. Do not use chemical curing agents unless explicitly approved by waterproofing manufacturer.

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- D. Do not backfill, fill water or liquid holding structures, or apply finish coatings until time period recommended by manufacturer has passed.

3.4 PROTECTION

- A. Protect from damage by weather; do not cover with vapor impermeable sheathing or films unless air circulation is provided.
- B. Touch-up, repair or replace damaged waterproofing after Date of Substantial Completion.

END OF SECTION

SECTION 072600 - VAPOR RETARDERS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Section Includes:
 - 1. Polyethylene vapor retarders.

1.2 RELATED REQUIREMENTS

- A. Section 033000 - Cast-in-Place Concrete for under-slab vapor retarders.

1.3 REFERENCE STANDARDS

- A. ASTM D4397 - Standard Specification for Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications; 2016.

1.4 SUBMITTALS

- A. Product Data: For each type of product.
- B. Product Test Reports: For each product, for tests performed by a qualified testing agency.

PART 2 PRODUCTS

2.1 POLYETHYLENE VAPOR RETARDERS

- A. Polyethylene Vapor Retarders: ASTM D4397, 6-mil thick sheet, with maximum permeance rating of 0.1 perm.

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.

PART 3 EXECUTION

3.1 PREPARATION

- A. Clean substrates of substances that are harmful to vapor retarders, including removing projections capable of puncturing vapor retarders.

3.2 INSTALLATION OF VAPOR RETARDERS ON FRAMING

- A. Place vapor retarders on side of construction indicated on Drawings.
- B. Extend vapor retarders to extremities of areas to protect from vapor transmission. Secure vapor retarders in place with adhesives, vapor retarder fasteners, or other anchorage system as recommended by manufacturer. Extend vapor retarders to cover miscellaneous voids in insulated substrates, including those filled with loose-fiber insulation.
- C. Seal vertical joints in vapor retarders over framing by lapping no fewer than two studs and sealing with vapor-retarder tape according to vapor-retarder manufacturer's written instructions. Locate all joints over framing members or other solid substrates.
- D. Seal joints caused by pipes, conduits, electrical boxes, and similar items penetrating vapor retarders with vapor-retarder tape to create an airtight seal between penetrating objects and vapor retarders.
- E. Repair tears or punctures in vapor retarders immediately before concealment by other work. Cover with vapor-retarder tape or another layer of vapor retarders.

3.3 PROTECTION

- A. Protect vapor retarders from damage until concealed by permanent construction.

END OF SECTION

SECTION 072700 - AIR BARRIERS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Air barriers.

1.2 RELATED REQUIREMENTS

- A. Section 061000 - Rough Carpentry: Plywood sheathing.

1.3 DEFINITIONS

- A. Air Barrier: Airtight barrier made of material that is virtually air impermeable but water vapor permeable, both to amount as specified, with sealed seams and sealed joints to adjacent surfaces.

1.4 REFERENCE STANDARDS

- A. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers--Tension; 2016 (Reapproved 2021).
- B. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2021.
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
- D. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2023.
- E. ASTM E2178 - Standard Test Method for Determining Air Leakage Rate and Calculation of Air Permeance of Building Materials; 2021a.
- F. NFPA 285 - Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components; 2023.

1.5 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on material characteristics, performance criteria, and limitations.
- C. Shop Drawings: Provide drawings of special joint conditions.

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- D. Manufacturer's Installation Instructions: Indicate preparation, installation methods, and storage and handling criteria.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing the work of this section with minimum three years documented experience.
- B. Manufacturer Qualification: Use evaluated materials from a single manufacturer regularly engaged in air barrier material manufacture, and use secondary materials approved in writing by primary material manufacturer.

1.7 MOCK-UPS

- A. Construct air barrier mock-up, 10 feet long by 10 feet wide, indicating application thickness and workmanship.
- B. Locate where directed.
- C. Mock-up may remain as part of work.

1.8 FIELD CONDITIONS

- A. Maintain temperature and humidity recommended by materials manufacturers before, during, and after installation.

PART 2 PRODUCTS

2.1 AIR BARRIER MATERIALS (AIR IMPERMEABLE AND WATER VAPOR PERMEABLE)

- A. Air Barrier, Fluid Applied: Vapor permeable, elastomeric waterproofing.
 - 1. Air Barrier Coating:
 - a. Dry Film Thickness (DFT): 40 mil, 0.040 inch, minimum.
 - b. Air Permeance: 0.004 cfm/sq ft, maximum, when tested in accordance with ASTM E2178.
 - c. Water Vapor Permeance: 11 perms, minimum, when tested in accordance with ASTM E96/E96M using Procedure B - Water Method, at 73.4 degrees F.
 - d. Ultraviolet (UV) and Weathering Resistance: Approved by manufacturer for up to 90 days of weather exposure.
 - e. Elongation: 300 percent, minimum, when tested in accordance with ASTM D412.
 - f. Surface Burning Characteristics: Flame spread index of 25 or less, smoke developed index of 450 or less, Class A when tested in accordance with ASTM E84.
 - g. Comply with NFPA 285 requirements for wall assembly.
 - h. Nail Sealability: Pass, when tested in accordance with ASTM D1970/D1970M.
 - i. Sealants, Tapes and Accessories: As recommended by coating manufacturer.
 - j. Products:

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- 1) Dow Chemical Company; DOWSIL DefendAir 200C:
consumer.dow.com/en-us/industry/ind-building-construction.html.
- 2) DuPont de Nemours, Inc; Tyvek Fluid Applied WB+ with Tyvek Fluid Applied Flashing and Joint Compound, Sealant for Tyvek Fluid Applied System, and StraightFlash: building.dupont.com.
- 3) GCP Applied Technologies; Perm-A-Barrier VPL 50RS UV Stable:
www.gcpat.com.
- 4) Substitutions: See Section 016000 - Product Requirements.

2.2 ACCESSORIES

- A. Sealants, Tapes, and Accessories for Sealing Air Barrier and Adjacent Substrates: As indicated or in compliance with air barrier manufacturer's installation instructions.
- B. Sealant for Cracks and Joints In Substrates: Resilient elastomeric joint sealant compatible with substrate and air barrier materials.
 1. Application: Apply at 30 to 40 mil, 0.030 to 0.040 inch, nominal thickness.
 2. Color: Green.
- C. Primer: Liquid applied polymer.
 1. Color: Green.
 2. Elongation: 1,300 percent, measured in accordance with ASTM D412.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that surfaces and conditions are ready for work of this section.
- B. Where existing conditions are responsibility of another installer, notify Architect of unsatisfactory conditions.
- C. Do not proceed with this work until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Remove projections, protruding fasteners, and loose or foreign matter that might interfere with proper installation.
- B. Clean and prime substrate surfaces to receive adhesives and sealants in accordance with manufacturer's installation instructions.

3.3 INSTALLATION

- A. Install materials in accordance with manufacturer's installation instructions.
- B. Air Barriers: Install continuous airtight barrier over surfaces indicated, with sealed seams and with sealed joints to adjacent surfaces.

- C. Apply sealants and adhesives within recommended temperature range in accordance with manufacturer's installation instructions.
- D. Fluid-Applied Coatings or Membranes:
 - 1. Prepare substrate in accordance with manufacturer's installation instructions; treat joints in substrate and between dissimilar materials as indicated.
 - 2. Where exterior masonry veneer is being installed, install masonry anchors before installing air barrier over masonry; provide airtight seal around anchors.
 - 3. Apply bead or trowel coat of mastic sealant with minimum thickness of 1/4 inch along coating seams, rough cuts, and as recommended by manufacturer.
 - 4. Use flashing to seal to adjacent construction and to bridge joints in coating substrate.
- E. Openings and Penetrations in Exterior Air Barriers:
 - 1. Install flashing over sills, covering entire sill frame member, extending at least 5 inches onto air barrier and at least 6 inches up jambs; mechanically fasten stretched edges.
 - 2. At openings with frames having nailing flanges, seal head and jamb flanges using a continuous bead of sealant compressed by flange and cover flanges with sealing tape at least 4 inches wide; do not seal sill flange.
 - 3. At openings with nonflanged frames, seal air barrier to each side of framing at opening using flashing at least 9 inches wide, and covering entire depth of framing.
 - 4. At head of openings, install flashing under air barrier extending at least 2 inches beyond face of jambs; seal air barrier to flashing.
 - 5. At interior face of openings, seal gap between window/door frame and rough framing, using joint sealant over backer rod.
 - 6. Service and Other Penetrations: Form flashing around penetrating item and seal to air barrier surface.

3.4 FIELD QUALITY CONTROL

- A. See Section 014000 - Quality Requirements for additional requirements.
- B. Owner will provide testing services, and Contractor to provide temporary construction and materials for testing.
- C. Coordination of ABAA Tests and Inspections:
 - 1. Provide testing and inspection required by ABAA QAP.
 - 2. Notify ABAA in writing of schedule for air barrier work, and allow adequate time for testing and inspection.
 - 3. Cooperate with ABAA testing agency.
 - 4. Allow access to air barrier work areas and staging.
 - 5. Do not cover air barrier work until tested, inspected, and accepted.
- D. Do not cover installed air barriers until required inspections have been completed.

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3.5 PROTECTION

- A. Do not leave materials exposed to weather longer than recommended by manufacturer.

END OF SECTION

SECTION 074113 - METAL ROOF PANELS

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

1.2 REFERENCE STANDARDS

- A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.
- C. ASTM A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process; 2023.
- D. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members; 2018.
- E. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2020.
- F. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2021.
- G. ASTM E1592 - Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference; 2005 (Reapproved 2017).
- H. ASTM E1646 - Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference; 1995 (Reapproved 2018).
- I. ASTM E1680 - Standard Test Method for Rate of Air Leakage through Exterior Metal Roof Panel Systems; 2016 (Reapproved 2022).
- J. ASTM G90 - Standard Practice for Performing Accelerated Outdoor Weathering of Materials Using Concentrated Natural Sunlight; 2017.
- K. UL 580 - Standard for Tests for Uplift Resistance of Roof Assemblies; Current Edition, Including All Revisions.

1.3 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Storage and handling requirements and recommendations.

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2. Installation methods.
 3. Specimen warranty.
- C. Shop Drawings: Include layouts of roof panels, details of edge and penetration conditions, spacing and type of connections, flashings, underlayments, and special conditions.
1. Show work to be field-fabricated or field-assembled.
 2. Include structural analysis signed and sealed by qualified structural engineer, indicating compliance of roofing system to specified loading conditions.
- D. Selection Samples: For each roofing system specified, submit color chips representing manufacturer's full range of available colors and patterns.
- E. Test Reports: Indicate compliance of metal roofing system to specified requirements.
- F. Warranty: Submit specified manufacturer's warranty and ensure that forms have been completed in Owner's name and are registered with manufacturer.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section and with at least three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Provide strippable plastic protection on prefabricated roofing panels for removal after installation.
- B. Store roofing panels on project site as recommended by manufacturer to minimize damage to panels prior to installation.

1.6 FIELD CONDITIONS

- A. Do not install metal roof panels, eave protection membrane, underlayment, or _____ when surface, ambient air, or wind chill temperatures are below 45 degrees F.

1.7 WARRANTY

- A. See Section 017800 - Closeout Submittals for additional warranty requirements.
- B. Finish Warranty: Provide 20-year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking. Complete forms in Owner's name and register with warrantor.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Architectural Metal Roof Panel Manufacturers:
1. Basis of Design: MBCI; Battenlok HS panel: www.mbc.com.
 2. ATAS International, Inc; Monarch Batten Seam: www.atas.com.
 3. Petersen Aluminum Corporation; Snap-Clad Panel: www.pac-clad.com.
 4. Substitutions: See Section 016000 - Product Requirements.

2.2 PERFORMANCE REQUIREMENTS

- A. Metal Roof Panels: Provide complete roofing assemblies, including roof panels, clips, fasteners, connectors, and miscellaneous accessories, tested for compliance with the following minimum standards:
1. Structural Design Criteria: Provide panel assemblies designed to safely support design loads at support spacing indicated, with deflection not to exceed $L/180$ of span length(L) when tested in accordance with ASTM E1592.
 2. Overall: Complete weathertight system tested and approved in accordance with ASTM E1592.
 3. Wind Uplift: Class 90 wind uplift resistance of UL 580.
 4. Air Infiltration: Maximum 0.25 cfm/sq ft at air pressure differential of 6.24 lbf/sq ft, when tested according to ASTM E1680.
 5. Water Penetration: No water penetration when tested in accordance with procedures and recommended test pressures of ASTM E1646; perform test immediately following air infiltration test.
 6. Thermal Movement: Design system to accommodate without deformation anticipated thermal movement over ambient temperature range of 100 degrees F.

2.3 METAL ROOF PANELS

- A. Metal Roof Panels: Provide complete engineered system complying with specified requirements and capable of remaining weathertight while withstanding anticipated movement of substrate and thermally induced movement of roofing system.
- B. Metal Panels: Factory-formed panels with factory-applied finish.
1. Steel Panels:
 - a. Aluminum-zinc alloy-coated steel complying with ASTM A792/A792M; minimum AZ50 coating.
 - b. Steel Thickness: Minimum 24 gauge, 0.024 inch.
 2. Texture: Smooth, with intermediate ribs for added stiffness.
 3. Length: Full length of roof slope, without lapped horizontal joints.
 4. Width: Maximum panel coverage of 16 inches.

2.4 ATTACHMENT SYSTEM

- A. Concealed System: Provide manufacturer's standard stainless steel concealed anchor clips designed for specific roofing system and engineered to meet performance requirements, including anticipated thermal movement.

2.5 FABRICATION

- A. Panels: Provide factory fabricated panels with applied finish and accessory items, using manufacturer's standard processes as required to achieve specified appearance and performance requirements.
- B. Joints: Provide captive gaskets, sealants, or separator strips at panel joints to ensure weathertight seals, eliminate metal-to-metal contact, and minimize noise from panel movements.

2.6 FINISHES

- A. Finishes, General: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
- B. Fluoropolymer Coil Coating System: Polyvinylidene fluoride (PVDF) multi-coat superior performing organic coatings system complying with AAMA 2605, including at least 70 percent PVDF resin, and at least 80 percent of coil coated metal surfaces having minimum total dry film thickness (DFT) of 0.9 mil, 0.0009 inch; color and gloss as selected by Architect from manufacturer's standard line.
- C. Interior Finish: 0.5 mil (0.013 mm) total dry film thickness consisting of primer coat and wash coat of manufacturer's standard light-colored acrylic or polyester backer finish.

2.7 ACCESSORIES

- A. Miscellaneous Sheet Metal Items: Provide flashings, trim, moldings, closure strips, preformed crickets, caps, and equipment curbs of the same material, thickness, and finish as used for the roofing panels. Items completely concealed after installation may optionally be made of stainless steel.
- B. Rib and Ridge Closures: Provide prefabricated, close-fitting components of steel with corrosion resistant finish or combination steel and closed-cell foam.
- C. Panel Clips: Provide panel clip of type specified, at spacing indicated on approved shop drawings.
 - 1. Single-Piece Fixed: ASTM A653/A653M, ASTM G90 (Z180) hot-dip galvanized zinc coating, configured for concealment in panel joints, and identical to clips utilized in tests demonstrating compliance with performance requirements.
- D. Panel Fasteners: Self-tapping screws and other acceptable corrosion-resistant fasteners recommended by roof panel manufacturer. Where exposed fasteners cannot be avoided, supply

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fasteners with EPDM or neoprene gaskets, with heads matching color of metal panels by means of factory-applied coating.

- E. Sealants:
 - 1. Exposed Sealant: Elastomeric; silicone, polyurethane, or silyl-terminated polyether/polyurethane.
 - 2. Concealed Sealant: Non-curing butyl sealant or tape sealant.
 - 3. Seam Sealant: Factory-applied, non-skinning, non-drying type.
- F. Steel Sheet Miscellaneous Framing Components: ASTM C645, with ASTM A653/A653M, ASTM G90 (Z180) hot-dip galvanized zinc coating.
- G. Underlayment: Self-adhering polymer modified asphalt sheet complying with ASTM D1970/D1970M, with strippable release film and top surface of woven polypropylene sheet.
 - 1. Sheet Thickness: 22 mil, 0.022 inch minimum total thickness.
 - 2. Products:
 - a. Henry Company; Blueskin RF200: www.henry.com.
 - b. Substitutions: See Section 016000 - Product Requirements.

2.8 FABRICATION

- A. General: Provide factory fabricated and finished metal panels and accessories meeting performance requirements, indicated profiles, and structural requirements.
- B. Fabricate metal panel joints configured to accept factory-applied sealant providing weathertight seal and preventing metal-to-metal contact and minimizing noise resulting from thermal movement.
- C. Form panels in continuous lengths for full length of detailed runs, except where otherwise indicated on approved shop drawings.
- D. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's written instructions, approved shop drawings, and project drawings. Form from materials matching metal panel substrate and finish.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine metal panel system substrate and supports with Installer present. Inspect for erection tolerances and other conditions that would adversely affect installation of metal panel installation.
 - 1. Inspect metal panel support substrate to determine if support components are installed as indicated on approved shop drawings. Confirm presence of acceptable supports at recommended spacing to match installation requirements of metal panels.
 - 2. Panel Support Tolerances: Confirm that panel supports are within tolerances acceptable to metal panel system manufacturer but not greater than the following
 - a. 1/4 inch (6 mm) in 20 foot (6.1 m) in any direction
 - b. 3/8 inch (9 mm) over any single roof plane.

- B. Correct out-of-tolerance work and other deficient conditions prior to proceeding with insulated metal roof panel system installation.

3.2 PREPARATION

- A. Miscellaneous Supports: Install subframing, girts, furring, and other miscellaneous panel support members according to ASTM C754 and manufacturer's written instructions.
- B. Flashings: Provide flashings as required to complete metal roof panel system. Install in accordance with Section 076200 - Sheet Metal Flashing and Trim and approved shop drawings.
- C. Broom clean wood sheathing prior to installation of roofing system.
- D. Coordinate roofing work with provisions for roof drainage, flashing, trim, penetrations, and other adjoining work to ensure that completed roof will be free of leaks.
- E. Remove protective film from surface of roof panels immediately prior to installation; strip film carefully to avoid damage to prefinished surfaces.
- F. Separate dissimilar metals by applying a bituminous coating, self-adhering rubberized asphalt sheet, or other permanent method approved by metal roof panel manufacturer.
- G. Protect surrounding areas and adjacent surfaces from damage during execution of this work.
- H. At locations where metal will be in contact with wood or other absorbent material subject to wetting, seal joints with sealing compound and apply one coat of heavy-bodied bituminous paint.

3.3 INSTALLATION

- A. Overall: Install roofing system in accordance with approved shop drawings and metal roof panel manufacturer's instructions and recommendations, as applicable to specific project conditions; securely anchor components of roofing system in place allowing for thermal and structural movement.
 - 1. Install roofing system with concealed clips and fasteners, except as otherwise recommended by manufacturer for specific circumstances.
 - 2. Minimize field cutting of panels. Where field cutting is required, use methods that will not distort panel profiles. Use of torches for field cutting is prohibited.
- B. Accessories: Install necessary components that are required for complete roofing assembly, including flashings, gutters, downspouts, trim, moldings, closure strips, preformed crickets, caps, equipment curbs, rib closures, ridge closures, and similar roof accessory items.
- C. Roof Panels: Install metal roof panels in accordance with manufacturer's installation instructions, minimizing transverse joints except at junction with penetrations.
 - 1. Provide sealant tape or other approved joint sealer at lapped panel joints.
 - 2. Install sealant or sealant tape at end laps and side joints as recommended by metal roof panel manufacturer.

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3.4 CLEANING

- A. Clean exposed sheet metal work at completion of installation. Remove grease and oil films, excess joint sealer, handling marks, and debris from installation, leaving the work clean and unmarked, free from dents, creases, waves, scratch marks, or other damage to the finish.

3.5 PROTECTION

- A. Do not permit storage of materials or roof traffic on installed roof panels. Provide temporary walkways or planks as necessary to avoid damage to completed work. Protect roofing until completion of project.
- B. Touch-up, repair, or replace damaged roof panels or accessories before Date of Substantial Completion.

END OF SECTION

SECTION 074643 - COMPOSITION SIDING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Exterior composition siding.

1.2 RELATED REQUIREMENTS

- A. Section 061000 - Rough Carpentry: Wood blocking and sheathing.
- B. Section 072500 - Weather Barriers: Water-resistive barrier.

1.3 REFERENCE STANDARDS

- A. ASTM B117 - Standard Practice for Operating Salt Spray (Fog) Apparatus; 2019.
- B. ASTM D2244 - Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates; 2023.
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.

1.4 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Submit manufacturer's data sheets on each product to be used, including:
 - 1. Manufacturer's requirements for related materials to be installed by others.
 - 2. Preparation instructions and recommendations.
 - 3. Storage and handling requirements and recommendations.
 - 4. Installation methods, including nail patterns.
- C. Samples: For each finish product specified, provide two complete sets of color samples representing manufacturer's full range of available colors and patterns, including the following:
 - 1. Siding: Two of each type; full panel width by 12 inches long.
- D. Manufacturer's qualification statement.
- E. Installer's qualification statement.
- F. Maintenance Instructions: Periodic inspection recommendations and maintenance procedures.
- G. Executed warranty.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than five years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified in this section with minimum three years of documented experience.

1.6 MOCK-UPS

- A. Construct mock-up on project site incorporating required materials and workmanship, with minimum size of 8'-8" feet long by full wall height.
- B. Mock-up may remain as part of work.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. See Section 017419 - Construction Waste Management and Disposal for packaging waste requirements.
- B. Deliver materials in manufacturer's original packaging and clearly identified.
- C. Store materials under dry and waterproof cover, well ventilated, and elevated above grade on a flat surface.
- D. Protect materials from harmful environmental elements, construction dust, and other potentially detrimental conditions.

1.8 FIELD CONDITIONS

- A. Do not install siding when air temperature or relative humidity are outside manufacturer's limits.

1.9 WARRANTY

- A. See Section 017800 - Closeout Submittals for additional warranty requirements.
- B. Manufacturer's Warranty: Provide manufacturer's standard warranty of ten years from Date of Substantial Completion.
- C. Manufacturer's warranty on siding finishes to cover staining and color fading of not more than five Hunter color-difference units when tested in accordance with ASTM D2244.
- D. Extended Correction Period: Correct defective work within 2-year period commencing on Date of Substantial Completion.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Composition Siding:
1. Basis of Design: Trex Company, Inc; Trex Transcend Cladding: www.trex.com.
 2. Substitutions: See Section 016000 - Product Requirements.

2.2 COMPOSITION SIDING

- A. Composition Siding: Coextruded boards with recycled wood and plastic core, polyethylene-based capping; stain-resistant, fade-resistant, and scratch-resistant.
1. Application: Horizontal board orientation, as indicated on drawings.
 2. Surface Texture: Embossed grain.
 3. Edge Profile: Square.
 4. Length: 20 feet, nominal.
 5. Width: 6 inches, nominal.
 6. Thickness: 1 inch, nominal.
 7. Color: As selected by Architect from manufacturers full range of available colors.
- B. Trim Boards:
1. Application: Used as soffit, trim, and fascia board.
 2. Length: 12 feet, nominal.
 3. Width: 8 inches, nominal.
 4. Thickness: 1 inch, nominal.
 5. Surface Texture: Match siding.
 6. Color: As selected by Architect from manufacturers full range.

2.3 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Comply with local building code in accordance with authorities having jurisdiction (AHJ) for wind load resistance requirements of project location.
- B. Fire Resistance:
1. Flame Spread Index (FSI): 25 or less, in accordance with ASTM E84.
 2. Smoke Developed Index (SDI): 450 or less, in accordance with ASTM E84.

2.4 ACCESSORIES

- A. Pressure-Treated Wood Blocking: See Section 061000.
- B. Fasteners, Polymer-Coated: Polymer-coated #9 composite decking screws complying with ASTM B117 for corrosion-resistance; length as required to penetrate wall sheathing at least 1/4 inch.
1. Only utilize fasteners provided by or specifically approved by siding manufacturer.

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- C. Clips and Anchors: Provide as indicated in accordance with siding manufacturer; conceal unless otherwise indicated.
- D. Flashing:
 - 1. Galvanized steel, 26 gauge, 0.0179 inch minimum base metal thickness.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine substrate, clean and repair as required to eliminate conditions that would be detrimental to proper installation.
- B. Verify that water-resistive barrier has been installed.
- C. Verify blocking strips are properly placed in accordance with orientation of siding.
- D. Inspect products prior to installation; do not install products that may have been damaged in shipment or appear to have a damaged or irregular finish.
- E. Do not begin until unacceptable conditions have been corrected.
- F. If substrate preparation is responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Protect surrounding areas and adjacent surfaces during execution of this work.
- B. Install Sheet Metal Flashing: Secure using concealed fastening method in accordance with siding manufacturer's instructions.
 - 1. Above door and window trim and casings.
 - 2. Above horizontal trim in field of siding.
 - 3. Above top of lower board for vertical installation with walls exceeding available length of boards.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
 - 1. Use trim details as indicated on drawings.
 - 2. Touch-up field cut edges before installing.
 - 3. Pre-drill screw holes if necessary to prevent breakage.
- B. Securely attach siding boards to furring, using fastener size, number, spacing, and minimum dimensions from board edges and ends in accordance with manufacturer's recommendations.
 - 1. Cut and route siding boards using carbide-tipped blades to prevent frayed edge cuts.
 - 2. Cut board ends square; 45 degree scarf-running butt joints in field of siding courses is permitted.

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3. Predrill holes located less than 1-1/2 inches from ends of boards, 1 inch from board edges, and in siding boards 3 inches wide or less.
 4. Install fasteners perpendicular to siding substrates and flush with surface of board.
- C. Horizontal Board Orientation:
1. Begin siding installation at lowest established level.
 2. Center butt joints over vertical furring, and as siding courses are added, stagger butt joints in a consistent stair-step manner.
 3. Install lengths of siding to span at least three furring members.
 4. Provide width of siding open joint at boards abutting ends in accordance with manufacturer's instructions, as spacing dimensions are temperature dependent.
 5. Provide width of open joints and locations as indicated, and in accordance with manufacturer's instructions.
- D. Allow space for thermal movement between both ends of siding boards that butt against each other and trim.
- E. Do not install siding less than 6 inches from surface of ground nor closer than 1 inch to roofs, patios, porches, and other surfaces where water may collect.
- 3.4 CLEANING
- A. Clean siding boards in accordance with manufacturer's maintenance instructions, using cleaning materials and methods acceptable to siding manufacturer.
- 3.5 PROTECTION
- A. Protect installed products until Date of Substantial Completion.
 - B. Repair damage to adjacent substrates and surfaces.
 - C. Touch-up, repair, or replace damaged products before Date of Substantial Completion.

END OF SECTION

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Non-fire-rated hollow metal doors and frames.
- B. Hollow metal frames for wood doors.
- C. Fire-rated hollow metal doors and frames.
- D. Thermally insulated hollow metal doors with frames.
- E. Hollow metal borrowed lites glazing frames.

1.2 RELATED REQUIREMENTS

- A. Section 087100 - Door Hardware.
- B. Section 088000 - Glazing: Glass for doors and borrowed lites.
- C. Section 099113 - Exterior Painting: Field painting.
- D. Section 099123 - Interior Painting: Field painting.

1.3 ABBREVIATIONS AND ACRONYMS

- A. ANSI: American National Standards Institute.
- B. ASCE: American Society of Civil Engineers.
- C. HMMA: Hollow Metal Manufacturers Association.
- D. NAAMM: National Association of Architectural Metal Manufacturers.
- E. NFPA: National Fire Protection Association.
- F. SCIF: Sensitive Compartmented Information Facility.
- G. UL: Underwriters Laboratories.

1.4 REFERENCE STANDARDS

- A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.
- B. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors; 2024.

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- C. ANSI/SDI A250.6 - Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames; 2024.
- D. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2023.
- E. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 2020.
- F. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.
- G. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Required Hardness, Solution Hardened, and Bake Hardenable; 2023, with Editorial Revision.
- H. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2023.
- I. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete; 2020.
- J. ASTM C476 - Standard Specification for Grout for Masonry; 2023.
- K. BHMA A156.115 - Hardware Preparation in Steel Doors and Frames; 2016.
- L. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.
- M. ITS (DIR) - Directory of Listed Products; Current Edition.
- N. NAAMM HMMA 805 - Recommended Selection and Usage Guide for Hollow Metal Doors and Frames; 2012.
- O. NAAMM HMMA 830 - Hardware Selection for Hollow Metal Doors and Frames; 2002.
- P. NAAMM HMMA 831 - Hardware Locations for Hollow Metal Doors and Frames; 2011.
- Q. NAAMM HMMA 840 - Guide Specifications for Receipt, Storage and Installation of Hollow Metal Doors and Frames; 2024.
- R. NAAMM HMMA 850 - Fire-Rated Hollow Metal Doors and Frames; 2014.
- S. NAAMM HMMA 860 - Guide Specifications for Hollow Metal Doors and Frames; 2018.
- T. NAAMM HMMA 861 - Guide Specifications for Commercial Hollow Metal Doors and Frames; 2014.
- U. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2025.
- V. NFPA 105 - Standard for Smoke Door Assemblies and Other Opening Protectives; 2025.
- W. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; 2022.
- X. SDI 117 - Manufacturing Tolerances for Standard Steel Doors and Frames; 2023.

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- Y. UL (DIR) - Online Certifications Directory; Current Edition.
- Z. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies; Current Edition, Including All Revisions.
- AA. UL 1784 - Standard for Air Leakage Tests of Door Assemblies; Current Edition, Including All Revisions.

1.5 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes.
- C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and any indicated finish requirements.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.7 DELIVERY, STORAGE, AND HANDLING

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

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Hollow Metal Doors and Frames:
 - 1. Ceco Door, an Assa Abloy Group company: www.assaabloydss.com.
 - 2. Curries, an Assa Abloy Group company: www.assaabloydss.com.
 - 3. Republic Doors, an Allegion brand: www.republicdoor.com.
 - 4. Steelcraft, an Allegion brand: www.allegion.com.
 - 5. Substitutions: See Section 016000 - Product Requirements.

2.2 PERFORMANCE REQUIREMENTS

- A. Requirements for Hollow Metal Doors and Frames:

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

- B. Hollow Metal Panels: Same construction, performance, and finish as doors.
- C. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.3 HOLLOW METAL DOORS

- A. Door Finish: Factory primed and field finished.
- B. Exterior Doors: Thermally insulated.
1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
 - a. Level 1 - Standard-duty.
 - b. Physical Performance Level C, 250,000 cycles; in accordance with ANSI/SDI A250.4.
 - c. Model 1 - Full Flush.
 - d. Door Face Metal Thickness: 20 gauge, 0.032 inch, minimum.
 2. Based on NAAMM HMMA Custom Guidelines:
 - a. Comply with guidelines of NAAMM HMMA 860 for Hollow Metal Doors and Frames.
 - b. Performance Level 3 - Heavy Duty, in accordance with NAAMM HMMA 805.
 - c. Physical Performance Level A, 1,000,000 cycles; in accordance with ANSI/SDI A250.4.
 - d. Door Face Metal Thickness: 14 gauge, 0.067 inch, minimum.
 - e. Zinc Coating: G90/Z275 galvanized coating; ASTM A653/A653M.

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3. Door Core Material: Manufacturers standard core material/construction and in compliance with requirements.
4. Door Thickness: 1-3/4 inches, nominal.
5. Weatherstripping: Refer to Section 087100.

C. Interior Doors, Non-Fire-Rated:

1. Based on NAAMM HMMA Custom Guidelines:
 - a. Comply with guidelines of NAAMM HMMA 860 for Hollow Metal Doors and Frames.
 - b. Performance Level 3 - Heavy Duty, in accordance with NAAMM HMMA 805.
 - c. Physical Performance Level A, 1,000,000 cycles; in accordance with ANSI/SDI A250.4.
 - d. Door Face Metal Thickness: 14 gauge, 0.067 inch, minimum.
 - e. Zinc Coating: G90/Z275 galvanized coating; ASTM A653/A653M.
2. Door Thickness: 1-3/4 inches, nominal.

D. Fire-Rated Doors:

1. Based on NAAMM HMMA Custom Guidelines: Comply with NAAMM HMMA 850 requirements for fire-rated doors.
 - a. Comply with guidelines of NAAMM HMMA 860 for Hollow Metal Doors and Frames.
 - b. Performance Level 3 - Heavy Duty, in accordance with NAAMM HMMA 805.
 - c. Physical Performance Level A, 1,000,000 cycles; in accordance with ANSI/SDI A250.4.
 - d. Door Face Metal Thickness: 14 gauge, 0.067 inch, minimum.
 - e. Zinc Coating: G90/Z275 galvanized coating; ASTM A653/A653M.
2. Fire Rating: As indicated on Door Schedule, tested in accordance with UL 10C and NFPA 252 ("positive pressure fire tests").
3. Provide units listed and labeled by UL (DIR) or ITS (DIR).
 - a. Attach fire rating label to each fire rated unit.
4. Smoke and Draft Control Doors: Self-closing or automatic closing doors in accordance with NFPA 80 and NFPA 105, with fire-resistance-rated wall construction rated the same or greater than the fire-rated doors, and the following;
 - a. Maximum Air Leakage: 3.0 cfm/sq ft of door opening at 0.10 inch w.g. pressure, when tested in accordance with UL 1784 at both ambient and elevated temperatures.
 - b. Gasketing: Provide gasketing or edge sealing as necessary to achieve leakage limit.
 - c. Label: Include the "S" label on fire-rating label of door.
5. Door Core Material: Manufacturers standard core material/construction in compliance with requirements.
6. Door Thickness: 1-3/4 inches, nominal.

2.4 HOLLOW METAL FRAMES

- A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.

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- B. Frame Finish: Factory primed and field finished.
- C. Exterior Door Frames: Full profile/continuously welded type.
 - 1. Galvanizing: Components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A653/A653M, with A40/ZF120 coating.
 - 2. Frame Metal Thickness: 12 gauge, 0.093 inch, minimum.
 - 3. Weatherstripping: Separate, see Section 087100.
- D. Interior Door Frames, Non-Fire Rated: Full profile/continuously welded type.
 - 1. Terminated Stops: Provide at interior doors; closed end stop terminated 6 inch, maximum, above floor at 90 degree angle.
 - 2. Frame Metal Thickness: 12 gauge, 0.093 inch, minimum.
- E. Door Frames, Fire-Rated: Full profile/continuously welded type.
 - 1. Fire Rating: Same as door, labeled.
 - 2. Terminated Stops: Provide at interior doors; closed end stop terminated 6 inch, maximum, above floor at 90 degree angle.
 - 3. Frame Metal Thickness: 12 gauge, 0.093 inch, minimum.
- F. Frames for Wood Doors: Comply with frame requirements in accordance with corresponding door.
- G. Mullions for Pairs of Doors: Removable type, with profile similar to jambs.
- H. Borrowed Lites Glazing Frames: Construction and face dimensions to match door frames, and as indicated on drawings.
- I. Transom Bars: Fixed, of profile same as jamb and head.
- J. Provide mortar guard boxes for hardware cut-outs in frames to be installed in masonry or to be grouted.
- K. Frames in Masonry Walls: Size to suit masonry coursing with head member 4 inches high to fill opening without cutting masonry units.
- L. Frames Wider than 48 inches: Reinforce with steel channel fitted tightly into frame head, flush with top.

2.5 FINISHES

- A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.
- B. Bituminous Coating: Cold-applied asphalt mastic, compounded for 15 mil, 0.015 inch dry film thickness (DFT) per coat; provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.
 - 1. Fire-Rated Frames: Comply with fire rating requirements indicated.

2.6 ACCESSORIES

- A. Louvers: Roll formed steel with overlapping frame; finish same as door components ; factory-installed.
 - 1. In Fire-Rated Doors: UL (DIR) or ITS (DIR) listed fusible link louver, same rating as door.
 - 2. Style: Standard straight slat blade.
 - 3. Fasteners: Concealed fasteners.
- B. Door Window Frames: Door window frames with glazing securely fastened within door opening.
 - 1. Size: As indicated on drawings.
 - 2. Frame Material: 18 gauge, 0.0478 inch, galvanized steel.
 - 3. Metal Finish: Gray polyester powder coating.
 - 4. Glazing: 1/4 inch thick, tempered glass, in compliance with requirements of authorities having jurisdiction.
- C. Glazing: As specified in Section 088000, factory installed.
- D. Astragals for Double Doors: Specified in Section 087100.
- E. Mechanical Fasteners for Concealed Metal-to-Metal Connections: Self-drilling, self-tapping, steel with electroplated zinc finish.
- F. Grout for Frames: Mortar grout complying with ASTM C476 with maximum slump of 4 inches as measured in accordance with ASTM C143/C143M for hand troweling in place; plaster grout and thinner pumpable grout are prohibited.
- G. Silencers: Resilient rubber, fitted into drilled hole; provide three on strike side of single door, three on center mullion of pairs, and two on head of pairs without center mullions.
- H. Temporary Frame Spreaders: Provide for factory- or shop-assembled frames.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Verify that finished walls are in plane to ensure proper door alignment.

3.2 PREPARATION

- A. Coat inside of frames to be installed in masonry or to be grouted, with bituminous coating, prior to installation.

3.3 INSTALLATION

- A. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.
- B. Install fire rated units in accordance with NFPA 80.
- C. Coordinate frame anchor placement with wall construction.
- D. Grout frames in masonry construction, using hand trowel methods; brace frames so that pressure of grout before setting will not deform frames.
- E. Install door hardware as specified in Section 087100.
 - 1. Comply with recommended practice for hardware placement of doors and frames in accordance with ANSI/SDI A250.6 or NAAMM HMMA 861.
- F. Comply with glazing installation requirements of Section 088000.
- G. Coordinate installation of electrical connections to electrical hardware items.
- H. Touch up damaged factory finishes.

3.4 TOLERANCES

- A. Clearances Between Door and Frame: Comply with related requirements of specified frame standards or custom guidelines indicated in accordance with SDI 117 or NAAMM HMMA 861.
- B. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.

3.5 ADJUSTING

- A. Adjust for smooth and balanced door movement.

END OF SECTION

SECTION 107500 - FLAGPOLES

PART 1 GENERAL

1.1 SECTION INCLUDES

1.2 RELATED REQUIREMENTS

- A. Section 033000 - Cast-in-Place Concrete: Concrete base and foundation construction.

1.3 REFERENCE STANDARDS

- A. AASHTO M 36 - Standard Specification for Corrugated Steel Pipe, Metallic-Coated, for Sewers and Drains; 2016 (Reapproved 2020).
- B. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.
- C. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.
- D. NAAMM FP 1001 - Guide Specifications for Design Loads of Metal Flagpoles; 2007.

1.4 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on pole, accessories, and configurations.
- C. Shop Drawings: Indicate detailed dimensions, base details, anchor requirements, and imposed loads.
 - 1. Design Data: Submit detailed design calculations showing compliance with specified design criteria and material evaluations performed in accordance with specified design standard, signed and sealed by Design Engineer.
- D. Designer's Qualification Statement.

1.5 QUALITY ASSURANCE

- A. Designer Qualifications: Design flagpole foundation under direct supervision of a Professional Structural Engineer experienced in design of this Work and licensed the State in which the Project is located.
- B. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Protect flagpole and accessories from damage or moisture.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Flagpoles:
 - 1. Concord American Flagpole; Internal - Titan: www.concordamericanflagpole.com/#sle.
 - 2. Morgan-Francis Flagpoles & Accessories: www.morgan-francis.com/#sle.
 - 3. Pole-Tech Co, Inc: www.poletech.com/#sle.
 - 4. Substitutions: See Section 016000 - Product Requirements.

2.2 FLAGPOLES

- A. Flagpoles: Designed in accordance with NAAMM FP 1001
 - 1. Material: Aluminum.
 - 2. Design: Cone tapered.
 - 3. Mounting: Ground mounted type.
 - 4. Outside Butt Diameter: 8 inches.
 - 5. Outside Tip Diameter: 4 inches.
 - 6. Nominal Wall Thickness: 0.188 inches.
 - 7. Nominal Height: 35 ft; measured from nominal ground elevation.
 - 8. Halyard: Internal type, manual winch operation.
- B. Performance Requirements:
 - 1. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design flagpole assemblies.
 - 2. Wind Pressure Loading on Flagpole with Flag: Resistant without permanent deformation to 110 miles/hr ultimate wind speed, in accordance with NAAMM FP 1001.

2.3 POLE MATERIALS

- A. Aluminum: ASTM B221 ASTM B221M , 6063 alloy , T6 temper.

2.4 ACCESSORIES

- A. Lighting Unit: Aluminum; consisting of LED lights arranged in circular unit around flagpole.
 - 1. Mounting Height: 14.5 ft.
 - 2. Aluminum Finish: Powder coated.
 - 3. Light Color Temperature: 3000K.
 - 4. Products:
 - a. Concord American Flagpole; PoleLED Basic:
www.concordamericanflagpole.com/#sle.

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b. Acceptable equivalent.

- B. Finial Ball: Aluminum, 6 inch diameter.
- C. Truck Assembly: Cast aluminum; revolving, stainless steel ball bearings, non-fouling.
- D. Halyard: stainless steel aircraft cable.

2.5 MOUNTING COMPONENTS

- A. Foundation Tube Sleeve: AASHTO M 36, corrugated 16 gauge, 0.0598 inch steel, galvanized.
- B. Lightning Ground Rod: 18 inch long copper rod, 3/4 inch diameter.

2.6 FINISHING

- A. Metal Surfaces in Contact With Concrete: Asphaltic paint.
- B. Clear Anodic Finish: AAMA 611.
- C. Finial: Gold anodized finish.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that concrete foundation is ready to receive work and dimensions are as indicated on shop drawings.
- B. Verify that electric power is available and of the correct characteristics.

3.2 INSTALLATION

- A. Install flagpole , base assembly, and fittings in accordance with manufacturer's instructions.
- B. Electrically ground flagpole installation.

3.3 ADJUSTING

- A. Adjust operating devices so that halyard and flag function smoothly.

END OF SECTION

SECTION 116833 - ATHLETIC FIELD EQUIPMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Football field equipment.
- B. Baseball field equipment.
- C. Outdoor batting cage.
- D. Permanent backstop netting system.
- E. Soccer field equipment.

1.2 RELATED REQUIREMENTS

- A. Section 033000 - Cast-in-Place Concrete: Footings for field equipment.

1.3 ABBREVIATIONS

- A. NCAA - National Collegiate Athletic Association; www.ncaa.org.

1.4 REFERENCE STANDARDS

- A. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.
- B. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2023.
- C. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.
- D. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.

1.5 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide athletic field equipment manufacturer's product data indicating materials of construction, compliance with specified standards, installation procedures, and necessary safety limitations.

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- C. Shop Drawings: Submit detailed scale drawings showing athletic field equipment and perimeter layout.
 - 1. Indicate locations and dimensions of footings and anchorage points.
 - 2. Identify mounting elevations in relation to fixed survey point on site, and subgrade elevation.
 - 3. Design Data: Submit detailed design calculations showing compliance with specified design criteria and material evaluations performed in accordance with specified design standard, signed and sealed by Design Engineer.
- D. Maintenance Data: Submit manufacturer's recommended maintenance instructions and list of replaceable parts for each athletic field equipment item, along with supplier's address and phone number.
- E. Executed Warranty.

1.6 QUALITY ASSURANCE

- A. Design Engineer Qualifications: Provide design by or under direct supervision of Professional Engineer experienced in the work of this section and licensed in the State in which the Project is located.
- B. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of experience.
- C. Installer Qualifications:
 - 1. General: Company specializing in performing work of the type specified and with at least three years of documented experience.
 - 2. GP830COLGH Gooseneck Hydraulically Hinged College Ground Sleeve Football Goal Posts Installer should have a minimum of five (5) football goal post installations or similar experience in the previous three (3) years.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, handle, and store equipment on project site in accordance with manufacturer's recommendations.
- B. Store materials in a dry, covered area, and elevated above grade.

PART 2 PRODUCTS

2.1 ATHLETIC FIELD EQUIPMENT - GENERAL

- A. Collegiate Sports: Provide equipment that complies with NCAA requirements.
- B. Mount supporting posts in concrete footings, unless otherwise indicated, refer to Section 033000 for additional concrete footing installation requirements.
 - 1. Provide supports as required to mount equipment at proper height above finished grade.

2.2 FOOTBALL FIELD EQUIPMENT

- A. Manufacturers:
 - 1. Basis of Design Manufacturers:
 - a. Manufacturers and product selections named are provided to establish the minimum standard.
 - b. Sportsfield Specialties, Inc.
P.O. Box 231
4115 State Highway 10
Delhi, NY 13753
Phone: 888-975-3343
www.sportsfieldspecialties.com
 - 2. Substitutions: See Section 016000 - Product Requirements.
- B. GP830COLGH Gooseneck Hydraulically Hinged College Ground Sleeve Football Goal Posts and Accessories.
- C. Components:
 - 1. Two Piece Hydraulically Hinged Gooseneck Support Consisting of the Following Components:
 - a. Upper and Lower Gooseneck Fabricated of 6" Schedule 40 Aluminum Pipe (6.625" O.D.) with the Upper Gooseneck Rolled to a 3' Radius and 8' Offset
 - b. 3/4" Aluminum Mounting Plates with 3/4" Aluminum Gussets
 - c. 3/4" A572 Steel Hinge Plates with a Black Powder Coated Finish
 - d. 1/2" Dia. Grade 8 Zinc Yellow-Chromate Plated Steel Pivot Pin
 - e. Hydraulic Cylinder, 2.50" Bore x 1.25" Rod, 12" Stroke, 3000 PSI
 - f. 1/2" Dia. x 3.50" Long 17-4 Stainless Steel Locking Pull Pin, Includes Padlock
 - 2. Removable Hydraulic Compartment: Fabricated of 0.125" Aluminum Sheet with Removable 0.125" Aluminum Cover with Handle. Consists of the Following Components:
 - a. 4.25 Cup Capacity Hydraulic Fluid Tank Fabricated of 0.125" Aluminum Sheet with Plastic Vented Cap
 - b. 0.097 in³, 4000 PSI Hydraulic Gear Pump for Raising Goal
 - c. 3-Way Directional Control Valve with Adjustable Relief Valve for Lowering Goal, 3000 PSI Max
 - d. Adjustable Flow Control Valve, 5000 PSI Max
 - e. 3/8" I.D. Hydraulic Hose with Quick Disconnect Coupling, 4000 PSI Max
 - f. Assorted Steel and Stainless Steel Fittings, Couplers, and Mounting Hardware
 - g. 4.00 Cups of AW-46 Hydraulic Fluid
 - 3. Crossbar: Fabricated of 6" Schedule 40 Aluminum Pipe (6.625" O.D.)
 - a. Length: 18'-6" – College
 - b. Includes Patented AdjustRight® feature allowing for easy installation through the adjustment of an internal locking rotating sleeve at both the gooseneck/crossbar and upright/crossbar connections. This adjustment can easily be repeated throughout the life of the football goal post ensuring proper alignment of all components for years of competition and all with the added

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benefit of no exposed hardware on the face of the goal. Thermal arc sprayed internal textured mating surfaces and anti-vibration enhancements such as serrated washers and nyloc coated bolt ends ensure the AdjustRight® Football Goal Posts remain in position.

4. Uprights: Fabricated of Extruded 6061-T6 Aluminum Tube (4" O.D.) with Rigid Wire Loop Welded to Upper End.
 - a. Length: 30'
5. Powder Coated Finish
 - a. Color: Yellow.
6. Installation Package Consisting of the Following Components:
 - a. Ground Sleeve: Fabricated of 8" Schedule 40 Steel Pipe (8" I.D.), 60"L
 - b. Optional Access Frame Kit: 1/8" (0.125") Aluminum Construction with 1" PVC Drain Stub, Includes Two (2) Half Moon Filler Plugs, Optional Full Size Filler Plug and SG2S® Patented Soccer Goal Rear Bottom Ground Bar Retractable Safety Clamp System Available, Use GFAFIT for Synthetic Turf Installation Applications.
7. Included Accessories:
 - a. Directional Wind Flags.
 - b. Touch-up Paint.
 - c. Model Specific Hardware Kit and Installation Instructions.
8. Provide delegated design of concrete footing required to support goal posts.

2.3 BASEBALL FIELD EQUIPMENT

A. Softball Pitching Mound Forming System

1. Basis of Design Manufacturers:
 - a. Manufacturers and product selections named are provided to establish the minimum standard.
 - b. Sportsfield Specialties, Inc.
P.O. Box 231
4115 State Highway 10
Delhi, NY 13753
Phone: 888-975-3343
www.sportsfieldspecialties.com
2. Basis of Design: PMFSS - Softball Pitching Mound Forming System
3. Components:
 - a. Welded Construction, Fabricated of 1/8" Aluminum Sheet Structure
 - b. Two (2) Piece Welded Form Sections with Bolted Connections
 - c. Notched Cutouts for Rebar Bracing and Stake Holes for Rebar Anchoring (Rebar by Others)
 - d. 8' Radius Per Specifications, Rules and Requirements
 - e. Rear Form Section Includes Two (2) 1/2" Sch. 40 Aluminum Drainage Pipes and Removable Pitching Rubber Tray with Four (4) 3/4" Aluminum Round Stock Threaded Studs with 3/8" Stainless Steel Bolts for Pitching Rubber Height Adjustment
 - f. Includes Replaceable SHBBPB Schutt® Four-Sided Professional Pitching Rubber
 - g. Includes Synthetic Infill Turf Attachment Ledges

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- h. Includes Factory Pre-Installed 2" x 4" Synthetic Wood Nailer Boards Around the Outside Perimeter of the Form Sections for Synthetic Turf Attachment Purposes
 - i. Includes 1/4" Roll Out Rubber Underlayment for High Traffic Areas
 - j. Synthetic Turf Replacement Size is 48"W x 121"L
- B. Single Bullpen Pitching Mound Forming System
 - 1. Basis of Design Manufacturers:
 - a. Manufacturers and product selections named are provided to establish the minimum standard.
 - b. Sportsfield Specialties, Inc.
P.O. Box 231
4115 State Highway 10
Delhi, NY 13753
Phone: 888-975-3343
www.sportsfieldspecialties.com
 - 2. Basis of Design: PMFSBPS - Single Bullpen Pitching Mound Forming System
 - 3. Components:
 - a. Welded Construction, Fabricated of 1/8" Aluminum Sheet Structure.
 - b. Knock Out Perforations for Concrete Flow in Multi-Mound Systems.
 - c. Center Section Height of 10" Above Finish Grade and Sloped 1" Vertical Per 1' Horizontal Per Specifications, Rules and Requirements.
 - d. Three (3) Piece Welded Form Sections with Bolted Connections.
 - e. Notched Cutouts for Rebar Bracing and Stake Holes for Rebar Anchoring (Rebar by Others).
 - f. Center Section Includes Two (2) 1/2" Sch. 40 Aluminum Drainage Pipes and Removable Pitching Rubber Tray with Four (4) 3/4" Aluminum Round Stock Threaded Studs with 3/8" Stainless Steel Bolts for Pitching Rubber Height Adjustment.
 - g. Includes Replaceable SHBBPB Schutt® Four-Sided Professional Pitching Rubber.
 - h. Includes Synthetic Infill Turf Attachment Ledge.
 - i. Includes 1/4" Roll Out Rubber Underlayment for High Traffic Areas.
 - j. Synthetic Turf Replacement Center Section Size is 58"W x 152"L.
- C. Ball Field Bases: Anchored bases for softball field, Pro-Style Base Set, Item No. 301-905-215 by Beacon Athletics or acceptable equivalent.
 - 1. Size: 15 inch by 15 inch and 3 inch thick.
 - 2. Base Support Plate: Rust resistant, steel anchor system and stanchion pan.
 - 3. Base: Tough pebble embossed, UV resistant rubber top that prevents spikes from slipping or puncturing base surface, heavy duty polyurethane foam pad interior, with reinforced non-collapsing side walls.
- D. Home Plate: Bulldog Double-Sided Home Plate, Item No. 301-210-300 by Beacon Athletics or acceptable equivalent. Three inch solid rubber, colored white, with 3/4 inch wide beveled black perimeter, including hardware for base assembly, anchor, and base plug; 17 inch wide across front, 8-1/2 inch long on each side, and two 12 inch long edges on rear at 45 degree angle to sides creating point at back.
- E. Foul Ball Poles

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1. Basis of Design Manufacturers:
 - a. Manufacturers and product selections named are provided to establish the minimum standard.
 - b. Sportsfield Specialties, Inc.
P.O. Box 231
4115 State Highway 10
Delhi, NY 13753
Phone: 888-975-3343
www.sportsfieldspecialties.com
2. Basis of Design: FPW415 - 15' Foul Pole with Wing and Ground Sleeve
3. Components:
 - a. Foul Pole Upright:
 - 1) 4" Aluminum Tube (4" O.D. X 1/8" wall).
 - 2) 15' Height above finished grade.
 - 3) Powder coat finish.
 - a) Color: Yellow.
 - b. Foul Pole Wing:
 - 1) Stamped 1/8" aluminum sheet with double reinforced bends welded at corners.
 - 2) 1 1/2" square open mesh.
 - 3) 18" Wide X 7' Long.
 - a) Top of upright pole to 8' above finished grade.
 - c. Ground Sleeve:
 - 1) 2'-6" Depth.
 - 2) Aluminum construction.
 - 3) Alignment bolt.
 - 4) Welded leveling plate.
 - d. Stainless steel assembly hardware.
4. Provide delegated design of concrete footing required to support foul ball poles.

2.4 ACCESS FRAME KIT FOR SYNTHETIC INFILL TURF

- A. Basis of Design: GPAFIT Access Frame Kit for Synthetic Infill Turf :
 1. Manufacturers and product selections named are provided to establish the minimum standard.
 2. Sportsfield Specialties, Inc.
P.O. Box 231
4115 State Highway 10
Delhi, NY 13753
Phone: 888-975-3343
www.sportsfieldspecialties.com
- B. Components:
 1. GPAFIT Access Frame Kit for Synthetic Infill Turf
 - a. Dimensions: 22-5/16" Square x 9-5/8"H

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- b. Box: 1/8" (0.125") Aluminum Construction, Riveted Frame with Open Bottom Having the Following Attributes:
 - 1) 1/8" (0.125") Aluminum Cover Support Ledge
 - 2) Integrated Synthetic Infill Turf Attachment Ledge
 - 3) Infill Retainer System with 1-1/4" (1.25") Flexible Gasket Seals Specifically Designed for Synthetic Infill Turf Applications
 - 4) 1" PVC Drain Stub for Positive Drainage Connection
 - 5) Leveling Bolts
- c. Two Half Cover Plugs: 1/8" (0.125") Aluminum Construction with the Following Attributes:
 - 1) Infill Retainer System with 1-1/4" (1.25") Flexible Gasket Seals Specifically Designed for Synthetic Infill Turf Applications
 - 2) Factory Provided 3/8" Diameter Perforated Drain Holes
 - 3) Fits up to 8" O.D. Post
 - 4) Designed to Allow Synthetic Turf Material to be Adhered Directly to the Aluminum Surface with Appropriate Adhesive and/or Mechanical Fasteners as Determined by Others
- d. Model Specific Hardware Kit and Install Instructions.
- e. GPAFITC Full Cover Plug: 1/8" (0.125") Aluminum Construction with the Following Attributes:
 - 1) Infill Retainer System with 1-1/4" (1.25") Flexible Gasket Seals Specifically Designed for Synthetic Infill Turf Applications
 - 2) Factory Provided 3/8" Diameter Perforated Drain Holes.

2.5 OUTDOOR BATTING CAGE

- A. Basis of Design Manufacturers:
 - 1. Manufacturers and product selections named are provided to establish the minimum standard.
 - 2. Beacon Athletics (Attn: Bidding Dept - National Sales)
901 Deming Way, Suite 101
Madison, WI 53717
Phone: 800-747-5985
Email: bids@beaconathletic.com
Website: www.beaconathletic.com
 - 3. Substitutions: See Section 016000 - Product Requirements.
- B. Outdoor Baseball Cage: Basis of Design: Beacon Athletics TUFFframe PRO STANDARD 55' Single Batting Cage (TFP55-1STD)
 - 1. Model: TFP55-1STD
 - 2. Item No.: 105-100-780
 - 3. Size of Cage: 55 feet long by 14 feet wide by 14 feet high.
- C. Design Criteria
 - 1. Support Poles: Six heavy duty 6 inch schedule 40 steel poles.
 - a. Color: Black.

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2. Netting: UV-treated No.36 knotted nylon cage net with sewn reinforcement and end panel over-flap entrance.
 - a. Color: Black.
3. Provide hardware and accessories as required for complete assembly.

2.6 PERMANENT BACKSTOP NETTING SYSTEM

- A. Basis of Design Manufacturers:
 1. Manufacturers and product selections named are provided to establish the minimum standard.
 2. Beacon Athletics (Attn: Bidding Dept - National Sales)
901 Deming Way, Suite 101
Madison, WI 53717
Phone: 800-747-5985
Email: bids@beaconathletic.com
Website: www.beaconathletic.com
- B. Backstop Netting System Equipment: Basis of Design: Beacon Athletics In-Line Lift & Tension Backstop Netting System Model No. BSP-L:
 1. Description and Size:
 - a. Backstop Netting Layout 45' X 20' X 45'
 - b. Overall System Height 25' above field height.
 - c. Each netting system to be raised, lowered, and tensioned by means of lifting halyards at each pole of the netting run.
 2. Poles: Round steel sections ASTM A500/A500M B or C with welded cap plate, straight poles, direct embedment into foundation, black painted finish, provide vertical cable attached to poles where netting has vertical edge or vertical seam, all connection points for netting system to be welded on the poles prior to painting.
 3. Netting: Netting shall be a minimum UV-treated No. 36 twisted knotted nylon cage net with sewn reinforcement with 340 lb. break strength.
 - a. Color: Black
 4. Hardware: All attachment hardware to be hot dipped galvanized, stainless steel or painted to minimize rust.
 5. Sealed and signed engineering analysis by a Professional Engineer licensed in New York State shall be provided by the netting system manufacturer.
- C. Backstop Wall System: Basis of Design: Beacon Modular Backstop Wall Model No. MW-3 - Model No. 145-100-510:
 1. Quantity and configuration as required by net system layout, net system pole spans and project specific requirements.
 2. 2 7/8" O.D. schedule 40 A53 galvanized steel fence posts.
 3. Powder coated mounting brackets for direct connection to backstop support poles.
 4. 18 oz. UV treated vinyl spectator side banners.
 5. Integrated attachments for backstop system support cables.
 6. Include all required mounting hardware.
 7. 2" X 12" No. 2 prime or better ground contact pressure treated lumber planks.

2.7 SOCCER FIELD EQUIPMENT

- A. Basis of Design Manufacturers:
1. Manufacturers and product selections named are provided to establish the minimum standard.
 2. Sportsfield Specialties, Inc.
P.O. Box 231
4115 State Highway 10
Delhi, NY 13753
Phone: 888-975-3343
www.sportsfieldspecialties.com
- B. Basis of Design: SG824R 8' X 24' Regulation Size Round Faced Soccer Goal and Accessories
- C. Components:
1. Top Crossbar Fabricated of 6061-T6 Extruded Aluminum Tube Having the Following Attributes:
 - a. Length: 24' - Regulation Size.
 - b. 4.375" Square x 4.688" Round Faced Crossbar, 3/16" (.1875") Wall Thickness.
 - c. Powder Coated White Finish with Enhanced Resistance to UV and Fade.
 - d. 3/16" (0.1875") Thick Formed Aluminum Channel Crossbar Attachment Brackets with Welded Tap Blocks, Mill Finish.
 2. One Piece End Frame Construction Fabricated of 6061-T6 Extruded Aluminum Tube Having the Following Attributes:
 - a. 4.375" Square x 4.688" Round Faced Corner Post, 8'H, 3/16" (.1875") Wall Thickness.
 - b. Rolled Side Frame, 2" x 3" x 0.125" Thick Wall, TIG Welded to Corner Upright Posts.
 - c. Radius Backside Corners.
 - d. Powder Coated White Finish with Enhanced Resistance to UV and Fade.
 3. Rear Bottom Ground Bar Fabricated of 6061-T6 Extruded Aluminum Tube Having the Following Attributes:
 - a. 2" x 2" x 0.25" Thick Wall with Welded ½" Aluminum End Plates.
 - b. Powder Coated White Finish with Enhanced Resistance to UV and Fade.
 4. Included Accessories:
 - a. Welded Aluminum Net Clips with Lifetime Guarantee.
 - b. 5mm Braided, Knotless White High Tenacity Polypropylene Soccer Net with Rope Bound Perimeter and 4" Square Mesh – 8.2'H x 24.4'L x 4.3'B x 8.6'D.
 - c. Model Specific Hardware Kit and Installation Instructions.
 - d. Ground Stake Storage Compartments.
 - e. All SG824R 8' x 24' Regulation Size Round Faced Soccer Goals Meet and Exceed Current ASTM F2950-14 Standard Safety and Performance Specification for Soccer Goals and F1938-98 Standard Guide for Safer Use of Movable Soccer Goals.
 - f. Five (5) Year Limited Manufacturer's Product Warranty.
 - g. SGMobile SGMKR Internal Soccer Goal Portable

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- 1) Welded 13 Gauge Stainless Steel Frame.
- 2) Ultra High Molecular Weight Polyethylene (UHMWPE) Plastic Wheel.
- 3) Stainless Steel Hardware.
- 4) Roll Formed Stainless Steel Rod with Stainless Steel Spring and Cushioned Rubber Handle.

2.8 TEAM BENCHES

A. Basis of Design Manufacturers:

1. Manufacturers and product selections named are provided to establish the minimum standard.
2. Sportsfield Specialties, Inc.
P.O. Box 231
4115 State Highway 10
Delhi, NY 13753
Phone: 888-975-3343
www.sportsfieldspecialties.com

B. Basis of Design: Model ATBBRPT Portable Aluminum Team Bench with Back Rest

C. Components:

1. Portable Aluminum Team Bench with Back Rest:
 - a. Length: 15'
 - b. Fully Welded Frame Fabricated with 2" x 2" x 1/8" (0.125") Square Aluminum Tubing
 - 1) Durable Powder Coated Finish
 - 2) Weather Resistant and Unsusceptible to Rust
 - 3) Color: Selected by Architect from manufacturer's standard colors.
2. 8" and 10" Textured Aluminum Extrusion Seat and Backrest Planking Material
3. Durable Powder Coated Finish
4. Weather Resistant and Unsusceptible to Rust
5. Choose From Various Standard Color Options
6. 100% Preassembled; On-Site Assembly NOT Required
7. 5-Year Manufacturer's Limited Product Warranty

2.9 SCORER'S TABLE

A. Basis of Design Manufacturers:

1. Manufacturers and product selections named are provided to establish the minimum standard.
2. Sportsfield Specialties, Inc.
P.O. Box 231
4115 State Highway 10
Delhi, NY 13753
Phone: 888-975-3343
www.sportsfieldspecialties.com

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- B. Basis of Design: Model ST58 Scorer's Table 5'W X 8'L
- C. Components:
 - 1. ST58 Scorer's Table 5'W x 8'L:
 - a. Overall Dimensions: 5'-11 7/8"W x 10'L x 9'-4 15/16"H
 - b. Fully Welded Aluminum Frame Fabricated of:
 - 1) 2" Square x 1/8" (0.125") Wall Aluminum Tube
 - 2) 2" Square x 0.090" Wall Aluminum Tube
 - 3) 1-1/2" Square x 0.140" Wall Aluminum Tube
 - 4) 1-1/2" Square x 0.090" Wall Aluminum Tube
 - 5) 3" x 2" x 1/8" (0.125") Wall Aluminum Rectangular Tube
 - c. Bench Fabricated of 10"W Aluminum Extrusion Seat and 8"W Aluminum Extrusion Backrest, 6'-7"L
 - d. Countertop Fabricated of 1/8" (0.125") Formed Aluminum Sheet, Fully Welded Construction
 - e. Slip-Resistant Entry/Exit Step with Chrome Plated Steel Grab Handle (Both Sides)
 - f. Powder Coated Finish: Color as selected by Architect from manufacturer's range.
 - g. Flooring Fabricated of 3/4" (0.75") Thick Exterior Grade Pressure Treated Plywood Factory Covered with Gray Synthetic Outdoor Carpet
 - h. 29 Gauge Corrugated Metal Roofing Over Welded Aluminum Frame Roof Structure, Various Standard Colors Available
 - i. BaseZone® Protective Padding:
 - 1) 18 oz. UV Resistant Outdoor Vinyl, Various Standard Colors Available
 - 2) 3" Thick 1580 Polyurethane Foam
 - 3) Advantech® Composite Sheathing Backer Painted on All Sides
 - 4) Spans Front Face, Front Corners, and Sides
 - 5) Custom Digitally Printed Lettering

2.10 BLEACHERS

- A. Basis of Design: Model BP-0415C 4 Row Preferred Series Bleacher, 15-foot length as by Belson Outdoors, LLC, Naperville, IL, 630-897-8489.
- B. Manufacturer Qualifications:
 - 1. Manufacturer has a minimum of ten years experience in the design and manufacture of bleachers. Welders must conform to AWS Standards.
- C. Applicable Codes:
 - 1. IBC 2012/2015 Edition / ICC 300 2012, excluding handicapped requirements.
- D. Design Loads:
 - 1. Live Loads:
 - a. Uniform loading - Structure = 100 psf
 - b. Uniform loading - Seat and foot plank = 120 psf
 - 2. Sway Loads:
 - a. Perpendicular to seats = 10 plf
 - b. Parallel to seats = 24 plf

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3. Guardrail Loads:
 - a. Uniform vertical load = 100 plf
 - b. Uniform horizontal load = 50 plf
 - c. Concentrated horizontal load = 200 pounds
 4. Wind Loads:
 - a. Basic design wind speed = 115 mph (exposure "B")
- E. Framework:
1. Prefabricated aluminum angle spaced at 6'-0" intervals joints by means of aluminum cross bracing.
 2. Structural fabrication with aluminum alloy 6061-T6 mill finish. Each frame shall be unit-welded, using metal inert gas method, under guidelines by the American Welding Society. After fabrication all steel is hot dipped galvanized to ASTM A123/A123M specifications. All crossbracing and horizontal bracing shall be aluminum alloy 6061-T6 mill finish.
- F. Shop Connections:
1. Welded to meet AWS standards and local code requirements.
- G. Rise and Depth Dimensions:
1. 6" Vertical rise and 24" tread depth, seat height is 17" above its respective tread.
- H. Seats:
1. Nominal 2" x 10" anodized aluminum with anodized end caps.
 2. Aluminum alloy 6063-T6, clear anodized 204R1, AA-M10C22A31, Class II with a wall thickness nominally .078" for impact and deformation resistance.
- I. Treads:
1. Nominal two (2) 2" x 10" mill finish aluminum with anodized end caps on rows two and up.
 2. Aluminum alloy 6063-T6, mill finish. With a wall thickness nominally .078" for impact and deformation resistance.
- J. Risers:
1. Nominal two (2) 1" x 6" mill finish aluminum with mill finish end caps on top row.
 2. Aluminum alloy 6063-T6, mill finish. With a wall thickness nominally .078" for impact and deformation resistance.
- K. Guardrails:
1. Rails shall be anodized aluminum tube with end plugs and elbows where required, All rails shall be secured to angle supports with galvanized fasteners. Top rails at sides, rear and front shall be 42 inches above the leading edge of seat or walking surfaces. Rear rail support members shall be aluminum channel, side and front rail support shall be aluminum angle.
 - a. Chainlink System:
 - 1) Fencing shall consist of 9 gauge, 2 inch mesh galvanized fabric, heavy duty tension bands, tension bars, brace bands, combo rail endcaps, and wire ties.
- L. Accessories:

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1. Channel End Caps: Aluminum alloy 6063-T6, clear anodized 204R1,AA-M10C22A31,Class II.
2. Hardware: Bolts and Nuts shall be hot dipped galvanized.
3. Hold Down Clip Assembly: Aluminum alloy 6063-T6 mill finish.
4. Joint Sleeve Assembly: Aluminum alloy 6061-T6, mill finish.

2.11 MATERIALS

- A. Extruded Aluminum: ASTM B221 or ASTM B221M, Alloy 6061, 6062, or 6063.
 1. Tensile Strength: 38,000 psi, minimum.
 2. Yield Point: 35,000 psi, minimum.
- B. Hardware: Provide design without hazardous protrusions, corners, or finishes, and requiring tools for removal after installation; countersunk fasteners are preferred.
 1. Use stainless steel for metal-to-metal connections; select type to minimize galvanic corrosion of materials connected by hardware.
 2. Use stainless steel for wood-to-wood and wood-to-metal connections.
 3. Use stainless steel with plastic components.
 4. Bearings: Self lubricating.
 5. Hooks, Including S-Hooks: Closed loop; maximum gap 0.04 inches.
 6. Rails and Loops: Same metal as item is mounted on, or aluminum; with powder coating.
 7. Anchors: In accordance with manufacturer's recommendations.

PART 3 EXECUTION

3.1 PREPARATION

- A. Stake location of athletic field equipment elements, including necessary athletic field perimeters, surfacing, access and egress points, hard surfaces, walls, fences, _____, and/or structures.
- B. Stake layout of athletic field equipment perimeter in accordance with approved shop drawings before starting any work.
 1. Verify that athletic field perimeters do not overlap hard surfaces, whether currently installed or not.
 2. Verify that athletic fields are free of obstructions.
 3. If conflicts or obstructions are found, notify Architect.
 4. Do not proceed with this work until revised drawings have been provided, showing corrected layout, and that any obstructions have been removed or corrections to layout have been made.

3.2 INSTALLATION

- A. Install athletic field equipment in accordance with manufacturer's instructions, and rules and regulations of specified athletic association indicated for this work.

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- B. Install athletic field equipment without sharp points, edges, or protrusions; entanglement hazards or pinch, crush, or shear points.

3.3 CLEANING

- A. Clean athletic field equipment of construction materials, dirt, stains, filings, and blemishes due to shipment or installation; clean in accordance with manufacturer's instructions, using cleaning agents as recommended by manufacturer.
- B. Clean athletic field area of excess construction materials, debris, and waste.
- C. Remove excess and waste material and dispose of off-site in accordance with requirements of authorities having jurisdiction.

END OF SECTION

SECTION 116843-OUTDOOR SCOREBOARDS AND SOUND SYSTEMS

PART 1 -GENERAL

1.01 SECTION INCLUDES

- A. One (1) Single-sided Daktronics LED multi-sport scoreboard
- B. One (1) Pair of TI-2015 Play Clocks
- C. Re-location of existing softball scoreboard – Including un-installing softball scoreboard, demolition of existing steel structure, installation of new structure and re-installation of softball scoreboard.
- D. One (1) Daktronics SS-200-4 Stadium Sound System (4-speaker system for multisport field)
- E. One (1) Daktronics SS-200-2 Softball Sound System (2-speaker system for softball diamond)
- F. Decorative Accents
- G. Press Box and Control Equipment for Scoreboards, Sports Display

1.02 REFERENCES

- A. Standard for Electric Signs, UL-48, 13th Edition
- B. Standard for Control Centers for Changing Message Type Signs, UL-1433, 1st Edition
- C. Standard for CAN/CSA C22.2
- D. Federal Communications Commission Regulation Part 15
- E. National Electric Code

1.03 SUBMITTALS

- A. Product data: Submit manufacturer's product illustrations, data and literature that fully describe the scoreboards and accessories proposed for installation.
- B. Shop drawings: Submit mechanical and electrical drawings.
- C. Functional system block diagram showing all major equipment and signal flow
- D. Maintenance data: Submit manufacturer's installation, operation, and maintenance manuals.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Product delivered on site.
- B. Scoreboard equipment to be housed in a clean, dry environment

1.05 PROJECT CONDITIONS

- A. Environmental limitations: Do not install scoreboard equipment until mounting structure is secure and concrete has ample time to cure.
- B. Field measurements: Verify position and elevation of structure and its layout for scoreboard equipment. Verify dimensions by field measurements.
- C. Verify mounting structure is capable of supporting the scoreboard's weight and wind load in addition to the auxiliary equipment.
- D. Installation may proceed within acceptable weather conditions.

1.06 QUALITY ASSURANCE

- A. For outdoor use
- B. Source Limitations: Obtain each scoreboard, decorative truss, school identification panel, control equipment, and audio equipment from a single manufacturer
- C. All proposed equipment and models of equipment must be standardized, previously designed, and documented with current reliability records, product cut sheets and shop drawings. Custom designed equipment will not be acceptable.
- D. ETL listed to UL Standards 48 and 1433
- E. NEC compliant
- F. FCC Class A Compliant
- G. ETLC listed to CAN/CSA 22.2
- G. Installer's qualification: Business familiar in the installation of systems similar in complexity to those essential for this project; and fulfillment of the following:
 - 1. At least (5) five years' experience with systems of the specified types and products included.
 - 2. Provide examples of three (3) previous installations of scoreboard designs located within 100 miles of project.

4. Retain a fully staffed and equipped service facility within 100 miles of project.
5. Installer to be factory educated in the installation and maintenance of any digital signal processed based control systems.
6. At the request of the owner, the Installer must demonstrate that he has:
 - ☐ Sufficient plant and equipment to complete the work within the agreed timetable
 - ☐ Sufficient staff with commensurate technical experience
 - ☐ Appropriate financial status to meet the obligations of the work

1.07 WARRANTY

- A. Provide five (5) years of factory warranty on permanently mounted scoreboards including wireless control equipment.
- B. Provide one (1) year warranty for batteries, battery-packs, battery recharging equipment, solar panels, pushbuttons, test meters, data cables and handheld control consoles/units.
- C. Provide 10 years of guaranteed availability of original parts for all equipment from the scoreboard manufacturer.
- D. Provide an established and on-going exchange program, with at least ten years of proven effectiveness, to supply replacement parts for any/all components that fail during the coverage period. To minimize downtime, the exchange parts shall be shipped on the same day the order is received or the following day. The manufacturer will include an air bill for the return of the defective components.
- E. Provide toll-free service coordination
- F. Provide technical phone support during school business hours

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. Daktronics, Inc., 331 32nd Avenue, P.O. Box 5128, Brookings, South Dakota 57006-5128 or acceptable alternative manufacturer meeting all published bid specifications.

2.02 PRODUCT (BASIS OF DESIGN)

- A. Daktronics SO-2019 single-sided football/soccer/lacrosse scoreboard displays period time to 99:59, HOME and GUEST scores to 99, SHOTS (or S.O.G.) and C. KICKS (or SAVES) – or DOWN, TO GO, BALL ON, QTR – to 99 for both teams. Arrows indicate the current HALF in soccer mode and POSSESSION in football mode. During the last minute of the period, the clock displays time to 1/10 of a second.

B. Daktronics TI-2015 single-sided timing display can be configured to count up or down from any preset number from 0 to 99.

C. Sportsound 200 Audio System

2.03 SO-2019 MULTI-SPORT SCOREBOARD

A. General information

1. Dimensions: 8'-0" (2.44 m) high, 18'-0" (5.49 m) wide, 0'-8" (203 mm) deep
2. Base weight: 816 lb (370 kg)
3. Base power requirement: 1080 W
4. Color: provide over 150 colors to choose from

B. Construction

1. Alcoa aluminum alloy 5052 construction
2. To avoid oil canning or waves in the face of the aluminum, no mechanical fasteners (screws, rivets or welds) shall be used to attach the face to the scoreboard body frame. Commercial sign tape shall be used to cover 100% coverage on all face attachment points.
3. The scoreboard cabinet shall not have any vertical or horizontal member spaced more than 42" O.C. and shall be one continuous cabinet without any vertical seams to be stitched together.
4. Scoreboard shall be able to be mounted to two (2) vertical columns and a have documented engineering data reflecting the ability to withstand wind pressure up to 72 lbs./sq. ft. with vertical I-beam spacing up to 16 ft. O.C.
5. Scoreboard face, back and perimeter: 0.063" thick
6. Scoreboard top and bottom: 0.125" thick extruded aluminum for added strength and to eliminated sagging
7. Digit faceplates: 0.063" thick
8. All scoreboard, decorative truss and school identification panel attachments to the beam structure shall be fastened only to the front flange of the beam to allow for attachment of additional panels to the back flange of the beam.
9. Each scoreboard, decorative truss and school identification cabinet shall require no more than one set of mounting clamps per vertical column at the top and bottom of each cabinet.

10. Mounting shall not require any drilling, welding or fastening hardware that penetrates the scoreboard, decorative truss and school identification cabinets

C. Digits and drivers

1. TS AlInGaP Light Emitting Diodes (LEDs)
2. Seven bar segments per digit
3. Digit color: White
4. PanaView® LED 140 degree digit technology. LED elements must protrude from scoreboard face and should not include any plastic, reflective protective face cover All components of each LED digit shall be encapsulated in a minimum of 1/8" thick, potting material, front and back allowing the entire unit to be 100% waterproof
5. Digit drivers and circuit boards within the scoreboard must be encapsulated in a minimum of 1/8" thick, potting material, front and back allowing the entire unit to be 100% waterproof
6. All digits: 24" (610 mm) high
7. Individual digit panels are fastened with a maximum of four screws for easy access and quick removal. Rivets are not an acceptable fastening method. Lexan covers shall not be used.

D. Additional Required Equipment

1. Vinyl scoreboard striping around the scoreboard.
2. Programmable electronic LED Team Name Message Centers (TNMCs)
3. Electronic LED Captions
4. 12 volt trumpet horn
5. Dual purpose 2.4 GHz spread spectrum radio control receiver mounted within the scoreboard cabinet to allow for control of scoreboard, wirelessly via mobile cell phone device and the full-featured All Sport 5000 control console.
6. 2' x 18' decorative non-backlit school identification panel below the scoreboard and covering the entire back of the scoreboard

7. Daktronics DA-1001-18 decorative truss (3' x 18'-0") above the scoreboard with backlit school identification lettering and logos.

- All components, including routed letters must be constructed of 100% aluminum

- Aluminum members shall be a combination of 2" x 2" and 3" x 3" square tubes and angles

- To maintain consistency in paint color and longevity, all truss painting shall be completed by the same manufacturer as the scoreboard and school identification panels

2.04 SCORING CONSOLES

- A. Consoles shall be an All Sport® 5010 controller and MX-1 mobile scoring application from smartphone and MUST be fully compatible for use with all existing Daktronics scoreboards in use by the college including re-located softball scoreboard.
- B. All Sport® 5010
 1. Capable of scoring football, lacrosse, soccer and field hockey through the use of keyboard inserts
 2. Controls multiple scoreboards and displays, including other compatible displays currently owned by customer
 3. Features include:
 - a. Maximum power requirement of 5 watts
 - b. Ability to recall clock, score, and period information if power is lost
 - c. A rugged aluminum enclosure to house electronics
 - d. A sealed membrane water-resistant keyboard
 - e. A 32-character liquid crystal prompting display to verify entries and recall information currently displayed
 - f. A 6' (1829 mm) power cord to plug into a standard grounded 120 V AC outlet
 - g. A 20' (6096 mm) control cable to connect to the control receptacle junction box
 - h. A practice timer mode

Can sound the horn at the end of each segment

Has 99 programmable segments

Displays the segment number and segment length

Has a programmable interval time

- i. Carrying case for console
- j. 2.4 GHz spread spectrum radio system with frequency hopping technology and 64 non-interfering channels; system includes a transmitter installed inside the console enclosure and a receiver installed inside the scoreboard
- k. Encapsulated Protective Molded PVC external antenna enclosure affixed to control console.

C. MX-1 Mobile Scoring Control

- 1. Portable control shall allow function of the scoreboard including electronic changeable captions from any location on site (i.e. bleachers, playing field, etc.) via cell phone app.
- 2. Controls multiple scoreboards and displays, including other compatible displays currently owned by customer
- 3. Receiver/transmitter shall be housed in a lockable outdoor weather sealed mounting enclosure
- 4. 2.4 GHz spread spectrum radio system with frequency hopping technology and 64 non-interfering channels; system includes a transmitter installed inside the console enclosure and a receiver installed inside the scoreboard
- 5. Mobile app shall be downloadable to any Apple or Android phone or tablet.

2.05 TI-2015 FOOTBALL / LACROSSE DELAY OF GAME CLOCKS (1 PAIR)

A. General information

- 1. Dimensions: 2'-4" (711 mm) high, 3'-4" (1.02 m) wide, 0'-8" (203 mm) deep
- 2. Weight: 36 lb (16 kg)
- 3. Power requirement: 35 W (red/amber digits), 75 W (white digits)
- 4. Color: semi-gloss black

B. Construction

1. Alcoa aluminum alloy 5052 construction
2. To avoid oil canning or waves in the face of the aluminum, no mechanical fasteners (screws, rivets or welds shall be used to attach the face to the scoreboard body frame. Commercial sign tape shall be used to cover 100% coverage on all face attachment points.
3. Display back, face, and perimeter: 0.063" (1.60 mm) thick.

C. Digits and drivers

1. TS AlInGaP Light Emitting Diodes (LEDs)
2. Seven bar segments per digit
3. Digit color: Red
4. PanaView® LED 140-degree digit technology. LED elements must protrude from scoreboard face and should not include any plastic, reflective protective face cover.
5. All components of each LED digit shall be encapsulated in a minimum of 1/8" thick, potting material, front and back allowing the entire unit to be 100% waterproof
6. Digit driver must be encapsulated in a minimum of 1/8" thick, potting material, front and back allowing the entire unit to be 100% waterproof.
7. Clock digits: 24" (610 mm) high

D. Horn

1. Vibrating horn mounted inside the scoreboard cabinet behind face
2. Sounds automatically when period clock counts down to zero
3. Sounds manually as directed by operator

E. Additional Required Equipment

1. Individual digit protective screens
2. (1) Four-wheel cart for portability
3. Dual purpose 2.4 GHz spread spectrum radio control receiver mounted within the clock cabinet to allow for control of scoreboard, wirelessly via mobile cell phone device and from the press box via the control system.

2.06 INTEGRATED SPORTSOUND AUDIO SYSTEM

A. Basis of Design: Daktronics Sportsound 200

1. The audio system is composed of four (4) SS200 speakers at the stadium and (2) speakers at the softball location, that may be mounted to poles or walls/rooftops of press boxes for adequate coverage of seating areas. Durable sound cabinet design protects internal speaker components from inclement weather, UV radiation, and sport balls.
2. The audio system includes speaker amplification and signal processing components that are 100% self-contained within the control enclosure. All electronic components are to be properly housed and shielded from the elements to ensure long life. Design the system to ensure that all processing and amplification equipment meets project and manufacturer's recommendations for allowed headroom. The services of the Audio System Installer include all necessary acoustical, electrical, mechanical, and structural engineering to incorporate a complete sound system.
3. The Audio System is to achieve the following performance standards: continuous output level of 130 dBA at 1 meter with sufficient headroom to allow for peaks. The frequency response of the sound system to be at least 58 Hz to 13.6 kHz, -3 dB at 1 meter.
4. The Audio System utilizes digital signal processing for all applications (equalization, crossover, limiting, etc.). All digital signal processing is contained within each amplifier. Each amplifier's digital signal processor will provide the following signal processing capability: gain control, minimum four band filtering or equalization, delay, cross-over, and limiting.
5. The complete Audio System installation must include the following:
 - a. All necessary design, fabrication, processing and amplification equipment, acoustic devices, and installation for a complete sound system as described
 - b. Main speaker cluster audio system
 - c. Mixing console
 - d. One (1) announcer's 2-channel mixer interface
 - e. Two (2) exterior 2-channel wall mounted mixer interfaces
 - f. One (1) auxiliary audio input
 - g. One (1) wireless microphone transmitter and receiver
 - h. ADA compliant hearing assist system with minimum number of legally required receiver kits

B. Speaker Cabinets

1. One (1) 14" (356 mm) coaxial driver with 3" (76 mm) voice coil mounted in a durable black copolymer polypropylene enclosure
2. Frequency response (+/-3 dB @ 1 m): 58 Hz to 13.6 kHz
3. Max Continuous SPL (@ 1 m): 130 dBA
4. Overall coverage: 80 V X 80 H
5. Acceptable products:

Daktronics Sportsound® SPK-CX-1001 - Quantity (6 – 4 @ stadium, 2 @ softball)

C. Amplifier – Quantity 2

1. 4 Channel; 700 W per channel
2. Frequency response: 20 Hz to 20 kHz +/-0.5 dB
3. Signal to noise: 105 dB (20 Hz to 20 kHz referenced to 8 Ω)
4. THD+N: 0.1% (20 Hz to 20 kHz)
5. Acceptable products:

LEA Connect Series 704N @ 1

D. Daktronics Multimedia Audio Mixer – Quantity 2

1. Four mic inputs with bass cut for vocal microphones and phantom power
2. Two mic/line (XLR/TRS) switchable inputs
3. Two stereo RCA inputs
4. One 1/8" music input
5. Individual input channel metering and output meters
6. Two outputs, XLR and 1/4", each with selectable ducking and limiting functions
7. Fire Alarm interface, Normally Open (NO) or Normally Closed (NC), selectable

E. Daktronics Announcers Audio Mixer

1. Balanced XLR input, balanced XLR output, and 1/4" headphone jack, 3.5mm stereo input jack

2. Momentary and continuous audio output modes
 3. Onboard 12V phantom power for condenser microphones
 4. Bass Cut switch for increasing speech intelligibility
 5. Auto music reduction (ducking) to lower music volume when talking into microphone
 6. 4-segment LED metering with Overload (OL) indication
 7. Output limiting for outbound equipment protection
 8. Switchable Line to Mic Pad for connecting directly into a power amplifier or connecting sub mixer
 9. Individual source level control
- F. Single-Muff Headset
1. Neodymium magnet
 2. Cardioid condenser microphone
- G. Announcer's Mixer Carrying Case
1. Black polypropylene construction
 2. Minimum dimensions of 16.24" H x 12.94" W x 6.78" D (412 mm, 329 mm, 172 mm)
 3. Custom preconfigured MDL Foam insert to store mixer, headset, and audio cables
- H. 2-Channel Wall Mixer – Quantity 2
1. One balanced mic level input via 3-pin female XLR
 2. One unbalanced stereo aux input via 3.5mm TRS
 3. Two LEDs to indicate signal levels
 4. Bass cut switch
 5. Additional line input for daisy-chain configuration
 6. Water-tight, lockable enclosure
- I. Wireless Microphone Receiver – Quantity 2
1. 1/2 RU unit

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2. 24 bit digital audio
 3. XLR balanced mic/line outputs
 4. RF Sensitivity: -97 dBm at 10⁻⁵ BER
 5. Audio Frequency Response: 20 Hz to 20 kHz, +/- 1 dB
 6. Audio Dynamic Range: > 120 dB (A)
 7. Total Harmonic Distortion: < 0.1%
- J. Wireless Handheld Transmitter – Quantity 2
1. Microphone element: Cardioid, Dynamic Vocal Microphone
 2. Working Range: 100 m (328')
 3. Battery life: 9+ hours
 4. RF Output: Selectable 1 mW or 10 mW
- K. ADA Assistive Listening System-Listen Technologies LS-03-216-01
1. One (1) LT-800 Stationary RF Transmitter (216 MHz)
 2. One (1) LA-122 Universal Antenna Kit (216 MHz)
 3. One (1) LA-326 Universal Rack Mounting Kit
 4. Four (4) LR-400 Portable Display RF Receiver (216 MHz)
 5. Four (4) LA-164 Ear Speaker
 6. Four (4) LA-361 High Capacity AA Alkaline Batteries (2)
 7. One (1) LA-304 Assistive Listening Notification Signage Kit
- L. Middle Atlantic Fold out, wall mounted rack (EWR-10)
- M. Cable and control wiring
1. All cables must be installed in conduit or closed raceway areas. Use plenum cable as necessary. Exposed cable is not acceptable. Cable specifications are as follows:
 2. 12awg outdoor rated cable from audio control to sound cabinet.
 3. Microphone level cables: No. 22 shielded jacketed - Belden 9451 with black jacket

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that mounting structure is ready to receive scoreboard. Verify that placement of conduit and junction boxes are as specified and indicated in plans and shop drawings. Verify concrete has cured adequately according to specifications.

3.02 INSTALLATION

- A. All power and control cables to scoreboards and displays will be routed in conduit, power to the scoreboards/displays as well as raceways by the Electrical Contractor.
- B. Install scoreboards and exterior displays to beams in location detailed and in accordance with manufacturer's instructions. Verify unit is plumb and level.
- C. All scoreboard attachments to the beam structure shall be fastened only to the front flange of the beam to allow for attachment of additional panels to the back flange of the beam.
- D. Each scoreboard cabinet shall require no more than one set of mounting clamps per vertical column at the top and bottom of each cabinet.
- E. Mounting shall not require any drilling, welding or fastening hardware that penetrates the scoreboard cabinets.
- F. Manufacturer's representative to provide and install structural support steel in accordance to the equipment ordered.

3.03 INSTALLATION—CONTROL CENTER

- A. Provide boxes, cover plates and jacks in locations per plans.
- B. Test connect control unit to all jacks and check for proper operation of control unit, scoreboard and all features. Leave control unit in carrying case and other loose accessories with owner's designated representative.
- C. Verify earth ground does not exceed 15 ohms.

3.04 TRAINING

- A. Provide on-site scoreboard and audio training after installation.

END OF SECTION

SECTION 131251 - PERMANENT BEAM GRANDSTAND

PART 1 - GENERAL

1.1 SYSTEM DESCRIPTION

- A. Design, fabrication, and installation of permanent beam design grandstands including:
 - 1. Concrete Foundations
 - 2. Steel Understructure
 - 3. Aluminum Decking System
 - 4. Press Box

1.2 REFERENCE STANDARDS

- A. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.
- B. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.
- C. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.
- D. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength; 2021.
- E. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2023.
- F. ASTM A529/A529M - Standard Specification for High-Strength Carbon-Manganese Steel of Structural Quality; 2019.
- G. ASTM A572/A572M - Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel; 2021, with Editorial Revision.
- H. ASTM A992/A992M - Standard Specification for Structural Steel Shapes; 2022.
- I. ASTM F3125/F3125M - Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, Inch Dimensions 120 ksi and 150 ksi Minimum Tensile Strength, and Metric Dimensions 830 MPa and 1040 MPa Minimum Tensile Strength; 2023.

1.3 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturers must have minimum ten years of experience in the manufacture of bleachers and grandstands; welders must be AWS certified; manufacturing capability according to various code compliances.

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- B. Installer Qualifications: Employees to be trained and experienced in the installation of grandstands.
- C. Source Quality Control: Mill Test Certification.
- D. AISC Shop Certification.

1.4 SUBMITTALS

- A. Submit shop drawings in accordance with Section 013300 - Submittal Procedures.
- B. Shop Drawings: Shop Drawings submitted shall be designed and detailed under the direct supervision of a licensed Professional Engineer. The Professional Engineer shall oversee the design and detailing of the project.

1.5 SITE CONDITIONS

- A. Field Site:
 - 1. Contractorto make site accessible.
 - 2. Contractor to verify site locations, benchmarks.
- B. Underground Utilities: Contractor to clearly mark all underground utilities and obstructions and relocate all that conflict with grandstand.
- C. Soil Test: Refer to geotechnical report indicating soil conditions for proper foundation design.

1.6 BUILDING CODES

- A. Owner confirms the Building Codes that apply to this project are:
 - 1. ICC 300-2021 (Standards for Bleachers, Folding and Telescopic Seating and Grandstands)
 - 2. International Building Code (IBC) - latest version or state version with amendments
 - 3. AISC Steel Construction Manual, ANSI/AWS D1.1 Structural Welding Code.

1.7 DESIGN LOADS

- A. Live Load: 100 lbs./sq. ft. gross horizontal projection. All stringers shall be limited to L/200 for maximum vertical live load deflection.
- B. Lateral Sway Load Parallel to Seat Rows: 24 lbs./linear foot.
- C. Sway Load Perpendicular to Seat Rows: 10 lbs./linear foot.
- D. Live Load on Seat and Tread Plank: 120 lbs./linear foot.
- E. Guardrail Load: Per Building Code listed in section 1.5.

1.8 WARRANTY

- A. Grandstands shall be warranted for a period of one (1) year against defects in materials and workmanship starting after Substantial Completion of the project. This does not apply to any damage resulting from neglect, misuse or improper handling of such material by the Owner. Any exposed mill finish aluminum surface will become discolored due to oxidation, which is a natural occurrence. The bleacher manufacturer will not be responsible for discoloration of oxidized mill finish aluminum.

PART 2 – PRODUCTS

2.1 MANUFACTURER - BASIS OF DESIGN

- A. E & D Specialty Stands, Inc. 2081 Franklin St. P.O. Box 700 North Collins, NY. 14111 Tel (800) 525-8515, Fax (716) 337-3436.
- B. Alternate manufacturers approved via addendum.

2.2 PERMANENT BEAM GRANDSTAND

- A. Product Description:
 - 1. Horizontal Beam Design: Vertical columns placed 18'-0" on center laterally. All horizontal beams are wide flange beams. Transverse bays are free of cross bracing the total length of the grandstand.
 - 2. Stringers: Stringers are wide flange beams with steel angle rise and depth fabrication and are placed 6'-0" on center.
- B. Front Walkway:
 - 1. Walkway width: 6'-2".
 - 2. Front of grandstand elevated 3'-6" above grade.
- C. Decking:
 - 1. Rise per row 13", depth per row 26".
 - 2. Plank Arrangement:
 - a. Channel Interlock Deck (CI). The planking shall be maintenance free, corrosion resistant all aluminum deck. There will be no gaps between the longitudinal joints of the planking. The deck extrusions shall have a minimum actual vertical support rib height of 1.75" and a wall thickness of 0.080". All deck extrusions shall mate longitudinally within the exterior vertical rib of the entire extrusion length to create a positive male/female tongue and groove connection for the elimination of independent individual deck member flex. Decking is designed for strength and rigidity to prevent an oil-canning effect in the decking material. The tread surface shall have a non-slip anti-skid fluted design for safety and be designed for a concealed fastening system to the understructure.
 - b. Attachment to Decking: These extrusions shall be such that the attachment of the seat brackets, step brackets, mid-aisle rails and all other components that attach at the tread-riser is accomplished without deck penetrations. No thru bolting or

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- drilling of the aluminum tread-riser system shall be permitted. Only in areas where there are not nose or heel channels, will through-bolting be acceptable. The system shall allow for seat and aisle reconfiguration at any time without evidence of its previous configuration.
- c. Walking Surface Treatment (Traction Coating): All aluminum intended as a walking surface, including walkways, aisles, walking surface in seating sections, stairs, ramps, platforms, handicap areas, and landings will exhibit a factory applied slip resistant surface treatment intended to minimize the effects of wet conditions for pedestrian's safety. This surface treatment will increase the slip resistance of mill finish aluminum in all directions of travel, including parallel to the seating, to achieve 0.8 coefficient of friction (slip resistance). The preferred method to achieve this slip and stain resistant surface treatment is a thermobonded and electrostatically applied process.
 - d. Riser Planks: The riser is to be an extrusion of 6063-T6 aluminum alloy 0.078" wall thickness that has a male ridge running continuous at the top edge so designed that it will interlock into the front bottom of the nosing extrusion on the tread. The riser is to be of sufficient overall height to adequately lap the vertical projection of the back and lower tread extrusion.
3. Riser Plank Finish:
 - a. Coating: Powder coat system meeting AAMA 2604 specifications with a hardness rating of 2H. (Owner to specify color).
 4. Riser Plank Front Closure Finish:
 - a. Provide a riser plank front closure from top of front walkway to within 2" of grade, on the field side of the bleacher, stairs, and ramp.
 - b. Coating: Powder coat system meeting AAMA 2604 specifications with a hardness rating of 2H. (Owner to specify color).
 5. Seating:
 - a. 2 x 10 Seat Board: The seat board shall be maintenance free, corrosion resistant all aluminum plank. The seat board extrusions shall have four vertical support ribs at a minimum actual height of 1.75" and a wall thickness of 0.08".
 6. Seat Board Finish:
 - a. Clear anodized finish: 204R1, AA-M10C22A31, Class II.
 7. Guardrails:
 - a. Pipe and Fence System (Vinyl Coated Fence): Furnished on sides of the bleacher including stairs, ramps, vomitories and landings. The railing system shall be designed to meet all applicable codes. Rails shall be not less than 42" vertically above the leading edge of the seat board surface at the back and sides of the bleacher. Rails shall not be less than 42" above the elevated front footrests. The railings are to be 1 5/8" O.D. anodized aluminum pipe with end plugs at ends of straight runs and/ or elbows at corners. They are secured to angle rail posts with galvanized rail clamps and fasteners. Included on all sides of the bleacher will be 2" x 6-gauge Black Vinyl Coated chain link fencing fastened in place with aluminum ties.
 8. Means of Egress:
 - a. Stairs: Shall be provided per applicable codes and/or architects' drawings. Stairs shall have a maximum rise of 7" and a minimum run of 11" with a 1" contrasting nose (black) to delineate the leading edge of each step. Risers shall be provided to

fully close the space between the stair treads. The stair guardrails shall be 42" above the leading edge of the treads. Handrails shall extend at least 12" beyond the top and bottom of the stair segment and shall be parallel with the floor or ground surface. The clear space between the handrail and the guardrail shall be 1-1/2" minimum. Gripping surfaces shall be continuous. Top of handrail gripping surfaces shall be mounted between 34" and 38" above the leading edge of the treads. Ends of handrails shall be either rounded or returned smoothly to floor, wall or post. Handrails shall not rotate within their fittings.

- b. Ramps: Shall be provided per applicable codes and/or architects' drawings. The maximum slope of a ramp shall be 1:12. The maximum rise for any run shall be 30". The minimum clear width of a ramp shall be 36". Ramps shall have level landings at the bottom and top of each run. The landing shall be at least as wide as the ramp run leading to it. The landing length shall be a minimum of 60" clear. If ramps change direction at landings, the minimum landing size shall be 60" by 60". Handrails shall be provided along both sides of ramp segments. The inside handrail on switchback or dogleg ramps shall always be continuous. If handrails are not continuous, they shall extend at least 12" beyond the top and bottom of the ramp segment and shall be parallel with the floor or ground surface. The clear space between the handrail and the guardrail shall be 1-1/2" minimum. Gripping surfaces shall be continuous. Top of handrail gripping surfaces shall be mounted between 34" and 38" above ramp surfaces. Ends of handrails shall be either rounded or returned smoothly to floor, wall or post. Handrails shall not rotate within their fittings.
 - c. Aisles: Shall be provided per applicable codes and/or architects' drawings. Aisles with seating on both sides shall have a 36" high, 1 5/8" O.D. anodized aluminum pipe handrail with an intermediate rail at approximately 22" above tread. Anodized aluminum handrails with rounded ends are discontinuous to allow access to seating through a space 22" (min.) to 36" (max.). Intermediate steps shall provide equal rise and run throughout aisle. Each shall have aisle nosing with black powder coat finish and riser closure with finish to match the grandstand risers.
9. Handicap Provisions:
- a. Handicapped seating shall be provided per applicable codes and the (Americans with Disabilities Act) for wheelchair accessibility and/or architects' drawings. All handicapped seating is to have a companion seat adjacent to them. Wheelchair pockets inset into the front rows of seating will be enclosed on all three sides with no exposed vertical rise allowed.

2.3 MATERIALS / FINISHES

A. Substructure:

- 1. Structural shapes meet one of the following specifications: ASTM A36/A36M, ASTM A572/A572M-50, ASTM A529/A529M-50, ASTM A500/A500M grade B or ASTM A992/A992M-50.
- 2. Shop connections are seal welds and shall conform to ANSI/AWS D1.1, latest edition.

B. Substructure Finish:

- 1. After fabrication, all steel is hot-dipped galvanized to ASTM A123/A123M specifications.

- C. Extruded Aluminum:
 - 1. Extruded aluminum alloy 6063-T6.
 - 2. Clear anodized finish: 204R1, AA-M10C22A31, Class II.
 - 3. Tread Planks: Extruded aluminum alloy, 6063-T6 mill finish with traction coating.
 - a. NOTE: Any exposed mill finish aluminum surface will become discolored due to oxidation, which is a natural phenomenon. The bleacher manufacturer will not be responsible for discoloration of oxidized mill finish aluminum.

2.4 ACCESSORIES

- A. Hardware:
 - 1. High Strength Bolts and Nuts – per ASTM F3125/F3125M, hot dipped galvanized.
 - 2. Ordinary Bolts and Nuts – per ASTM A307, hot dipped galvanized.
 - 3. Hold-Down Clip Assemblies - Aluminum alloy 6063-T6.
 - 4. Screws shall be 302 stainless steel with Ruspert coating.
- B. End Caps
 - 1. Tread Planks: single planks and multiple planks shall be capped with a one-piece end cap. Extruded aluminum 6063-T6. Clear anodized finish: 204R1, AA-M10C22A31, Class II. Attached with stainless steel screws.
 - 2. Seat Planks: End cap should encapsulate the end of the plank leaving no part of the cut end exposed. The end cap shall be made of stamped aluminum with smooth edges and Clear anodized finish: 204R1, AA-M10C22A31, Class II. Attached with stainless steel screws.
- C. Joint Sleeve Assembly: To be inserted in flat plank to maintain true alignment in joining two plank pieces.
- D. Hand Railing: Extruded aluminum alloy, 6063-T6 clear anodized 204R1, AA-M10C22A31, Class II.
- E. Aisle Nose and Stair Nose: Aluminum alloy, 6063-T6, non-skid black powder coated finish or other paint system meeting AAMA 603.8 specifications with a hardness rating of 2H.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. All work will be performed by factory-trained technicians with a minimum of 10 years of experience in bleacher seating installation. Complete installation as per approved shop drawings and manufacturer's instructions.
- B. After installation, unit shall be inspected for proper alignment and function.

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3.2 FOUNDATIONS/PIERS

- A. Footings for the grandstand shall be designed to provide sufficient bearing area to support the total live and dead loads of the grandstand without exceeding the allowable soil bearing pressure.
- B. Design and depth of footings shall be determined from the geotechnical report indicating local soil conditions.
- C. Hot-Dipped galvanized anchor bolts shall be used.
- D. Concrete shall attain a working strength of 4,000 psi at 28 days.

END OF SECTION

SECTION 131260 - PREFABRICATED PRESS BOX

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Press Box.

1.2 SUBMITTALS

- A. See Section 013300 - Submittal Procedures for submittal procedures.
- B. Samples: Submit samples indicating finishes for press box.
- C. Shop Drawings: Indicated floor plan, elevations and section thru press box with design calculations and approval acknowledged via a registered Professional Engineer licensed in the state of New York.
- D. Qualifications: Schedule of work experience including the names and phone numbers of contacts of three similar projects within the local geographical area.

1.3 REGULATORY REGULATIONS

- A. Contractor shall include in his cost, submittal required by the State of New York; Department of State, Division of Building Standards and Codes. It will be the Contractor's responsibility to provide required drawings sealed by a licensed professional and to obtain approval, by a liaison, and coordinate inspections with this governing body to assure the Owner a legitimate Certificate of Occupancy.
- B. Design shall conform to 2020 Building Code OF New York State.
- C. Electrical Components: UL Listed.
- D. Design Loads:
 - 1. Live Load:
 - 2. Floor: 100 psf.
 - 3. Roof filming platform: 100 psf.
 - 4. Wind Load: Vult: 115 MPH, Vasd: 89 MPH

1.4 QUALIFICATIONS

- A. Manufacturer: Company specializing in modular building construction with a minimum of five years experience in manufacturing press boxes.
- B. Installer: Company specializing in installation of modular building construction with a minimum of five years installing press boxes.

1.5 WARRANTIES

- A. Refer to Section 017700 - Closeout Procedures: Products warranties and product bonds.
- B. Press box shall be guaranteed for one year against defective material and workmanship excluding abnormal use and vandalism.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. E&D Specialty Stands, Inc., 2081 Franklin Street, P.O. Box 700, North Collins, NY 14111, Telephone (800) 525-8515, Fax (716) 337-3436
- B. Other manufacturers seeking to be an approved manufacturer must submit product literature on the specified press box to the Architect for review and receive approval from the Architect 10 days prior to bid date.
- C. Being listed as an acceptable manufacturer does not remove the manufacturers responsibility to meet the specifications.

2.2 PRESS BOX MATERIALS

- A. Size: Overall size of the press box shall be 12 ft. by 36 ft. with an entrance platform on both ends. Includes roof deck filming platform.
- B. Press box Materials:
 - 1. Floor System:
 - a. 1/2" CDX plywood sheathing (painted black).
 - b. 5/8" Type-X gypsum sub-floor sheathing.
 - c. Insulation: R-22 fiberglass batts with vapor barrier.
 - d. Joists: 2" x 6" #2 SPF, on 16" centers, longitudinal framing.
 - e. Decking: 3/4" Sturdifloor, tongue and groove plywood, (Index 24" O.C.).
 - f. Covering: 1/8" Armstrong Excelon vinyl composition tile.
 - g. Molding: 4" vinyl base molding by Roppe.
 - 2. Wall System:
 - a. Studs: 2" x 6", #2 or better SPF, on 16" centers, IBC framing.
 - b. Top and Bottom Plate: 2" x 6" #2 or better SPF.
 - c. Headers: As span and design load requires.
 - d. Ceiling Height: 8'-0" - 7'-9 1/2", front to back.
 - e. Interior Wall Finish: 5/8" vinyl-faced gypsum panels, Class A F.S.R. over 5/8" Type-X gypsum wall panels.
 - f. Insulation: R-21 fiberglass batts with vapor barrier.
 - g. Sheathing: 1/2" CDX plywood with Tyvek house wrap air infiltration barrier.
 - h. Siding: Mastic .048 vertical board and batten premium vinyl siding panels.
 - 3. Roof System:

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- a. Joists: 2" x 10", #2 SPF, 16" O.C. spacing.
 - b. Overhang: 15-1/2" over front wall, 10" over rear wall, 12" over end walls. .019 aluminum fascia with perforated aluminum soffit panels.
 - c. Sheathing: 3/4" SturdiFloor, tongue and groove plywood under 1/4" Georgia Pacific Dens-Deck.
 - d. Insulation: R-30 fiberglass batts with vapor barrier.
 - e. Ceiling panels: 5/8" gypsum board, taped and bedded with spray textured finish, Class A F.S.R. over 5/8" Type-X gypsum panels.
 - f. Surface: .060 polyester reinforced skid and spike resistant PVC membrane, fully adhered (Class A rated).
4. Roof Platform:
- a. Hatch: Bilco Model NB50 2'6" x 4'6" aluminum roof hatch.
 - b. Ladder: Alaco Model H60 60-degree aluminum ships ladder.
 - c. Hatch rail: Bilco Bil-Guard hatch rail system.
5. Roof Guardrail System:
- a. Guardrails shall be 5/8" O.D. anodized aluminum pipe 6061-T6 alloy.
 - b. Guardrail supports shall be galvanized steel angle 3" X 2" Supports shall be attached to fascia with a minimum of (2) 1/2" dia. galvanized steel bolts.
 - c. Chain link fence shall be 2" mesh, 9 Ga. galvanized fabric.
6. Doors:
- a. Exterior: 36"x80" Special-Lite #SL-17 FRP flush insulated entry door with aluminum frame, rigid vinyl weather-stripping, aluminum threshold, 10"x10" window, hydraulic closer and commercial lever-handled keyed lockset.
 - b. Interior: 1-3/8" solid-core stained Birch door with stained Fruitwood jambs and casing. Passage lever-handled hardware.
7. Windows:
- a. Exterior: sloped Lindsay #830 "Pinnacle Series" double horizontal sliders with extruded vinyl frames, AAMA LC-25 structural rating, with 3/4" insulated Low-E, Argon filled tempered glass and removable insect screens. (both sashes are removable).
 - b. Interior: 1/4" tempered safety glass fixed pane with stained Fruitwood jambs and casing.
8. Electrical:
- a. Panel: Square D QO330MQ125 with main disconnect; rated at 208/120v, 3 single phase, 125 amp main breaker.
 - b. Interior lighting: SATCO #62-1054 45/LED/1X4/FLUSH/3K/WH 45 watt, 30K, LED 1X4 surface mounted LED light.
 - c. Exterior Light: Westinghouse 6106800 LED wall fixture with photo eye sensor
 - d. Emergency/Exit: Lithonia ECR-REM-LED emergency combination exit/flood light with 90 min. battery back-up and ERE-SLG-WP LED remote emergency flood light.
 - e. Switches: Lutron #MSCL-DP153M-LA dimmable occupancy sensor switch with manual override, Intermatic #EI500 programmable astronomical timer switch.
 - f. Receptacles: Pass & Seymour #3232 125 volt/15 amp duplex spec-grade receptacles; Wiremold 5400 Series two-piece multi-channel, dual voltage, nonmetallic surface raceway along front wall below scorer's counter, outlets on 48" centers.

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- g. Circuits: All branch circuit wiring is minimum #12 THHN encased in EMT thin wall conduit or MC cable.
 - h. HVAC: TPI recessed electric forced-air wall heaters with integral thermostat
 - i. Conduit rough-in for PA and Data systems.
- 9. Scorer's Table:
 - a. 20" deep x 3/4" lauan grade plywood with 1-1/2" x 2" edge surfaced with Nevamar High-Pressure Laminate (or equal). Scorer's table to be full length of press box with support arms 48" O.C.
- 10. Miscellaneous
 - a. 10 LB. dry chemical fire extinguisher in each room. Rated 4-A: 20-B:C.
 - b. 12 inch high X 1 inch deep cast aluminum lettering "SUNY ERIE STADIUM" above windows.
 - c. Secondary exterior egress ladder from roof.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install press box in accordance with manufacturer's installation instructions.
- B. Erect in accordance with shop drawings.
- C. Install structures plumb, level and secure. Adjust door hardware for smooth operation and lubricate where necessary.

3.2 INSPECTION

- A. Within six months after completion of installation, it shall be inspected by the manufacturer or his/her representative.

3.3 CLEANING

- A. Clean surfaces after erection in accordance with manufacturer's recommendations.
- B. Remove and properly dispose of packaging and construction debris.

END OF SECTION

SECTION 133400 - ENGINEERED POST FRAME STRUCTURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Engineered wood-framed structures consisting of the following components:
 - 1. Factory-engineered wall columns.
 - 2. Factory-engineered roof truss.
 - 3. Factory-engineered metal roof and wall panels.
 - 4. Factory-engineered building system accessories including doors and windows.
 - 5. Prefinished metal trim items.
 - 6. Prefinished ridge vents and soffits.

1.2 RELATED REQUIREMENTS

- A. Section 033000 - Cast-in-Place Concrete.
- B. Section 072600 - Vapor Retarders.

1.3 REFERENCE STANDARDS

- A. ANSI/TPI 1 - National Design Standard for Metal-Plate-Connected Wood Truss Construction; 2014.
- B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.
- C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.
- D. ASTM D2244 - Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates; 2023.
- E. ASTM D4214 - Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films; 2023.
- F. ASTM F1667/F1667M - Standard Specification for Driven Fasteners: Nails, Spikes, and Staples; 2021a.
- G. AWC NDS - National Design Specification (NDS) for Wood Construction; 2018, with Errata (2021).
- H. AWWA U1 - Use Category System: User Specification for Treated Wood; 2024.

1.4 REFERENCE STANDARDS ORGANIZATIONS

- A. Lumber grading rules and wood species:
 - 1. Northeastern Lumber Manufacturer's Association, Inc. (NELMA).
 - 2. Southern Pine Inspection Bureau (SPIB): Southern Pine.
 - 3. West Coast Lumber Inspection Bureau (WCLIB): Douglas Fir.
 - 4. Western Wood Products Association (WWPA): Douglas Fir and Ponderosa Pine.
 - 5. MSR Lumber Producers Council (MSR) for machine stress rated lumber.
- B. ICC Evaluation Service (ICC-ES).

1.5 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene one week before starting work of this section.

1.6 SUBMITTALS

- A. For each type of process and factory-engineered product. Indicate component materials, dimensions, profiles, and construction and installation details.
 - 1. Include information for specialty accessory products specified for this Project.
 - 2. 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.
 - 3. For products receiving waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to truss fabricator.
 - 4. Include copies of warranties from chemical treatment manufacturers for each type of treatment.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
 - 1. Sizes, stress grades, and species of lumber.
 - 2. Anchor-bolt layout.
 - 3. Structural Framing Drawings: Show complete fabrication of primary and secondary framing. Include provisions for openings and the following information:
 - a. Slope or depth, span, and spacing of truss.
 - b. Heel bearing height.
 - c. Design loading to include:
 - 1) Top chord live load.
 - 2) Top chord dead load.
 - 3) Bottom chord dead load.
 - 4) Concentrated loads and their points.
 - d. Adjustments to lumber and plate design values for conditions of use.
 - e. Plate type, thickness of gauge, and size.
 - f. Lumber size, species and grade for each member.
 - 4. Metal Roof and Wall Panel Layout Drawings: Show layouts of metal panels including methods of support. Include details of edge conditions, joints, panel profiles, corners, anchorages, trim, flashings, closures, and special details. Indicate the following

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components:

- a. Roof mounted items.
- b. Wall mounted items.
5. Submit Shop Drawings that have been engineered and certified by professional engineer licensed in the State in which Project is located. Include seal and signature of professional engineer on Shop Drawings.
- C. Design Data: Truss engineering calculations for loading and stresses, bearing seal and signature of professional engineer licensed in the State in which Project is located. Include the following calculations:
 1. Minimum design shall meet design standards of latest edition of International Building Code unless other, more stringent requirements are in force in Project location.
 2. Bending moments and axial forces for each member.
 3. Basic plate design values.
 4. Design analysis for each joint indicating that proper plates have been used.
 5. Provide design calculations for exterior walls, canopies, soffit systems, and lateral bracing walls. Design wind loads and lateral bracing loads are indicated on structural Drawings.
 6. Submit design calculations that have been engineered and certified by professional engineer licensed in the State in which Project is located. Include seal and signature of professional engineer on calculations
- D. Samples for Initial Selection: For units with factory-applied color finish, color chart of manufacturer's standard colors.
- E. Evaluation Reports: For the following, from ICC-ES:
 1. Wood-preservative-treated wood.
 2. Engineered wood products.
- F. Quality Control Submittals:
 1. Test Reports: Certified test reports showing compliance with specified performance characteristics.
 2. Certification: Manufacturer's certification that Products furnished meet specified design and performance criteria.
- G. Submit written proof of third party inspection program in force for truss manufacturer used on Project.
- H. Certifications: Certify that specified roof and wind load requirements are met.

1.7 QUALITY ASSURANCE

- A. Manufacturer with minimum 5 years' documented experience that participates in recognized quality-assurance program that complies with quality-control procedures
 1. and that involves third-party inspection by an independent testing and inspecting agency acceptable to Architect and authorities having jurisdiction.
 2. Manufacturer's responsibilities include providing professional engineering services needed to assume engineering responsibility.
 3. Manufacturer shall have engineering department.

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4. Engineering Responsibility: Preparation of Shop Drawings and comprehensive engineering analysis by qualified professional engineer.
- 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. Source Limitations: Obtain engineered post frame building components, including primary and secondary framing and metal panel assemblies, from single source from single manufacturer.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Handle and store materials per manufacturer's requirements.
- B. Handle and store trusses to comply with recommendations in TPI BCSI, "Building Component Safety Information: Guide to Good Practice for Handling, Installing, Restraining, & Bracing Metal Plate Connected Wood Trusses."
 1. Store trusses flat, off of ground, and adequately supported to prevent lateral bending.
 2. Protect trusses from weather by covering with waterproof sheeting, securely anchored.
 3. Provide for air circulation around stacks and under coverings.
 4. Store trusses to avoid contact with other materials that could create staining or discoloration.
- C. Inspect trusses upon deliver to Project site and notify manufacturer immediately if members have damage from handling or show discoloration, corrosion, or other evidence of deterioration. Discard and replace trusses that are damaged or defective.

1.9 WARRANTY

- A. Manufacturer's Special Warranty – Treated Material: Manufacturer agrees to repair, restore, or replace columns that fail in materials within specified warranty period.
 1. Warranty Period: 50 years from date of Substantial/Material Completion.
 2. Manufacturer shall repair treated structural columns that fail because of insect damage or because of decay that occurs under normal conditions and proper use. If manufacturer is not able to repair structural posts to satisfaction of Architect and Owner, manufacturer shall replace damaged treated structural columns.
- B. Special Warranty on Metal Panel Finishes: Manufacturer's standard form in which 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 the following:
 - a. Color fading more than 5 Hunter units when tested per ASTM D2244.
 - b. Chalking in excess of a No. 8 rating when tested per ASTM D4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 2. Finish Warranty Period: From date of Substantial/Material Completion, 40 years on chalk; 30 years on color change:
 3. Warranty Exclusions: Manufacturer will not warrant metal panel finishes damaged due to exposure to atmospheric pollutants including animal waste or other corrosive conditions. Manufacturer will not warrant labor by others.

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4. Manufacturer shall repair painted steel roofing or siding panels if the paint peels, cracks, checks, flakes or blisters to an extent that is apparent by ordinary outdoor visual observation when exposed to normal weather and atmospheric conditions. If manufacturer is not able to repair steel panels to satisfaction of Architect and Owner, manufacturer shall replace damaged steel panels.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis of Design: Energy Panel Structures, Inc.; www.epsbuildings.com.

2.2 PERFORMANCE CRITERIA

- A. Design Requirements:
 1. Design wood members per formulas published in AWC NDS.
 2. Design light meta-toothed connector plates and joint design in compliance with ANSI/TPI 1.
 3. Include unbalanced roof loads required by ASCE-7, current edition.

2.3 WOOD-PRESERVATIVE-TREATED LUMBER

- A. AWWA U1; Use Category UC3b for exterior construction not in contact with ground, and Use Category UC4a for items in contact with ground.
 1. Acceptable to authorities having jurisdiction and containing no arsenic or chromium. Do not use inorganic boron (SBX) for sill plates.
 2. For exposed items indicated to receive stained or natural finish, use chemical formulations that do not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.
- B. Maximum moisture content of 19 percent or per appropriate grading rules. Do not use material that is warped or does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of inspection agency approved by ALSC Board of Review.
- D. Application: Treat items indicated on Drawings, and the following:
 1. Laminated columns.
 2. Baseboards.
 3. Hold down blocks.

2.4 MATERIALS - WOOD

- A. Laminated Columns: Factory-fabricated from minimum 3 ply 2 inch by 6 inch #1 or better southern yellow pine.
 1. Columns to 20 Feet Lengths: Full-length (unspliced) nail laminated plies. Provide middle ply with short truss support block.

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2. Columns over 20 Feet Lengths: Spliced laminated plies per approved Shop Drawings and manufacturer's design.
 3. Preservative-Treatment: Treat portions of columns designed to be in contact with ground to net retention of 0.60 pounds per cubic foot of CCA per AWWA U1 requirements.
- B. Wood Trusses: Factory-fabricated of surfaced lumber.
1. Lumber:
 - a. Top and Bottoms Chords: No. 1 or better Southern yellow pine or comparable Spruce- pine-fir.
 - b. Webs: No. 2 or better Southern yellow pine or SPF.
 2. Metal Connector Plates: Fabricated from ASTM A653/A653M; Structural Steel (SS), high-strength low-alloy steel Type A (HSLAS Type A); G60 hot-dip galvanizing coating designation.
 - a. Plate Thicknesses: 0.036 inch and 0.0556 inch thick.
- C. Baseboards: 2 inch by 8 inch No. 2 or better Southern yellow pine, tongue-and-groove.
1. Treat baseboards for ground contact conditions. per AWWA U1 requirements. Preservative shall penetrate 100 percent of sapwood.
- D. Wall Girts: 2 inch by 6 inch girts, No. 1 or better Southern yellow pine.
- E. Purlins and Truss Ties: 2 inch by 4 inch laid on edge, MSR SPF 1650.
1. Purlins may be installed over top chord of truss, flat, or in purling hangers. Where purlins and truss ties are set in hangers, provide 2 inch by 6 inch laid on edge, MSR SPF 1650 or No. 1 or better Southern yellow pine.
- F. Overhang Framing: Fabricated rafter frames.
1. Provide factory beveled fascia boards, 2 inch by 6 inch Spruce-pine-fir, No. 2.
- G. Wind Bracing:
1. 2 inch by 6 inch, No. 2 or better Spruce-pine-fir from end wall column to first truss back.
 2. 2 inch by 4 inch diagonal in roofline bracing as required by design.
- H. Framing Around Openings:
1. Provide 2 inch by 6 inch/2 inch by 4 inch No. 2 around door, window, and overhead sectional door openings.
- I. Headers: Provide built-up No. 1 or better Southern yellow pine headers as required to meet loading designs.
- J. Incidental Framing: No.2 or better 2 inch by 4 inch.

2.5 MATERIALS – PREFINISHED MATERIALS

- A. General: Factory-formed metal panels, roll-formed in manufacturer's facility, designed to be field assembled by lapping side edges of adjacent panels and mechanically attaching panels to supports using exposed fasteners in side laps. Include accessories required for weathertight installation.
- B. Exposed-fastener metal roof and wall panels, formed with raised ribs and recesses.

WENDEL
SUNY ERIE COMMUNITY COLLEGE
SPORTS PLAYING FIELD PROJECT PHASE 1
WENDEL PROJECT #: 279806
ECDPW PROJECT #: 2023-956-01 ECCN Sports Fields

1. Material: Zinc-coated (galvanized) steel sheet, 0.0125 inch nominal thickness.
 - a. Exterior Finish: Siliconized polyester.
 - b. Color: Selected by Architect from manufacturer's full range.
 2. Rib Spacing: 2 major ribs at 9 inches on center. 2 minor ribs at 3 inches on center between major ribs.
 3. Panel Coverage: 36 inches.
 4. Panel Height: 3/4 inch.
- C. Wainscoting: 36 inch high accent feature from at base of building, consisting of the following material:
1. Steel panel matching specified wall panels.
 2. Concrete Siding Units: Provide concrete wainscot manufacturer's recommended materials for a complete wainscot system.
 - a. Basis-of-Design Product:
 - 1) Alliance Concrete Concepts: Moderra Block Wainscot.
 3. Mortarless Concrete Brick Units: Provide concrete wainscot manufacturer's recommended materials for a complete wainscot system.
 - a. Basis-of-Design Product:
 - 1) Nova Brik MidAmerica: Novabrik Mortarless Brick Siding.
- D. Metal Trim: Match material and color of metal panels. Provide trim for corners, ridge lines, rakes, eaves, and panel bases.
1. Lengths: Minimum 10 feet .
 2. Trim, overhang facias, track covers, and slide door jambs available in building panel covers.
 3. Overhead Sectional Door and Slide Door Jamb Trim: Fabricated from 1 piece up to 10 feet in length.
- E. Soffits: Aluminum or steel, fully vented. Colors shall match roof and wall panel colors.
- F. Ridge Vent: Manufacturer's standard pre-engineered ridge cap or ridgelite, flashings, and eave and gable trim. Field-fabricate minor flashings as indicated on approved Shop Drawings.
1. Provide manufacturer's standard ridge vents as indicated on Drawings
 - a. Continuous Vented Ridge: 12 square inches per lineal foot.

2.6 RELATED MATERIALS

- A. Anti-Condensation Felt: Manufacturer's shop-applied, proprietary, self-adhered felt designed to trap condensation moisture and release moisture as humidity.
1. Acceptable Product: DripStop by Filc d.d.
- B. Walk Doors: Where indicated on Drawings, provide the following type of doors:
1. Steel or extruded aluminum frame and sash with electrostatically coated enamel paint finish and window manufacturer's standard single pane glass or insulated glass unit, and locking options based on Project requirements.
 - a. Acceptable Product:
 - 1) AJ Manufacturing: 7100 Series Commercial Post Frame Entry / Walk Doors.

- 2) AJ Manufacturing: 5100 Series Commercial Post Frame Entry / Walk Doors.
- C. Windows: Where indicated on Drawings, provide the following type of windows:
 - 1. Thermally insulated extruded aluminum frame and sash with electrostatically coated enamel paint finish and window manufacturer's standard insulated glass units.
 - a. Acceptable Products:
 - 1) AJ Manufacturing: Series 900 Window with EZ Fit Trim.
- D. Closure Strips: Closed cell, 2 psf density polyethylene foam, premolded to match configuration of panels.

2.7 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.
 - 1. Where trusses are exposed to weather, in ground contact, made from pressure-preservative treated wood, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A153/A153M.
 - 2. Exposed Fastener Heads: Match color of steel panel.
 - 3. Where steel panels or trim is attached to preservative-treated lumber, provide fasteners of unpainted Type 304 stainless steel.
- B. Nails, Brads, and Staples: ASTM F1667/F1667M.
 - 1. Framing Lumber: 10d, 16d and 60d ring shank nails.
 - 2. Machine Bolts: Minimum grade 1, A307.
 - 3. Minimum 1-1/2 inch No. 10 screw fasteners with EPDM sealing washers bearing on weather side of metal panels.
 - a. Match color of metal panels.

2.8 FABRICATION

- A. Shop-fabricate wood trusses in Truss Plate Institute (TPI) inspected plant.
- B. Cut truss members to accurate lengths, angles, and sizes to produce close-fitting joints.
- C. Fabricate metal connector plates to sizes, configurations, thicknesses, and anchorage details required to withstand design loads for types of joint designs indicated.
- D. Assemble truss members in design configuration indicated; use jigs or other means to ensure uniformity and accuracy of assembly with joints closely fitted to comply with tolerances in ANSI/TPI 1. Position members to produce design camber indicated.
 - 1. Fabricate wood trusses within manufacturing tolerances in ANSI/TPI 1.
- E. Connect truss members by metal connector plates located and securely embedded simultaneously in both sides of wood members by air or hydraulic press.

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 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. Verify that mechanical and electrical utilities are in correct position.
- D. Wall Panels: Install metal panels perpendicular to wall girt and purlin supports, aligned level and plumb. Anchor with fasteners at spacings recommended by manufacturer and design loads.
- E. Fasten vented ridges to structure as indicated on Drawings, maintaining manufacturer's minimum clear throat opening.
- F. Soffits: Install soffits to interlock with trim items at top of steel siding and at facias.
 - 1. Solid or optional vented soffit shall be used at end overhang.
 - 2. A combination of solid and perforated soffits shall be provided for balanced ventilation at side overhangs.
- G. Trim Items: Install trim items at base, wainscot transitions, corners, top of steel siding, facia, gables, and ridges using no less than 1 inch screw fasteners.
 - 1. Trim items shall be installed at the base, at any wainscot transition, corners, top of steel siding, fascias, gables and ridge using appropriate 1" screw fasteners.
- H. Closure Strips: Provide closure strips at top and bottom of roofing panels.

END OF SECTION

SECTION 260500 – COMMON WORK RESULTS FOR ELECTRICAL

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Examine all other Sections of the Specifications for requirements that affect work under this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting, or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

1.2 SUMMARY

- A. Section Includes:
 - 1. Electrical equipment coordination and installation.
 - 2. Common electrical installation requirements.

1.3 COORDINATION

- A. Coordinate arrangement, mounting, and support of electrical equipment:
 - 1. To allow maximum possible headroom unless specific mounting heights that reduce headroom are indicated.
 - 2. To provide for ease of disconnecting the equipment with minimum interference to other installations.
 - 3. To allow right of way for piping and conduit installed at required slope.
 - 4. So connecting raceways, cables, wireways, cable trays, and busways will be clear of obstructions and of the working and access space of other equipment.
- B. Coordinate installation of required supporting devices and set sleeves in cast-in-place concrete, masonry walls, and other structural components as they are constructed.

PART 2 - PRODUCTS – *Not Used*

PART 3 - EXECUTION

3.1 COMMON REQUIREMENTS FOR ELECTRICAL INSTALLATION

- A. Comply with NECA 1.
- B. Measure indicated mounting heights to bottom of unit for suspended items and to center of unit for wall-mounting items.
- C. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide maximum possible headroom consistent with these requirements.
- D. Equipment: Install to facilitate service, maintenance, and repair or replacement of components of both electrical equipment and other nearby installations. Connect in such a way as to facilitate future disconnecting with minimum interference with other items in the vicinity.
- E. Right of Way: Give to piping systems installed at a required slope.

3.2 FIRESTOPPING

- A. Apply firestopping to penetrations of fire-rated floor and wall assemblies for electrical installations to restore original fire-resistance rating of assembly. Firestopping materials must be approved for specific use.
- B. Penetrations in Fire-Resistance-Rated Walls: Provide penetration firestopping with ratings determined per ASTM E 814 or UL 1479, based on testing at a positive pressure differential of 0.01-inch wg (2.49 Pa).
 - 1. Fire-resistance-rated walls include fire walls, fire-barrier walls, smoke-barrier walls and fire partitions.
- C. F-Rating: Not less than the fire-resistance rating of constructions penetrated.
- D. Manufacturers:
 - 1. 3m
 - 2. Rockwool
 - 3. Tremco
 - 4. STI

END OF SECTION 260500

SECTION 260513 - MEDIUM-VOLTAGE CABLES

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 cables and related cable splices, terminations, and accessories for medium-voltage (2001 to 35,000 V) electrical distribution systems.

1.3 DEFINITIONS

- A. Jacket: A continuous nonmetallic outer covering for conductors or cables.
- B. NETA ATS: Acceptance Testing Specification.
- C. Sheath: A continuous metallic covering for conductors or cables.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of cable. Include splices and terminations for cables and cable accessories.
- B. Samples: 16-inch lengths for each type of cable specified.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For testing agency.
- B. Material Certificates: For each type of cable and accessory.
- C. Source quality-control reports.
- D. Field quality-control reports.

1.6 QUALITY ASSURANCE

- A. Installer: Engage a cable splicer, trained and certified by splice material manufacturer, to install, splice, and terminate medium-voltage cable.
- B. Testing Agency Qualifications: Member company of NETA or an NRTL.
 - 1. Testing Agency's Field Supervisor: Certified by NETA to supervise on-site testing.

1.7 FIELD CONDITIONS

- A. Interruption of Existing Electric Service: Do not interrupt electric service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electric service according to requirements indicated:
 - 1. Notify Construction Manager no fewer than five days in advance of proposed interruption of electric service.
 - 2. Do not proceed with interruption of electric service without Construction Manager's written permission.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide comparable product by one of the following:
 - 1. Cables:
 - a. Aetna Insulated Wire, Inc.; a Berkshire Hathaway company.
 - b. General Cable Technologies Corporation.
 - c. Kerite; a Marmon Wire & Cable/Berkshire Hathaway company.
 - d. Okonite Company (The).
 - e. Prysmian Cables & Systems.
 - f. Southwire Company.
 - 2. Cable Splicing and Terminating Products and Accessories:
 - a. Adalet; a Scott Fetzer company.
 - b. DSG-Canusa; a Shawcor company.
 - c. Engineered Products Company.
 - d. G&W Electric Company.
 - e. MP Husky.
 - f. RTE Components; Cooper Power Systems, Inc.
 - g. Thomas & Betts Corporation.

- h. Thomas & Betts Corporation/Elastimold.
- i. 3M; Electrical Markets Division.
- j. Tyco Electronics; Raychem Products.

- B. Source Limitations: Obtain cables and accessories from single source from single manufacturer.

2.2 SYSTEM DESCRIPTION

- 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. Comply with IEEE C2 and NFPA 70.

2.3 CABLES

- A. Cable Type: Type MV 105.
- B. Comply with UL 1072, AEIC CS8, ICEA S-93-639/NEMA WC 74, and ICEA S-97-682.
- C. Conductor: Copper
- D. Conductor Stranding: Compact round, concentric lay, Class B.
- E. Strand Filling: Conductor interstices are filled with impermeable compound.
- F. Conductor Insulation: Ethylene-propylene rubber.
 - 1. Voltage Rating: 15 kV.
 - 2. Insulation Thickness: 100 percent insulation level.
- G. Shielding: Copper tape, helically applied over semiconducting insulation shield.
- H. Shielding and Jacket: Corrugated copper drain wires embedded in extruded, chlorinated, polyethylene jacket.
- I. Three-Conductor Cable Assembly: Three insulated, shielded conductors cabled together with ground conductors.
 - 1. Circuit Identification: Color-coded tape (black, red, blue) under the metallic shielding.
- J. Cable Sheath: Interlocked aluminum applied over cable.
- K. Cable Jacket: Sunlight-resistant PVC.

2.4 CONNECTORS

- A. Comply with ANSI C119.4 for connectors between aluminum conductors or for connections between aluminum to copper conductors.
- B. Copper-Conductor Connectors: Copper barrel crimped connectors.

2.5 SOLID TERMINATIONS

- A. Multiconductor Cable Sheath Seals: Type recommended by seal manufacturer for type of cable and installation conditions, including orientation.
 - 1. Compound-filled, cast-metal-body, metal-clad cable terminator for metal-clad cable with external plastic jacket.
 - 2. Cold-shrink sheath seal kit with preformed sleeve openings sized for cable and insulated conductors.
 - 3. Heat-shrink sheath seal kit with phase- and ground-conductor rejacketing tubes, cable-end sealing boot, and sealing plugs for unused ground-wire openings in boot.
 - 4. Cast-epoxy-resin sheath seal kit with wraparound mold and packaged, two-part, epoxy-resin casting material.
- B. Shielded-Cable Terminations: Comply with the following classes of IEEE 48. Insulation class shall be equivalent to that of cable. Include shield ground strap for shielded cable terminations.
 - 1. Class 1 Terminations: Modular type, furnished as a kit, with stress-relief tube; multiple, molded-silicone-rubber, insulator modules; shield ground strap; and compression-type connector.
 - 2. Class 1 Terminations: Heat-shrink type with heat-shrink inner stress control and outer non-tracking tubes; multiple, molded, non-tracking skirt modules; and compression-type connector.
 - 3. Class 1 Terminations: Modular type, furnished as a kit, with stress-relief shield terminator; multiple-wet-process, porcelain, insulator modules; shield ground strap; and compression-type connector.
 - 4. Class 1 Terminations, Indoors: Kit with stress-relief tube, non-tracking insulator tube, shield ground strap, compression-type connector, and end seal.
 - 5. Class 2 Terminations, Indoors: Kit with stress-relief tube, non-tracking insulator tube, shield ground strap, and compression-type connector. Include silicone-rubber tape; cold-shrink-rubber sleeve; or heat-shrink, plastic-sleeve moisture seal for end of insulation whether or not supplied with kits.
 - 6. Class 3 Terminations: Kit with stress cone and compression-type connector.

2.6 SEPARABLE INSULATED CONNECTORS

- A. Description: Modular system, complying with IEEE 386, with disconnecting, single-pole, cable terminators and with matching, stationary, plug-in, dead-front terminals designed for cable voltage and for sealing against moisture.

- B. Terminations at Distribution Points: Modular type, consisting of terminators installed on cables and modular, dead-front, terminal junctions for interconnecting cables.
- C. Load-Break Cable Terminators: Elbow-type units with 200-A-load make/break and continuous-current rating; coordinated with insulation diameter, conductor size, and material of cable being terminated. Include test point on terminator body that is capacitance coupled.
- D. Dead-Break Cable Terminators: Elbow-type unit with 600-A continuous-current rating; designed for de-energized disconnecting and connecting; coordinated with insulation diameter, conductor size, and material of cable being terminated. Include test point on terminator body that is capacitance coupled.
- E. Dead-Front Terminal Junctions: Modular bracket-mounted groups of dead-front stationary terminals that mate and match with above cable terminators. Two-, three-, or four-terminal units as indicated, with fully rated, insulated, watertight conductor connection between terminals and complete with grounding lug, manufacturer's standard accessory stands, stainless-steel mounting brackets, and attaching hardware.
 - 1. Protective Cap: Insulating, electrostatic-shielding, water-sealing cap with drain wire.
 - 2. Portable Feed-Through Accessory: Two-terminal, dead-front junction arranged for removable mounting on accessory stand of stationary terminal junction.
 - 3. Grounding Kit: Jumpered elbows, portable feed-through accessory units, protective caps, test rods suitable for concurrently grounding three phases of feeders, and carrying case.
 - 4. Standoff Insulator: Portable, single dead-front terminal for removable mounting on accessory stand of stationary terminal junction. Insulators suitable for fully insulated isolation of energized cable-elbow terminator.
- F. Test-Point Fault Indicators: Applicable current-trip ratings and arranged for installation in test points of load-break separable connectors, and complete with self-resetting indicators capable of being installed with shotgun hot stick and tested with test tool.
- G. Tool Set: Shotgun hot stick with energized terminal indicator, fault-indicator test tool, and carrying case.

2.7 DEADBREAK JUNCTION (TEMPORARY POWER)

- A. Basis-of-Design Product: Subject to compliance with requirements, provide comparable product by one of the following:
 - 1. Eaton Cooper Power
 - 2. Adalet
 - 3. Hubbell Power Systems
- B. 600 A, 15/25 kV Class deadbreak junction provides three interfaces bused together and encapsulated in a precision-molded, peroxide-cured EPDM insulated rubber body with a EPDM peroxide-cured semi-conductive outer shield. Deadbreak junctions shall be used to perform temporary splices, and facilitate switchgear change-outs.

- C. Used deadbreak connectors meeting the requirements of IEEE Std 386™-2006 standard—“Separable Insulated Connector Systems”.
- D. Mate with a comparably rated product so the junction provides a fully shielded, threaded connection for deadbreak operation. Provide deadbreak junction with stainless steel adjustable brackets for mounting at various operating angles, or with stainless steel “U” straps for direct wall mounting.

2.8 SPLICE KITS

- A. Splice Kits: Comply with IEEE 404; type as recommended by cable or splicing kit manufacturer for the application.
- B. Splicing Products: As recommended, in writing, by splicing kit manufacturer for specific sizes, materials, ratings, and configurations of cable conductors. Include all components required for complete splice, with detailed instructions.
 - 1. Combination tape and cold-shrink-rubber sleeve kit with re-jacketing by cast-epoxy-resin encasement or other waterproof, abrasion-resistant material.
 - 2. Heat-shrink splicing kit of uniform, cross-section, polymeric construction with outer heat-shrink jacket.
 - 3. Premolded, cold-shrink-rubber, in-line splicing kit.
 - 4. Premolded, EPDM splicing body kit with cable joint sealed by interference fit of mating parts and cable.
 - 5. Separable multiway splice system with all components for the required splice configuration.

2.9 MEDIUM-VOLTAGE TAPES

- A. Ethylene/propylene rubber-based, 0.76-mm splicing tape, rated for 130 deg C operation. Minimum 3/4 inch wide.
- B. Silicone rubber-based, 12-mil self-fusing tape, rated for 130 deg C operation. Minimum 1-1/2 inches (38 mm) wide.
- C. Insulating-putty, 125-mil elastic filler tape. Minimum 1-1/2 inches wide.

2.10 ARC-PROOFING MATERIALS

- A. Tape for First Course on Metal Objects: 10-mil- thick, corrosion-protective, moisture-resistant, PVC pipe-wrapping tape.
- B. Arc-Proofing Tape: Fireproof tape, flexible, conformable, intumescent to 0.3 inch thick, and compatible with cable jacket.
- C. Glass-Cloth Tape: Pressure-sensitive adhesive type, 1 inch wide.

2.11 SOURCE QUALITY CONTROL

- A. Test and inspect cables according to ICEA S-97-682 before shipping.
- B. Test strand-filled cables for water-penetration resistance according to ICEA T-31-610, using a test pressure of 5 psig.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install cables according to IEEE 576.
- B. Proof conduits prior to conductor installation by passing a wire brush mandrel and then a rubber duct swab through the conduit. Separate the wire brush and the rubber swab by 48 to 72 inches on the pull rope.
 - 1. Wire Brush Mandrel: Consists of a length of brush approximately the size of the conduit inner diameter with stiff steel bristles and an eye on each end for attaching the pull ropes. If an obstruction is felt, pull the brush back and forth repeatedly to break up the obstruction.
 - 2. Rubber Duct Swab: Consists of a series of rubber discs approximately the size of the conduit inner diameter on a length of steel cable with an eye on each end for attaching the pull ropes. Pull the rubber duct swab through the duct to extract loose debris from the duct.
- C. Pull Conductors: Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
 - 1. Where necessary, use manufacturer-approved pulling compound or lubricant that does not deteriorate conductor or insulation.
 - 2. Use pulling means, including fish tape, cable, rope, and basket-weave cable grips, that do not damage cables and raceways. Do not use rope hitches for pulling attachment to cable.
 - 3. Use pull-in guides, cable feeders, and draw-in protectors as required to protect cables during installation.
 - 4. Do not pull cables with ends unsealed. Seal cable ends with rubber tape.
- D. Install exposed cables parallel and perpendicular to surfaces of exposed structural members and follow surface contours where possible.
- E. Support cables according to Section 260529 "Hangers and Supports for Electrical Systems."
- F. Install direct-buried cables on leveled and tamped bed of 3-inch- thick, clean sand. Separate cables crossing other cables or piping by a minimum of 2 inches of tamped earth, plus an additional 2 inches of sand. Install permanent markers at ends of cable runs, changes in direction, and buried splices.

- G. Install "buried-cable" warning tape 12 inches above cables.
- H. In manholes, handholes, pull boxes, junction boxes, and cable vaults, train cables around walls by the longest route from entry to exit; support cables at intervals adequate to prevent sag.
- I. Install sufficient cable length to remove cable ends under pulling grips. Remove length of conductor damaged during pulling.
- J. Install cable splices at pull points and elsewhere as indicated; use standard kits. Use dead-front separable watertight connectors in manholes and other locations subject to water infiltration.
- K. Install terminations at ends of conductors, and seal multi-conductor cable ends with standard kits.
- L. Install separable insulated-connector components as follows:
 - 1. Protective Cap: At each terminal junction, with one on each terminal to which no feeder is indicated to be connected.
 - 2. Portable Feed-Through Accessory: At each terminal junction, with one on each terminal.
 - 3. Standoff Insulator: At each terminal junction, with one on each terminal.
- M. Arc Proofing: Unless otherwise indicated, arc proof medium-voltage cable at locations not protected by conduit, cable tray, direct burial, or termination materials. In addition to arc-proofing tape manufacturer's written instructions, apply arc proofing as follows:
 - 1. Clean cable sheath.
 - 2. Wrap metallic cable components with 10- mil pipe-wrapping tape.
 - 3. Smooth surface contours with electrical insulation putty.
 - 4. Apply arc-proofing tape in one half-lapped layer with coated side toward cable.
 - 5. Band arc-proofing tape with two layers of 1-inch- wide half-lapped, adhesive, glass-cloth tape at each end of the arc-proof tape.
- N. Seal around cables passing through fire-rated elements according to Section 078413 "Penetration Firestopping."
- O. Install fault indicators on each phase where indicated.
- P. Ground shields of shielded cable at terminations, splices, and separable insulated connectors. Ground metal bodies of terminators, splices, cable and separable insulated-connector fittings, and hardware.
- Q. Ground shields of shielded cable at one point only. Maintain shield continuity and connections to metal connection hardware at all connection points.
- R. Identify cables according to Section 260553 "Identification for Electrical Systems." Identify phase and circuit number of each conductor at each splice, termination, pull point, and junction box. Arrange identification so that it is unnecessary to move the cable or conductor to read the identification.

3.2 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
- B. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.
- C. Perform the following tests and inspections:
 - 1. Perform each visual and mechanical inspection and electrical test stated in NETA ATS. Certify compliance with test parameters.
 - 2. After installing medium-voltage cables and before electrical circuitry has been energized, test for compliance with requirements.
 - 3. Perform direct-current High Potential test of each new conductor according to NETA ATS, Ch. 7.3.3. Do not exceed cable manufacturer's recommended maximum test voltage.
 - 4. Perform Partial Discharge test of each new conductor according to NETA ATS, Ch. 7.3.3 and to test equipment manufacturer's recommendations.
 - 5. Perform Dissipation Factor test of each new conductor according to NETA ATS, Ch. 7.3.3 and to test equipment manufacturer's recommendations.
- D. Medium-voltage cables will be considered defective if they do not pass tests and inspections.
- E. Prepare test and inspection reports.

END OF SECTION 260513

SECTION 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Examine all other Sections of the Specifications for requirements that affect work under this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting, or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Building wires and cables rated 600 V and less.
 - 2. Connectors, splices, and terminations rated 600 V and less.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Field quality-control test reports.

1.4 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 CONDUCTORS AND CABLES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. General Cable Corporation.
 2. Senator Wire & Cable Company.
 3. Southwire Company.
- B. Copper Conductors: Comply with NEMA WC 70.
- C. Conductor Insulation: Comply with NEMA WC 70 for Types THHN-THWN.
- D. Two-hour Fire Rated: Comply with UL2196 Type RHW

2.2 CONNECTORS AND SPLICES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Hubbell Power Systems, Inc.
 2. O-Z/Gedney; EGS Electrical Group LLC.
 3. 3M; Electrical Products Division.
- B. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

- A. Feeders: Copper; solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
- B. Feeders: Copper for feeders smaller than No. 4 AWG; copper or aluminum for feeders No. 4 AWG and larger. Conductors shall be solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
- C. Branch Circuits: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
- D. Branch Circuits: Copper. Solid for No. 12 AWG and smaller; stranded for No. 10 AWG and larger.
- E. VFC Output Circuits Cable: Extra-flexible stranded for all sizes.
- F. Power-Limited Fire Alarm and Control: Solid for No. 12 AWG and smaller.

3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

- A. Service Entrance and underground: Type XHHW-2, single conductors in raceway.
- B. Exposed Feeders: Type THHN/THWN-2, single conductors in raceway.
- C. Feeders Concealed in Ceilings, Walls, Partitions, and Crawlspace: Type THHN/THWN-2, single conductors in raceway.
- D. Feeders Concealed in Concrete, below Slabs-on-Grade: Type THHN/THWN-2, single conductors in raceway.
- E. Exposed Branch Circuits, Including in Crawlspace: Type THHN/THWN-2, single conductors in raceway.
- F. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Metal-clad cable, Type MC.
- G. Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN/THWN-2, single conductors in raceway.
- H. Cord Drops and Portable Appliance Connections: Type SO, hard service cord with stainless-steel, wire-mesh, strain relief device at terminations to suit application. Feeders in conduit outdoors: Type XHHW.
- I. Fire Rate Cable: Type RHW
 - 1. Use Cable for: Fire pump feeders (NEC 695), emergency feeders (NEC 700 and 708)

3.3 INSTALLATION OF CONDUCTORS AND CABLES

- A. Conceal cables in finished walls, ceilings, and floors unless otherwise indicated.
- B. Complete raceway installation between conductor and cable termination points according to Section 260533 "Raceways and Boxes for Electrical Systems" prior to pulling conductors and cables.
- C. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
- D. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.
- E. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.
- F. Support cables according to Section 260529 "Hangers and Supports for Electrical Systems."

3.4 CONNECTIONS

- A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.
- B. Wiring at Outlets: Install conductor at each outlet, with at least 6 inches (150 mm).

3.5 FIRESTOPPING

- A. Refer to 260500.

3.6 FIELD QUALITY CONTROL

- A. Perform tests and inspections and prepare test reports.
- B. Tests and Inspections:
 - 1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
- C. Test Reports: Prepare a written report to record the following:
 - 1. Test procedures used.
 - 2. Test results that comply with requirements.
 - 3. Test results that do not comply with requirements and corrective action taken to achieve compliance with requirements.
- D. Remove and replace malfunctioning units and retest as specified above.

3.7 INSTALLATION OF FIRE-ALARM WIRING

- A. Comply with NECA 1 and NFPA 72.
- B. Wiring Method: Install wiring in metal pathway according to Section 270528.29 "Hangers and Supports for Communications Systems."
 - 1. Install plenum cable in environmental airspaces, including plenum ceilings.
 - 2. Fire-alarm circuits and equipment control wiring associated with fire-alarm system shall be installed in a dedicated pathway system. This system shall not be used for any other wire or cable.
- C. Wiring within Enclosures: Separate power-limited and non-power-limited conductors as recommended by manufacturer. Install conductors parallel with or at right angles to sides and back of the enclosure. Bundle, lace, and train conductors to terminal points with no excess. Connect conductors that are terminated, spliced, or interrupted in any enclosure associated with fire-alarm system to terminal blocks. Mark each terminal according to system's wiring

diagrams. Make all connections with approved crimp-on terminal spade lugs, pressure-type terminal blocks, or plug connectors.

- D. Cable Taps: Use numbered terminal strips in junction, pull, and outlet boxes; cabinets; or equipment enclosures where circuit connections are made.
- E. Color-Coding: Color-code fire-alarm conductors differently from the normal building power wiring. Use one color-code for alarm circuit wiring and another for supervisory circuits. Color-code audible alarm-indicating circuits differently from alarm-initiating circuits. Use different colors for visible alarm-indicating devices. Paint fire-alarm system junction boxes and covers red.

END OF SECTION 260519

SECTION 260526 - GROUNDING AND BONDING FOR ELECTRICAL 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.
- B. Examine all other Sections of the Specifications for requirements that affect work under this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting, or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

1.2 SUMMARY

- A. Section includes grounding and bonding systems and equipment.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. As-Built Data: Plans showing dimensioned as-built locations of grounding features specified in "Field Quality Control" Article, including the following:
 - 1. Test wells.
 - 2. Ground rods.
 - 3. Ground rings.
 - 4. Grounding arrangements and connections for separately derived systems.

1.4 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Member company of NETA or an NRTL.
 - 1. Testing Agency's Field Supervisor: Certified by NETA to supervise on-site testing.
- B. 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.
- C. Comply with UL 467 for grounding and bonding materials and equipment.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- 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:

2.2 SYSTEM DESCRIPTION

- 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. Comply with UL 467 for grounding and bonding materials and equipment.

2.3 CONDUCTORS

- A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.

2.4 CONNECTORS

- A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.

2.5 GROUNDING ELECTRODES

- A. Ground Rods: Copper-clad steel 3/4 inch diameter by 10 feet in length.

PART 3 - EXECUTION

3.1 APPLICATIONS

- A. Conductors: Install stranded conductors for all ground wires.

3.2 EQUIPMENT GROUNDING

- A. Install insulated equipment grounding conductors with all feeders and branch circuits.
- B. Install insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70:

1. Feeders and branch circuits.
2. Lighting circuits.
3. Receptacle circuits.
4. Single-phase motor and appliance branch circuits.
5. Three-phase motor and appliance branch circuits.

3.3 INSTALLATION

- A. Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

3.4 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
- B. Tests and Inspections:
 1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
 2. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with a calibrated torque wrench according to manufacturer's written instructions.
- C. Prepare test and inspection reports.
- D. Report measured ground resistances that exceed the following values:
 1. Power and Lighting Equipment or System with Capacity of 500 kVA and Less: 5 ohms.
- E. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Architect promptly and include recommendations to reduce ground resistance.

END OF SECTION 260526

SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL 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.
- B. Examine all other Sections of the Specifications for requirements that affect work under this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting, or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Hangers and supports for electrical equipment and systems.

1.3 DEFINITIONS

- A. EMT: Electrical metallic tubing.
- B. RMC: Rigid metal conduit.

1.4 ACTION SUBMITTALS

- A. Product Data: For the following:
 - 1. Steel slotted support systems.
 - 2. Nonmetallic slotted support systems.

1.5 INFORMATIONAL SUBMITTALS

- A. Welding certificates.

1.6 QUALITY ASSURANCE

- A. Welding: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

- A. Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Allied Tube & Conduit.
 - b. Cooper B-Line, Inc.; a division of Cooper Industries.
 - c. ERICO International Corporation.
 - d. Thomas & Betts Corporation.
 - e. Unistrut; Tyco International, Ltd.
 - 2. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
- B. Raceway and Cable Supports: As described in NECA 1 and NECA 101.
- C. Conduit and Cable Support Devices: Steel and malleable-iron hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.
- D. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M, steel plates, shapes, and bars; black and galvanized.
- E. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:
 - 1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
 - 2. Mechanical-Expansion Anchors: Insert-wedge-type, stainless steel, for use in hardened portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and building materials in which used.
 - 3. Concrete Inserts: Steel or malleable-iron, slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58.
 - 4. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.

5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.
6. Toggle Bolts: All-steel springhead type.
7. Hanger Rods: Threaded steel.

2.2 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

- A. Description: Welded or bolted, structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.

PART 3 - EXECUTION

3.1 APPLICATION

- A. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems except if requirements in this Section are stricter.
- B. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT, IMC, and RMC as required by NFPA 70. Minimum rod size shall be 1/4 inch in diameter.
- C. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted or other support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.
 1. Secure raceways and cables to these supports with two-bolt conduit clamps.
- D. Spring-steel clamps designed for supporting single conduits without bolts may be used for 1-1/2-inch and smaller raceways serving branch circuits and communication systems above suspended ceilings and for fastening raceways to trapeze supports.

3.2 SUPPORT INSTALLATION

- A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this Article.
- B. Raceway Support Methods: In addition to methods described in NECA 1, EMT may be supported by openings through structure members, as permitted in NFPA 70.
- C. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb.

- D. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:
 - 1. To New Concrete: Bolt to concrete inserts.
 - 2. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
 - 3. To Existing Concrete: Expansion anchor fasteners.
 - 4. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches (100 mm) thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches (100 mm) thick.
 - 5. To Light Steel: Sheet metal screws.
 - 6. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate by means that meet seismic-restraint strength and anchorage requirements.
- E. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

3.3 INSTALLATION OF FABRICATED METAL SUPPORTS

- A. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.
- B. Field Welding: Comply with AWS D1.1/D1.1M.

3.4 PAINTING

- A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
 - 1. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils .
- B. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

END OF SECTION 260529

SECTION 260533 - RACEWAYS AND BOXES FOR ELECTRICAL 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. Metal conduits, tubing, and fittings.
 - 2. Nonmetal conduits, tubing, and fittings.
 - 3. Metal wireways and auxiliary gutters.
 - 4. Nonmetal wireways and auxiliary gutters.
 - 5. Surface raceways.
 - 6. Boxes, enclosures, and cabinets.
 - 7. Handholes and boxes for exterior underground cabling.

1.3 DEFINITIONS

- A. GRC: Galvanized rigid steel conduit.
- B. EMT: Electrical Metallic Tubing.
- C. RNC: Rigid Nonmetallic Conduit.

1.4 ACTION SUBMITTALS

- A. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.

PART 2 - PRODUCTS

2.1 METAL CONDUITS, TUBING, AND FITTINGS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Alflex Inc.
 2. Allied Tube & Conduit; a Tyco International Ltd. Co.
 3. O-Z Gedney; a unit of General Signal.
 4. Wheatland Tube Company.
- B. Listing and Labeling: Metal conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. GRC: Comply with ANSI C80.1 and UL 6.
- D. EMT: Comply with ANSI C80.3 and UL 797.
- E. FMC: Comply with UL 1; zinc-coated steel.
- F. LFMC: Flexible steel conduit with PVC jacket and complying with UL 360.
- G. Fittings for Metal Conduit: Comply with NEMA FB 1 and UL 514B.
1. Fittings for EMT:
 - a. Material: Steel.
 - b. Type: Setscrew or compression.
 - c. Expansion Fittings: PVC or steel to match conduit type, complying with UL 651, rated for environmental conditions where installed, and including flexible external bonding jumper.
 2. Coating for Fittings for PVC-Coated Conduit: Minimum thickness of 0.040 inch, with overlapping sleeves protecting threaded joints.

2.2 NONMETALLIC CONDUITS, TUBING, AND FITTINGS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. AFC Cable Systems
 2. Arnco
 3. CANTEX
 4. RACO
 - Alflex Inc.
 5. Allied Tube & Conduit; a Tyco International Ltd. Co.
 6. O-Z Gedney; a unit of General Signal.
 7. Wheatland Tube Company
- B. Listing and Labeling: Nonmetallic conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

- C. RNC: Type EPC-40-PVC, complying with NEMA TC 2 and UL 651 unless otherwise indicated.
- D. LFNC: Comply with UL 1660.
- E. Fittings for RNC: Comply with NEMA TC 3; match to conduit or tubing type and material.
- F. Fittings for LFNC: Comply with UL 514B.

2.3 SURFACE RACEWAYS

- A. Listing and Labeling: Surface raceways and tele-power poles shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.4 BOXES, ENCLOSURES, AND CABINETS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Erickson Electrical Equipment Company.
 - 2. Hoffman.
 - 3. Hubbell Incorporated; Killark Electric Manufacturing Co. Division.
 - 4. O-Z/Gedney; a unit of General Signal.
 - 5. RACO; a Hubbell Company.
 - 6. Robroy Industries, Inc.; Enclosure Division.
 - 7. Spring City Electrical Manufacturing Company.
 - 8. Thomas & Betts Corporation
- B. General Requirements for Boxes, Enclosures, and Cabinets: Boxes, enclosures, and cabinets installed in wet locations shall be listed for use in wet locations.
- C. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A.
- D. Cast-Metal Outlet and Device Boxes: Comply with NEMA FB 1, ferrous alloy or aluminum, Type FD, with gasketed cover.
- E. Nonmetallic Outlet and Device Boxes: Comply with NEMA OS 2 and UL 514C.
- F. Metal Floor Boxes:
 - 1. Material: Cast metal or sheet metal.
 - 2. Type: Fully adjustable.
 - 3. Shape: Rectangular or otherwise indicated.
 - 4. Listing and Labeling: Metal floor boxes shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

- G. Luminaire Outlet Boxes: Nonadjustable, designed for attachment of luminaire weighing 50 lb. Outlet boxes designed for attachment of luminaires weighing more than 50 lb shall be listed and marked for the maximum allowable weight.
- H. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.
- I. Cast-Metal Access, Pull, and Junction Boxes: Comply with NEMA FB 1 and UL 1773, galvanized, cast iron with gasketed cover.
- J. Box extensions used to accommodate new building finishes shall be of same material as recessed box.
- K. Device Box Dimensions: 4 inches square by 2-1/8 inches deep.
- L. Gangable boxes are prohibited.
- M. Hinged-Cover Enclosures: Comply with UL 50 and NEMA 250, Type 3R with continuous-hinge cover with flush latch unless otherwise indicated.
 - 1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.
 - 2. Nonmetallic Enclosures: Fiberglass.
 - 3. Interior Panels: Steel; all sides finished with manufacturer's standard enamel.
- N. Cabinets:
 - 1. NEMA 250, Type 1 or Type 3R galvanized-steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.
 - 2. Hinged door in front cover with flush latch and concealed hinge.
 - 3. Key latch to match panelboards.
 - 4. Metal barriers to separate wiring of different systems and voltage.
 - 5. Accessory feet where required for freestanding equipment.
 - 6. Nonmetallic cabinets shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.5 HANDHOLES AND BOXES FOR EXTERIOR UNDERGROUND WIRING

- A. General Requirements for Handholes and Boxes:
 - 1. Boxes and handholes for use in underground systems shall be designed and identified as defined in NFPA 70, for intended location and application.
 - 2. Boxes installed in wet areas shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Armorcast Products Company
 - 2. OldErickson Electrical Equipment Company.

3. Hoffman.
4. Hubbell Incorporated; Killark Electric Manufacturing Co. Division.
5. O-Z/Gedney; a unit of General Signal.
6. RACO; a Hubbell Company.
7. Robroy Industries, Inc.; Enclosure Division.
8. Spring City Electrical Manufacturing Company.

C. Thomas & Betts Corporation

D. Polymer-Concrete Handholes and Boxes with Polymer-Concrete Cover: Molded of sand and aggregate, bound together with polymer resin, and reinforced with steel, fiberglass, or a combination of the two.

1. Standard: Comply with SCTE 77.
2. Configuration: Designed for flush burial with open bottom unless otherwise indicated.
3. Cover: Weatherproof, secured by tamper-resistant locking devices and having structural load rating consistent with enclosure and handhole location.
4. Cover Finish: Nonskid finish shall have a minimum coefficient of friction of 0.50.
5. Cover Legend: Molded lettering, "ELECTRIC" or "COMMUNICATIONS".
6. Conduit Entrance Provisions: Conduit-terminating fittings shall mate with entering ducts for secure, fixed installation in enclosure wall.
7. Handholes 24 Inches Wide by 24 Inches Long and Larger: Have inserts for cable racks and pulling-in irons installed before concrete is poured.

2.6 SOURCE QUALITY CONTROL FOR UNDERGROUND ENCLOSURES

A. Handhole and Pull-Box Prototype Test: Test prototypes of handholes and boxes for compliance with SCTE 77. Strength tests shall be for specified tier ratings of products supplied.

1. Tests of materials shall be performed by an independent testing agency.
2. Strength tests of complete boxes and covers shall be by either an independent testing agency or manufacturer. A qualified registered professional engineer shall certify tests by manufacturer.
3. Testing machine pressure gages shall have current calibration certification complying with ISO 9000 and ISO 10012 and traceable to NIST standards.

PART 3 - EXECUTION

3.1 RACEWAY APPLICATION

A. Outdoors: Apply raceway products as specified below unless otherwise indicated:

1. Exposed Conduit: RNC, Type EPC-40-PVC.
2. Concealed Conduit, Aboveground: GRC.
3. Underground Conduit: RNC, Type EPC-40-PVC, direct buried.

4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFNC.
 5. Boxes and Enclosures, Aboveground: NEMA 250, Type 3R
- B. Indoors: Apply raceway products as specified below unless otherwise indicated:
1. Exposed, Not Subject to Physical Damage: EMT.
 2. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.
 3. Boxes and Enclosures: NEMA 250, Type 1.
- C. Minimum Raceway Size: 3/4-inch trade size.
- D. Raceway Fittings: Compatible with raceways and suitable for use and location.
1. Rigid Steel Conduit: Use threaded rigid steel conduit fittings unless otherwise indicated. Comply with NEMA FB 2.10.
 2. EMT: Use setscrew, steel fittings. Comply with NEMA FB 2.10.
 3. Flexible Conduit: Use only fittings listed for use with flexible conduit. Comply with NEMA FB 2.20.
- E. Do not install aluminum conduits.
- F. Install surface raceways only where indicated on Drawings.

3.2 INSTALLATION

- A. Comply with NECA 1 and NECA 101 for installation requirements except where requirements on Drawings or in this article are stricter. Comply with NECA 102 for aluminum conduits. Comply with NFPA 70 limitations for types of raceways allowed in specific occupancies and number of floors.
- B. Keep raceways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.
- C. Complete raceway installation before starting conductor installation.
- D. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems" for hangers and supports.
- E. Arrange stub-ups so curved portions of bends are not visible above finished slab.
- F. Install no more than the equivalent of three 90-degree bends in any conduit run except for control wiring conduits, for which fewer bends are allowed. Support within 12 inches of changes in direction.

- G. Conceal conduit and EMT within finished walls, ceilings, and floors unless otherwise indicated. Install conduits parallel or perpendicular to building lines.
- H. Support conduit within 12 inches of enclosures to which attached.
- I. Raceways Embedded in Slabs:
 - 1. Run conduit larger than 1-inch trade size, parallel or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support. Secure raceways to reinforcement at maximum 10-foot intervals.
 - 2. Arrange raceways to cross building expansion joints at right angles with expansion fittings.
 - 3. Arrange raceways to keep a minimum of 3 inch of concrete cover in all directions.
 - 4. Do not embed threadless fittings in concrete unless specifically approved by Architect for each specific location.
 - 5. Change from ENT to GRC before rising above floor.
- J. Stub-ups to Above Recessed Ceilings:
 - 1. Use EMT, IMC, or RMC for raceways.
 - 2. Use a conduit bushing or insulated fitting to terminate stub-ups not terminated in hubs or in an enclosure.
- K. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.
- L. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors including conductors smaller than No. 4 AWG.
- M. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to 1-1/4-inch trade size and insulated throat metal bushings on 1-1/2-inch trade size and larger conduits terminated with locknuts. Install insulated throat metal grounding bushings on service conduits.
- N. Install raceways square to the enclosure and terminate at enclosures with locknuts. Install locknuts hand tight plus 1/4 turn more.
- O. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure to assure a continuous ground path.
- P. Cut conduit perpendicular to the length. For conduits 2-inch trade size and larger, use roll cutter or a guide to make cut straight and perpendicular to the length.
- Q. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 12 inches of slack at each end of pull wire. Cap underground raceways designated as spare above grade alongside raceways in use.
- R. Surface Raceways:

1. Install surface raceway with a minimum 2-inch radius control at bend points.
 2. Secure surface raceway with screws or other anchor-type devices at intervals not exceeding 48 inches and with no less than two supports per straight raceway section. Support surface raceway according to manufacturer's written instructions. Tape and glue are not acceptable support methods.
- S. Flexible Conduit Connections: Comply with NEMA RV 3. Use a maximum of 72 inches of flexible conduit for recessed luminaires, equipment subject to vibration, noise transmission, or movement; and for transformers and motors.
1. Use LFMC in damp or wet locations subject to severe physical damage.
 2. Use LFMC or LFNC in damp or wet locations not subject to severe physical damage.
- T. Install raceway sealing fittings at accessible locations according to NFPA 70 and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings according to NFPA 70.
- U. Install devices to seal raceway interiors at accessible locations. Locate seals so no fittings or boxes are between the seal and the following changes of environments. Seal the interior of all raceways at the following points:
1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
 2. Where an underground service raceway enters a building or structure.
 3. Where otherwise required by NFPA 70.
- V. Comply with manufacturer's written instructions for solvent welding RNC and fittings.
- W. Expansion-Joint Fittings:
1. Install in each run of aboveground RNC that is located where environmental temperature change may exceed 30 deg F and that has straight-run length that exceeds 25 feet. Install in each run of aboveground RMC and EMT conduit that is located where environmental temperature change may exceed 100 deg F and that has straight-run length that exceeds 100 feet.
 2. Install type and quantity of fittings that accommodate temperature change listed for each of the following locations:
 - a. Outdoor Locations Not Exposed to Direct Sunlight: 125 deg F temperature change.
 - b. Outdoor Locations Exposed to Direct Sunlight: 155 deg F temperature change.
 - c. Indoor Spaces Connected with Outdoors without Physical Separation: 125 deg F temperature change.
 3. Install fitting(s) that provide expansion and contraction for at least 0.00041 inch per foot of length of straight run per deg of temperature change for PVC conduits. Install fitting(s) that provide expansion and contraction for at least 0.000078 inch per foot of length of straight run per deg F of temperature change for metal conduits.

4. Install expansion fittings at all locations where conduits cross building or structure expansion joints.
 5. Install each expansion-joint fitting with position, mounting, and piston setting selected according to manufacturer's written instructions for conditions at specific location at time of installation. Install conduit supports to allow for expansion movement.
- X. Flexible Conduit Connections: Comply with NEMA RV 3. Use a maximum of 72 inches of flexible conduit for recessed and semirecessed luminaires, equipment subject to vibration, noise transmission, or movement; and for transformers and motors.
1. Use LFMC in damp or wet locations subject to severe physical damage.
 2. Use LFMC or LFNC in damp or wet locations not subject to severe physical damage.
- Y. Mount boxes at heights indicated on Drawings. If mounting heights of boxes are not individually indicated, give priority to ADA requirements. Install boxes with height measured to center of box unless otherwise indicated.
- Z. Recessed Boxes in Masonry Walls: Saw-cut opening for box in center of cell of masonry block, and install box flush with surface of wall. Prepare block surfaces to provide a flat surface for a rain tight connection between box and cover plate or supported equipment and box.
- AA. Horizontally separate boxes mounted on opposite sides of walls so they are not in the same vertical channel.
- BB. Locate boxes so that cover or plate will not span different building finishes.
- CC. Support boxes of three gangs or more from more than one side by spanning two framing members or mounting on brackets specifically designed for the purpose.
- DD. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.
- EE. Set metal floor boxes level and flush with finished floor surface.
- FF. Set nonmetallic floor boxes level. Trim after installation to fit flush with finished floor surface.

3.3 INSTALLATION OF UNDERGROUND CONDUIT

- A. Direct-Buried Conduit:
1. Excavate trench bottom to provide firm and uniform support for conduit. Prepare trench bottom as specified in Section 312000 "Earth Moving" for pipe less than 6 inches in nominal diameter.
 2. Install backfill as specified in Section 312000 "Earth Moving."
 3. After installing conduit, backfill and compact. Start at tie-in point, and work toward end of conduit run, leaving conduit at end of run free to move with expansion and contraction as temperature changes during this process. Firmly hand tamp backfill around conduit to provide maximum supporting strength. After placing controlled backfill to within 12

- inches of finished grade, make final conduit connection at end of run and complete backfilling with normal compaction as specified in Section 312000 "Earth Moving."
4. Install manufactured duct elbows for stub-ups at poles and equipment and at building entrances through floor unless otherwise indicated. Encase elbows for stub-up ducts throughout length of elbow.
 5. Install manufactured rigid steel conduit elbows for stub-ups at poles and equipment and at building entrances through floor.
 - a. Couple steel conduits to ducts with adapters designed for this purpose, and encase coupling with 3 inches of concrete for a minimum of 12 inches on each side of the coupling.
 - b. For stub-ups at equipment mounted on outdoor concrete bases and where conduits penetrate building foundations, extend steel conduit horizontally a minimum of 60 inches from edge of foundation or equipment base. Install insulated grounding bushings on terminations at equipment.
 6. Underground Warning Tape: Comply with requirements in Section 260553 "Identification for Electrical Systems."

3.4 INSTALLATION OF UNDERGROUND HANDHOLES AND BOXES

- A. Install handholes and boxes level and plumb and with orientation and depth coordinated with connecting conduits to minimize bends and deflections required for proper entrances.
- B. Unless otherwise indicated, support units on a level bed of crushed stone or gravel, graded from 1/2-inch sieve to No. 4 sieve and compacted to same density as adjacent undisturbed earth.
- C. Elevation: In paved areas, set so cover surface will be flush with finished grade. Set covers of other enclosures 1 inch above finished grade.
- D. Install handholes with bottom below frost line, below grade.
- E. Install removable hardware, including pulling eyes, cable stanchions, cable arms, and insulators, as required for installation and support of cables and conductors and as indicated. Select arm lengths to be long enough to provide spare space for future cables but short enough to preserve adequate working clearances in enclosure.
- F. Field-cut openings for conduits according to enclosure manufacturer's written instructions. Cut wall of enclosure with a tool designed for material to be cut. Size holes for terminating fittings to be used, and seal around penetrations after fittings are installed.

3.5 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

- A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 260544 "Sleeves and Sleeve Seals for Electrical Raceways and Cabling."

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3.6 PROTECTION

- A. Protect coatings, finishes, and cabinets from damage and deterioration.
 - 1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
 - 2. Repair damage to PVC coatings or paint finishes with matching touchup coating recommended by manufacturer.

END OF SECTION 260533

SECTION 260553 - IDENTIFICATION FOR ELECTRICAL 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.
- B. Examine all other Sections of the Specifications for requirements that affect work under this Section whether or not such work is specifically mentioned in this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Identification for conductors.
 - 2. Underground-line warning tape.
 - 3. Equipment identification labels.

1.3 ACTION SUBMITTALS

- A. Product Data: For each electrical identification product indicated.

1.4 QUALITY ASSURANCE

- A. Comply with ANSI A13.1.
- B. Comply with NFPA 70.
- C. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.
- D. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

1.5 COORDINATION

- A. Coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual; and with those required by codes, standards, and 29 CFR 1910.145. Use consistent designations throughout Project.

- B. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.
- C. Coordinate installation of identifying devices with location of access panels and doors.
- D. Install identifying devices before installing acoustical ceilings and similar concealment.

PART 2 - PRODUCTS

2.1 CONDUCTOR IDENTIFICATION MATERIALS

- A. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.

2.2 UNDERGROUND-LINE WARNING TAPE

- A. Tape:
 - 1. Recommended by manufacturer for the method of installation and suitable to identify and locate underground electrical lines.
 - 2. Printing on tape shall be permanent and shall not be damaged by burial operations.
 - 3. Tape material and ink shall be chemically inert, and not subject to degrading when exposed to acids, alkalis, and other destructive substances commonly found in soils.
- B. Color and Printing:
 - 1. Comply with ANSI Z535.1 through ANSI Z535.5.

2.3 EQUIPMENT IDENTIFICATION LABELS

- A. Engraved, Laminated Acrylic or Melamine Label: Punched or drilled for screw mounting. White letters on a dark-gray background. Minimum letter height shall be 3/8 inch.

PART 3 - EXECUTION

3.1 APPLICATION

- A. Branch-Circuit Conductor Identification: Where there are conductors for more than three branch circuits in same junction or pull box, use color-coding conductor tape. Identify each ungrounded conductor according to source and circuit number.

- B. Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and Operation and Maintenance Manual. Apply labels to disconnect switches and protection equipment, central or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power, lighting, control, communication, signal, monitoring, and alarm systems unless equipment is provided with its own identification.

1. Labeling Instructions:
 - a. Indoor Equipment: Engraved, laminated acrylic or melamine label.
2. Equipment to Be Labeled:
 - a. Panelboards, electrical cabinets, and enclosures.
 - b. Transformers.
 - c. Disconnect switches.
 - d. Push-button stations.

3.2 INSTALLATION

- A. Verify identity of each item before installing identification products.
- B. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.
- C. Apply identification devices to surfaces that require finish after completing finish work.
- D. Self-Adhesive Identification Products: Clean surfaces before application, using materials and methods recommended by manufacturer of identification device.
- E. Underground-Line Warning Tape: During backfilling of trenches install continuous underground-line warning tape directly above line at 6 to 8 inches below finished grade.

3.3 IDENTIFICATION SCHEDULE

- A. Power-Circuit Conductor Identification, 600 V or Less: For all conductors.
 1. Color-Coding for Identification, 600 V or Less: Use colors listed below for branch-circuit conductors.
 - a. Color shall be factory applied for field applied for sizes larger than No. 8 AWG.
 - b. Colors for 208/120-V Circuits:
 - 1) Phase A: Black.
 - 2) Phase B: Red.
 - 3) Phase C: Blue.
 - 4) Neutral: White
 - 5) Ground: Green.

- c. Colors for 480/277-V Circuits:
 - 1) Phase A: Brown.
 - 2) Phase B: Orange.
 - 3) Phase C: Yellow.
 - 4) Neutral: White
 - 5) Ground: Green
 - d. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Locate bands to avoid obscuring factory cable markings.
- B. Locations of Underground Lines: Identify with underground-line warning tape for power and lighting.
- 1. Install underground-line warning tape for both direct-buried cables and cables in raceway.

END OF SECTION 260553

SECTION 261116.12–SECONDARY UNIT SUBSTATIONS WITH SWITCHBOARDS SECONDARY

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 secondary unit substations, each consisting of medium-voltage primary incoming section, transformer section, and low-voltage secondary switchboard section, with the following features:
 - 1. Indoor enclosure
 - 2. Medium-voltage, metal-enclosed switchgear section.
 - 3. **Dry-type** transformer.
- B. Related Requirements:
 - 1. Section 260513 "Medium-Voltage Cables" for requirements for terminating cables in incoming section of substation.

1.3 DEFINITIONS

- A. BIL: Basic insulation level.
- B. ICCB: Insulated-case circuit breaker.
- C. MCCB: Molded-case circuit breaker.
- D. NETA ATS: Acceptance testing specification.
- E. PCB: Polychlorinated biphenyl.
- F. SPD: Surge protective device.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1. Include rated capacities, operating characteristics, and furnished specialties and accessories.
- B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
 1. Wiring Diagrams: Power, signal, and control wiring.
 2. Dimensioned plans and elevations showing major components and features.
 - a. Include a plan view and cross section of equipment base, showing clearances, manufacturer's recommended workspace that accounts for breaker service and removal, and locations of penetrations for grounding and conduits.
 3. One-line diagram.
 4. List of materials.
 5. Nameplate legends.
 6. The material, size and number of bus bars, and current rating for each bus, including mains and branches of phase, neutral, and ground buses.
 7. Short-time and short-circuit current ratings of secondary unit substations and components.
 8. Ratings of individual protective devices.
- C. Design Data:
 1. Time-Current Characteristic Curves: For overcurrent protective devices.

1.5 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings for Indoor Installations:
 1. Location plan, showing heavy equipment or truck access paths for maintenance and replacement.
 2. Reflected ceiling plans, drawn to scale, on which the following items are shown and coordinated with each other, based on input from installers of the items involved.
 3. Dimensioned concrete base, outline of secondary unit substation, conduit entries, and grounding equipment locations.
 4. Support locations, type of support, and weight on each support. Locate structural supports for structure-supported raceways
 5. Location of lighting fixtures, sprinkler piping and heads, ducts, and diffusers.
- B. Product Certificates: For secondary unit substations, signed by product manufacturer.
- C. Factory test reports.
- D. Field quality-control reports.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For secondary unit substations and accessories to include in emergency, operation, and maintenance manuals.

1.7 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. Spare Indicating Lights: Six of each type installed.
 - 2. Touchup Paint: Three half-pint containers of paint matching enclosure's exterior finish.
 - 3. Primary Switch Contact Lubricant: One container(s).

1.8 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Member company of NETA or an NRTL.
 - 1. Testing Agency's Field Supervisor: Certified by NETA or the National Institute for Certification in Engineering Technologies to supervise on-site testing.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver in shipping splits in sizes that can be moved past obstructions in delivery path.
- B. Coordinate delivery of secondary unit substations to allow movement into designated space.
- C. Store secondary unit substation components[**protected from weather and**] so condensation will not form on or in units. Provide temporary heating according to manufacturer's written instructions.
- D. Handle secondary unit substation components according to manufacturer's written instructions. Use factory-installed lifting provisions.

1.10 FIELD CONDITIONS

- A. Service Conditions: The unit substation shall be suitable for operation under service conditions specified as usual service conditions in IEEE C37.121, except for the following:
 - 1. Exposure to significant solar radiation.
 - 2. Altitudes above 3300 feet.
 - 3. Exposure to fumes, vapors, or dust.
 - 4. Exposure to explosive environments.
 - 5. Exposure to hot and humid climate or to excessive moisture, including steam, salt spray, and dripping water.

6. Exposure to seismic shock or to abnormal vibration, shock, or tilting.
7. Exposure to excessively high or low temperatures.
8. Unusual transportation or storage conditions.
9. Unusual grounding resistance conditions.
10. Unusual space limitations.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

1. Schneider Electric; Square D Power-Zone Model III Package Unit Substations.

2.2 SYSTEM DESCRIPTION

- A. Description: medium-voltage unit substations consisting of primary medium-voltage incoming section, medium-voltage substation transformer, and secondary outgoing section to distribute power.
 1. 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.
 2. Comply with IEEE C2.
 3. Comply with IEEE C57.121.
 4. Comply with NFPA 70.

2.3 MANUFACTURED UNITS

- A. Indoor Unit Arrangement: Single packaged assembly.
- B. Integrate primary incoming line section, transformer section, and secondary distribution section to form single lineup of metal-enclosed structures with metal barriers separating incoming section and secondary from transformer.
- C. Hardware, cables, and connectors necessary to complete unit substation interconnections to be furnished by manufacturer.
- D. Indoor Enclosure: Steel.
- E. Unit Substation Enclosures Finish: Factory-applied finish in manufacturer's standard color, including under surfaces treated with corrosion-resistant undercoating.
- F. Unit Substation Enclosures Finish: Factory-applied finish in manufacturer's standard gray over a rust-inhibiting primer on treated metal surface.

- G. Unit Substation Enclosures Finish: Factory-applied corrosion-resistant finish in manufacturer's standard color that withstands 120 hours of exposure to the salt spray test specified in ASTM B117 without loss of paint or release of adhesion of the paint primer coat to the metal surface in excess of 1/16 inch from the test mark. The scribed test mark and test evaluation shall be conducted according to ASTM D1654, with a rating of not less than 7 arrived at according to Table 1 (procedure A). Cut edges or otherwise damaged surfaces of hot-dip galvanized sheet steel or mill-galvanized sheet steel shall be coated with a manufacturer's standard zinc-rich paint.

2.4 COMPACT MEDIUM-VOLTAGE UNIT SUBSTATION; POWER-ZONE MODEL III

- A. Basis of Design: Schneider Electric; Square D Power-Zone Model III Package Unit Substations;
 - B. Primary Voltage: 4.16 Kv, 60 Hz.
 - C. Enclosure Environment Type: Indoor.
 - D. Primary Incoming Section:
 - 1. Medium-Voltage Metal-Enclosed Compartmentalized Fusible Interrupter Switchgear:
 - a. Provide fused load-break switch in compact, compartmentalized enclosure for protection and control of power to substation transformer.
 - E. Substation Transformers:
 - 1. Medium-Voltage Dry-Type, VPI Transformers:
 - a. Provide coils vacuum-pressure-impregnated in high-temperature polyester varnish.
 - F. Low-Voltage Secondary Outgoing Section for Secondary Unit Substations:
 - 1. Low-Voltage Distribution Section:
 - a. Provide secondary circuit breaker distribution section equipped with individually mounted main breaker and I-Line distribution section with group-mounted circuit breakers.

2.5 IDENTIFICATION DEVICES

- A. Compartment Nameplates: Engraved, laminated-plastic or metal nameplate for each compartment, mounted with corrosion-resistant screws. Nameplates and label products are specified in Section 260553 "Identification for Electrical Systems."

2.6 SOURCE QUALITY CONTROL

- A. Factory Tests: Perform design and routine tests according to standards specified for components. Conduct transformer tests according to IEEE C57.12.90. Conduct switchgear and switchboard tests according to NEMA C37.51.
- B. Factory Tests: Perform the following factory-certified tests on each secondary unit substation:
 - 1. Resistance measurements of all windings on the rated voltage connection and on tap extreme connections.
 - 2. Ratios on the rated voltage connection and on tap extreme connections.

3. Polarity and phase relation on the rated voltage connection.
4. No-load loss at rated voltage on the rated voltage connection.
5. Exciting current at rated voltage on the rated voltage connection.
6. Impedance and load loss at rated current on the rated voltage connection and on tap extreme connections.
7. Applied potential.
8. Induced potential.
9. Temperature Test: If a transformer is supplied with auxiliary cooling equipment to provide more than one rating, test at lowest kVA Class ONAN or Class AA rating and highest kVA Class ONAF or Class AFA rating.
 - a. Temperature test is not required if a record of a temperature test on an essentially duplicate unit is available.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and space conditions for compliance with requirements for secondary unit substations and other conditions affecting performance of the Work.
- B. Examine roughing-in of conduits and grounding systems to verify the following:
 1. Wiring entries comply with layout requirements.
 2. Entries are within conduit-entry tolerances specified by manufacturer, and no feeders will have to cross section barriers to reach load or line lugs.
- C. Examine walls, floors, roofs, and concrete bases for suitable conditions for secondary unit substation installation.
- D. Verify that ground connections are in place and that requirements in Section 260526 "Grounding and Bonding for Electrical Systems" have been met. Maximum ground resistance shall be 5 ohms at secondary unit substation location.
- E. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Comply with applicable portions of NECA 1, NECA 400, NECA 410, NECA 430, and NEMA SG 11.
- B. Install secondary unit substations on cast-in-place concrete equipment base(s). Comply with requirements for equipment bases and foundations specified in Section 033000 "Cast-in-Place Concrete."

- C. Comply with requirements for vibration isolation and seismic control devices specified in Section 260529 "Hangers and Supports for Electrical Systems" and Section 260548.16 "Seismic Controls for Electrical Systems."
- D. Maintain minimum clearances and workspace at equipment according to manufacturer's written instructions and NFPA 70.

3.3 IDENTIFICATION

- A. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Section 260553 "Identification for Electrical Systems."
 - 1. Install the number of signs required to be readable from each accessible side, but space the signs a maximum of 30 feet apart.
 - 2. Install arc-flash warning labels specified in Section 260573.19 "Arc-Flash Hazard Analysis."
- B. Operating Instructions: Place printed operating instructions for secondary unit substations, including key interlocking, control sequences, elementary single-line diagram, and emergency procedures with the maintenance materials.

3.4 CONNECTIONS

- A. Ground equipment according to Section 260526 "Grounding and Bonding for Electrical Systems."
 - 1. At Interior Locations: For grounding to grounding electrodes, use bare copper cable not smaller than No. 4/0 AWG. Bond surge arrester and neutrals directly to the transformer enclosure and then to the grounding electrode system with bare copper conductors. Keep leads as short as practicable with no kinks or sharp bends. Make joints in grounding conductors and loops by exothermic weld or compression connector.
 - 2. At Exterior Locations:
 - a. For counterpoise, use tinned bare copper cable not smaller than No. 4/0 AWG, buried not less than 30 inches below grade interconnecting the grounding electrodes. Bond surge arrester and neutrals shall directly to the transformer enclosure and then to the grounding electrode system with bare copper conductors, sized as shown. Keep lead lengths as short as practicable with no kinks or sharp bends.
 - b. Fence and equipment connections shall not be smaller than No. 4 AWG. Ground fence at each gate post and corner post and at intervals not exceeding 10 feet. Bond each gate section to the fence post using 1/8 by 1-inch tinned flexible braided copper strap and clamps.
 - c. Make joints in grounding conductors and loops by exothermic weld or compression connector.

- B. Connect wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

3.5 CLEANING

- A. After completing equipment installation and before energizing, inspect unit components. Remove paint splatters and other spots, dirt, and debris. Repair damaged finish to match original finish. Vacuum interiors of secondary unit substation sections.

3.6 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.
- B. Perform tests and inspections[**with the assistance of a factory-authorized service representative**].
- C. General Field Testing Requirements:
 - 1. Inspect and test equipment and associated systems for conformance to Contract Documents, including equipment manufacturer's recommendations, and readiness for operation.
 - a. Visually inspect for physical damage and proper installation.
 - b. Perform tests in accordance with manufacturer's instructions.
 - c. Perform tests to verify compliance with Contract Documents.
 - d. Perform tests to verify equipment is ready for operation.
 - e. Touch-up paint chips and scratches with manufacturer-supplied paint.

3.7 FOLLOW-UP SERVICE

- A. Infrared Inspection: Perform the survey during periods of maximum possible loading. Remove all necessary covers prior to the inspection.
 - 1. After Substantial Completion, but not more than 60 days after Final Acceptance, perform infrared inspection of the electrical power connections of the unit substation.
 - 2. Instrument: Inspect distribution systems with imaging equipment capable of detecting a minimum temperature difference of 1°C at 30°C.
 - 3. Record of Infrared Inspection: Prepare a certified report that identifies the testing technician and equipment used, and lists the results as follows:
 - a. Description of equipment to be tested.
 - b. Discrepancies.
 - c. Temperature difference between the area of concern and the reference area.
 - d. Probable cause of temperature difference.
 - e. Areas inspected. Identify inaccessible and unobservable areas and equipment.
 - f. Identify load conditions at time of inspection.

- g. Provide photographs and thermograms of the deficient area.
- 4. Act on inspection results according to the recommendations of NETA ATS, Table 100.18. Correct possible and probable deficiencies as soon as Owner's operations permit. Retest until deficiencies are corrected.

3.8 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Train Owner's maintenance personnel to adjust, operate, and maintain systems.

END OF SECTION 261116.12

SECTION 262200 - LOW-VOLTAGE TRANSFORMERS

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Examine all other Sections of the Specifications for requirements that affect work under this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting, or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

1.2 SUMMARY

- A. This Section includes the following types of dry-type transformers rated 600 V and less, with capacities up to 1000 kVA:
 - 1. Distribution transformers.

1.3 SUBMITTALS

- A. Product Data: Include rated nameplate data, capacities, weights, dimensions, minimum clearances, installed devices and features, and performance for each type and size of transformer indicated.
- B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
 - 1. Wiring Diagrams

1.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain each transformer type through one source from a single manufacturer.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- C. Comply with IEEE C57.12.91, "Test Code for Dry-Type Distribution and Power Transformers."

1.5 COORDINATION

- A. Coordinate size and location of concrete bases with actual transformer provided. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified in Division 03.

Coordinate installation of wall-mounting and structure-hanging supports with actual transformer provided.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Square D; Schneider Electric
 - 2. Eaton Electrical Inc.; Cutler-Hammer Products.
 - 3. General Electric Company.

2.2 GENERAL TRANSFORMER REQUIREMENTS

- A. Description: Factory-assembled and -tested, air-cooled units for 60-Hz service.
- B. Cores: Grain-oriented, non-aging silicon steel.
- C. Coils: Continuous windings without splices except for taps.
 - 1. Internal Coil Connections: Brazed or pressure type.
 - 2. Coil Material: Copper.

2.3 DISTRIBUTION TRANSFORMERS

- A. Comply with NEMA ST 20, and list and label as complying with UL 1561.
- B. Provide transformers that are constructed to withstand seismic forces specified in Division 26 Section "Vibration and Seismic Controls for Electrical Systems."
- C. Cores: One leg per phase.
- D. Enclosure: Ventilated, NEMA 250, Type 2.
 - 1. Core and coil shall be encapsulated within resin compound, sealing out moisture and air.
- E. Transformer Enclosure Finish: Comply with NEMA 250.

1. Finish Color: Gray.

- F. Taps for Transformers 25 kVA and Larger: Two 2.5 percent taps above and two 2.5 percent taps below normal full capacity.
- G. Insulation Class: 220 deg C, UL-component-recognized insulation system with a maximum of 115 deg C rise above 40 deg C ambient temperature.
- H. Wall Brackets: Manufacturer's standard brackets.

2.4 IDENTIFICATION DEVICES

- A. Nameplates: Engraved, laminated-plastic nameplate for each distribution transformer, mounted with corrosion-resistant screws. Nameplates and label products are specified in Division 26 Section "Identification for Electrical Systems."

2.5 SOURCE QUALITY CONTROL

- A. Test and inspect transformers according to IEEE C57.12.91.
- B. Factory Sound-Level Tests: Conduct sound-level tests on equipment for this Project.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine conditions for compliance with enclosure- and ambient-temperature requirements for each transformer.
- B. Verify that field measurements are as needed to maintain working clearances required by NFPA 70 and manufacturer's written instructions.
- C. Examine walls, floors, roofs, and concrete bases for suitable mounting conditions where transformers will be installed.
- D. Verify that ground connections are in place and requirements in Division 26 Section "Grounding and Bonding for Electrical Systems" have been met. Maximum ground resistance shall be 5 ohms at location of transformer.
- E. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install wall-mounting transformers level and plumb with wall brackets fabricated by transformer manufacturer.
- B. Install floor mounted transformers on housekeeping pads.

3.3 CONNECTIONS

- A. Ground equipment according to Division 26 Section "Grounding and Bonding for Electrical Systems."
- B. Connect wiring according to Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."

3.4 FIELD QUALITY CONTROL

- A. Tests and Inspections:
 - 1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
- B. Remove and replace units that do not pass tests or inspections and retest as specified above.

3.5 CLEANING

- A. Vacuum dirt and debris; do not use compressed air to assist in cleaning.

END OF SECTION 262200

SECTION 262416 - PANELBOARDS

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Examine all other Sections of the Specifications for requirements that affect work under this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting, or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

1.2 SUMMARY

- A. Section Includes:
 - 1. Lighting and appliance branch-circuit panelboards.

1.3 DEFINITIONS

- A. ATS: Acceptance testing specification.
- B. GFCI: Ground-fault circuit interrupter.
- C. GFEP: Ground-fault equipment protection.
- D. HID: High-intensity discharge.
- E. MCCB: Molded-case circuit breaker.
- F. SPD: Surge protective device.
- G. VPR: Voltage protection rating.

1.4 SUBMITTALS

- A. Product Data: For each type of panelboard, switching and overcurrent protective device, accessory, and component indicated. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.

- B. Shop Drawings: For each panelboard and related equipment.
 - 1. Include dimensioned plans, elevations, sections, and details. Show tabulations of installed devices, equipment features, and ratings.
 - 2. Detail enclosure types and details for types other than NEMA 250, Type 1.
 - 3. Detail bus configuration, current, and voltage ratings.
 - 4. Short-circuit current rating of panelboards and overcurrent protective devices.
 - 5. Include evidence of NRTL listing for series rating of installed devices.
 - 6. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.
 - 7. Include wiring diagrams for power, signal, and control wiring.
 - 8. Include time-current coordination curves for each type and rating of overcurrent protective device included in panelboards. Submit on translucent log-log graph paper; include selectable ranges for each type of overcurrent protective device.
- C. Qualification Data: For qualified testing agency.
- D. Field Quality-Control Reports:
 - 1. Test procedures used.
 - 2. Test results that comply with requirements.
 - 3. Results of failed tests and corrective action taken to achieve test results that comply with requirements.
- E. Panelboard Schedules: For installation in panelboards. Submit final versions after load balancing.
- F. Operation and Maintenance Data: For panelboards and components to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 01 Section "Operation and Maintenance Data," include the following:
 - 1. Manufacturer's written instructions for testing and adjusting overcurrent protective devices.
 - 2. Time-current curves, including selectable ranges for each type of overcurrent protective device that allows adjustments.

1.5 QUALITY ASSURANCE

- A. Source Limitations: Obtain panelboards, overcurrent protective devices, components, and accessories from single source from single manufacturer.
- B. 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.
- C. Comply with NEMA PB 1.
- D. Comply with NFPA 70.

1.6 COORDINATION

- A. Coordinate layout and installation of panelboards and components with other construction that penetrates walls or is supported by them, including electrical and other types of equipment, raceways, piping, encumbrances to workspace clearance requirements, and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

1.7 FIELD CONDITIONS

- A. Interruption of Existing Electric Service: Do not interrupt electric service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electric service according to requirements indicated:
 - 1. Notify Construction Manager no fewer than 7 days in advance of proposed interruption of electric service.
 - 2. Do not proceed with interruption of electric service without Construction Manager's written permission.
 - 3. Comply with NFPA 70E.

1.8 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to repair or replace panelboards that fail in materials or workmanship within specified warranty period.
 - 1. Panelboard Warranty Period: 18 months from date of Substantial Completion.

1.9 EXTRA MATERIALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Keys: Two spares for each type of panelboard cabinet lock.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR PANELBOARDS

- A. Fabricate and test panelboards according to IEEE 344 to withstand seismic forces.
- B. Product Selection for Restricted Space: Drawings indicate maximum dimensions for panelboards including clearances between panelboards and adjacent surfaces and other items. Comply with indicated maximum dimensions.

- C. 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.
- D. Comply with NEMA PB 1.
- E. Comply with NFPA 70.
- F. Enclosures: Flush and Surface mounted, dead-front cabinets.
 - 1. Rated for environmental conditions at installed location.
 - a. Indoor Dry and Clean Locations: NEMA 250, Type 1.
 - b. Outdoor Locations: NEMA 250, Type 3R.
 - c. Kitchen Areas: NEMA 250, Type 4X, stainless steel.
 - d. Other Wet or Damp Indoor Locations: NEMA 250, Type 4.
 - 2. Height: 84 inches (2.13 m) maximum.
 - 3. Front: Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box. Trims shall cover all live parts and shall have no exposed hardware.
 - 4. Hinged Front Cover: Entire front trim hinged to box and with standard door within hinged trim cover. Trims shall cover all live parts and shall have no exposed hardware.
 - 5. Skirt for Surface-Mounted Panelboards: Same gage and finish as panelboard front with flanges for attachment to panelboard, wall, and ceiling or floor.
 - 6. Gutter Extension and Barrier: Same gage and finish as panelboard enclosure; integral with enclosure body. Arrange to isolate individual panel sections.
 - 7. Finishes:
 - a. Panels and Trim: Steel, factory finished immediately after cleaning and pretreating with manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat.
 - b. Back Boxes: Galvanized steel
- G. Incoming Mains:
 - 1. Location: Convertible between top and bottom.
 - 2. Main Breaker: Main lug interiors up to 400 amperes shall be field convertible to main breaker.
- H. Phase, Neutral, and Ground Buses:
 - 1. Material: Hard-drawn copper, 98 percent conductivity.
 - a. Plating shall run entire length of bus.
 - b. Bus shall be fully rated the entire length.
 - 2. Interiors shall be factory assembled into a unit. Replacing switching and protective devices shall not disturb adjacent units or require removing the main bus connectors.
 - 3. Equipment Ground Bus: Adequate for feeder and branch-circuit equipment grounding conductors; bonded to box.

4. Isolated Ground Bus: Adequate for branch-circuit isolated ground conductors; insulated from box.
5. Full-Sized Neutral: Equipped with full-capacity bonding strap for service entrance applications. Mount electrically isolated from enclosure. Do not mount neutral bus in gutter.

I. Conductor Connectors: Suitable for use with conductor material and sizes.

1. Material: Hard-drawn copper, 98 percent conductivity.
2. Terminations shall allow use of 75 deg C rated conductors without derating.
3. Size: Lugs suitable for indicated conductor sizes, with additional gutter space, if required, for larger conductors.
4. Main and Neutral Lugs: Mechanical type, with a lug on the neutral bar for each pole in the panelboard.
5. Ground Lugs and Bus-Configured Terminators: Mechanical type, with a lug on the bar for each pole in the panelboard.
6. Feed-Through Lugs: Mechanical type, suitable for use with conductor material. Locate at opposite end of bus from incoming lugs or main device.
7. Subfeed (Double) Lugs: Mechanical type suitable for use with conductor material. Locate at same end of bus as incoming lugs or main device.
8. Gutter-Tap Lugs: Mechanical type suitable for use with conductor material and with matching insulating covers. Locate at same end of bus as incoming lugs or main device.

J. Future Devices: Panelboards or load centers shall have mounting brackets, bus connections, filler plates, and necessary appurtenances required for future installation of devices.

1. Percentage of Future Space Capacity: Five percent.

K. Panelboard Short-Circuit Current Rating: Fully rated to interrupt symmetrical short-circuit current available at terminals. Assembly listed by an NRTL for 100 percent interrupting capacity.

1. Panelboards and overcurrent protective devices rated 240 V or less shall have short-circuit ratings as shown on Drawings, but not less than 22,000 A rms symmetrical.
2. Panelboards and overcurrent protective devices rated above 240 V and less than 600 V shall have short-circuit ratings as shown on Drawings, but not less than 35,000 A rms symmetrical.

2.2 LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
2. General Electric Company; GE Consumer & Industrial - Electrical Distribution.
3. Siemens Energy & Automation, Inc.
4. Square D; a brand of Schneider Electric.

- B. Panelboards: NEMA PB 1, lighting and appliance branch-circuit type.
- C. Mains: Circuit breaker as shown on the plans.
- D. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.
- E. Doors: Concealed hinges; secured with flush latch with tumbler lock; keyed alike.

2.3 RETROFIT INTERIOR KITS

- A. The Retrofit Interior is designed and tested specifically for renovating an outdated electrical panel.
- B. Features:
 - 1. Reuse existing panelboard backbox
 - 2. UL 67 Listed.
 - 3. Meets 2008 NEC wire bending requirements.
 - 4. Factory Installed ground and neutral bars positioned to accept existing wires.
 - 5. Field adjustable depth matches existing panel box.
 - 6. Adjustable height enables optional placement of the interior.
 - 7. Field bondable for service entrance options.
 - 8. Standard trim matches new interior.
 - 9. New circuit directory for updated labeling.
 - 10. Oversized collar
- C. Panelboards: NEMA PB 1, lighting and appliance branch-circuit type.
- D. Mains: Circuit breaker as shown on the plans.
- E. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.

2.4 MOLDED-CASE CIRCUIT BREAKERS

- A. Circuit breakers shall be constructed using glass-reinforced insulating material. Current carrying components shall be completely isolated from the handle and the accessory mounting area.
- B. Circuit breakers shall have a toggle operating mechanism with common tripping of all poles, which provides quick-make, quick-break contact action. The circuit-breaker handle shall be over center, be trip free, and reside in a tripped position between on and off to provide local trip indication. Circuit-breaker escutcheon shall be clearly marked on and off in addition to providing international I/O markings. Equip circuit breaker with a push-to-trip button, located on the face of the circuit breaker to mechanically operate the circuit-breaker tripping mechanism for maintenance and testing purposes.

- C. The maximum ampere rating and UL, IEC, or other certification standards with applicable voltage systems and corresponding interrupting ratings shall be clearly marked on face of circuit breaker. Circuit breakers shall be 100 percent rated
- D. MCCBs shall be equipped with a device for locking in the isolated position.
- E. Lugs shall be suitable for 167 deg F (75 deg C) rated wire temperature rating in NFPA 70.
- F. Standards: Comply with UL 489 and NEMA AB 3, with interrupting capacity to comply with available fault currents.
- G. Thermal-Magnetic Circuit Breakers: Inverse time-current thermal element for low-level overloads and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.
- H. Adjustable, Instantaneous-Trip Circuit Breakers: Magnetic trip element with front-mounted, field-adjustable trip setting.
- I. Electronic Trip Circuit Breakers: Field-replaceable rating plug, rms sensing, with the following field-adjustable settings:
 - 1. Instantaneous trip.
 - 2. Long- and short-time pickup levels.
 - 3. Long- and short-time time adjustments.
 - 4. Ground-fault pickup level, time delay, and I-squared t response.
- J. Current-Limiting Circuit Breakers: Frame sizes 400 A and smaller, and let-through ratings less than NEMA FU 1, RK-5.
- K. Integrally Fused Circuit Breakers: Thermal-magnetic trip element with integral limiter-style fuse listed for use with circuit breaker and trip activation on fuse opening or on opening of fuse compartment door.
- L. Ground-Fault Circuit-Interrupter (GFCI) Circuit Breakers: Single- and two-pole configurations with Class A ground-fault protection (6-mA trip).
- M. Ground-Fault Equipment-Protection (GFEP) Circuit Breakers: With Class B ground-fault protection (30-mA trip).
- N. Features and Accessories:
 - 1. Standard frame sizes, trip ratings, and number of poles.
 - 2. Lugs: Mechanical type, suitable for number, size, trip ratings, and conductor material.
 - 3. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HID for feeding fluorescent and high-intensity discharge lighting circuits.
 - 4. Ground-Fault Protection: Comply with UL 1053; integrally mounted, self-powered type with mechanical ground-fault indicator; relay with adjustable pickup and time-delay

settings, push-to-test feature, internal memory, and shunt trip unit; and three-phase, zero-sequence current transformer/sensor.

5. Shunt Trip: Trip coil energized from separate circuit, with coil-clearing contact.
6. Undervoltage Trip: Set to operate at 35 to 75 percent of rated voltage without intentional time delay.

2.5 IDENTIFICATION

- A. Panelboard Label: Manufacturer's name and trademark, voltage, amperage, number of phases, and number of poles shall be located on the interior of the panelboard door.
- B. Breaker Labels: Faceplate shall list current rating, UL and IEC certification standards, and AIC rating.
- C. Circuit Directory: Computer-generated circuit directory mounted inside panelboard door with transparent plastic protective cover.
 1. Circuit directory shall identify specific purpose with detail sufficient to distinguish it from all other circuits.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Receive, inspect, handle, and store panelboards according to NECA 407 NEMA PB 1.1.
- B. Examine panelboards before installation. Reject panelboards that are damaged or rusted or have been subjected to water saturation.
- C. Examine elements and surfaces to receive panelboards for compliance with installation tolerances and other conditions affecting performance of the Work.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 RETROFIT PANELBOARD INSTALLATION

- A. Install retrofit panelboards and accessories according the manufacturer instruction manual.
- B. Carefully identify all connections, load and line paying particular attention to main incoming phasing. Identify correct phasing on the mains and disconnect all phases, neutral and ground connections. Identify and disconnect all load wires (line & neutral) connected to existing branch breakers, noting current values.
- C. Before proceeding, it is important to verify that the line and load cables (phase, neutrals and grounds) are long enough to connect to the new interior.

- D. Proceed to disconnect all electrical connections attached to the existing interior. Once the conductors are disconnected from the old interior, the cables should be formed in the space provided. Care should be taken in forming insulated cables to ensure that no insulation is forced permanently against the edges of any metal parts.
- E. Remove all chassis mounting hardware. Carefully remove chassis to ensure that cable insulation is not damaged by sharp edges. To allow for adequate bonding, all attempts should be made to utilize existing mounting studs/system in the enclosure. If it is not feasible to use existing mounting system, remove all protrusions to allow for a flat mounting surface.
- F. After installation of the retrofit kit inspect the following:
 - 1. Visually inspect the panelboard and remove all foreign materials, such as, tools, scraps of wire and other debris from all panelboard sections.
 - 2. Remove and discard all packing materials and temporary shipping braces from the panelboard.
 - 3. Any accumulation of dust and dirt should be removed with a vacuum cleaner. Use a lint-free cloth to remove dust and dirt on other surfaces. Never use compressed air as this may blow contaminants into electrical and/or electronic components. Never use solvents or other chemicals to clean surfaces or components.
 - 4. Visually inspect all ventilation points to ensure that there is no blockage or debris. Remove all debris, if present.
 - 5. Verify all field wire connections have the proper torque per instructions on the panelboard and on components.
 - 6. All factory connections are made utilizing calibrated power tools. However, vibrations do occur in transit and handling. Verify factory connections by checking at least 10% of the total factory connections for tightness. If this spot check reveals loose connections, proceed to check all factory connections. These connections include bus hardware connections, circuit breaker terminals, and other connections, including the incoming terminals.
 - 7. Visually inspect panelboard insulators, bus bar and conductors for damage. DO NOT ENERGIZE IF DAMAGE IS FOUND.
- G. Prior to energizing the panelboard, perform a Megger or DC test of the panelboard's insulation with the neutral isolated from the ground and the switches and/or circuit breakers open, conduct electrical insulation resistance tests from phase to phase, phase to ground, phase to neutral, and neutral to ground. Retain results for use to compare to results produced in the future. Prior to testing, remove all control power fusing and connections to products, which will be damaged in this test. Test resulting in readings at or above 1 megaohm is satisfactory.

3.3 INSTALLATION

- A. Install panelboards and accessories according to NECA 407 NEMA PB 1.1.
- B. Mount top of trim 90 inches above finished floor unless otherwise indicated.

- C. Mount panelboard cabinet plumb and rigid without distortion of box. Mount recessed panelboards with fronts uniformly flush with wall finish and mating with back box.
- D. Install overcurrent protective devices and controllers not already factory installed.
- E. Install filler plates in unused spaces.
- F. Comply with NECA 1.

3.4 IDENTIFICATION

- A. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs complying with Division 26 Section "Identification for Electrical Systems."
- B. Create a directory to indicate installed circuit loads after balancing panelboard loads. Use a computer or typewriter to create directory; handwritten directories are not acceptable.
- C. Panelboard Nameplates: Label each panelboard with a nameplate complying with requirements for identification specified in Division 26 Section "Identification for Electrical Systems."

3.5 FIELD QUALITY CONTROL

- A. Acceptance Testing Preparation:
 - 1. Test insulation resistance for each panelboard bus, component, connecting supply, feeder, and control circuit.
 - 2. Test continuity of each circuit.
- B. Tests and Inspections:
 - 1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
 - 2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
- C. Panelboards will be considered defective if they do not pass tests and inspections.
- D. Prepare test and inspection reports, including a certified report that identifies panelboards included and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

3.6 ADJUSTING

- A. Adjust moving parts and operable component to function smoothly, and lubricate as recommended by manufacturer.

- B. Load Balancing: After Substantial Completion, but not more than 60 days after Final Acceptance, measure load balancing and make circuit changes.
1. Measure as directed during period of normal system loading.
 2. Perform load-balancing circuit changes outside normal occupancy/working schedule of the facility and at time directed. Avoid disrupting critical 24-hour services such as fax machines and on-line data processing, computing, transmitting, and receiving equipment.
 3. After circuit changes, recheck loads during normal load period. Record all load readings before and after changes and submit test records.
 4. Tolerance: Difference exceeding 20 percent between phase loads, within a panelboard, is not acceptable. Rebalance and recheck as necessary to meet this minimum requirement.

END OF SECTION 262416

SECTION 262417 - MINI-POWER CENTERS

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 SCOPE

- A. The Contractor shall furnish and install single-phase and three-phase general purpose individually mounted mini-power centers of the two-winding type, self-cooled, as specified herein and as shown on the contract drawings.

1.3 REFERENCES

- A. The mini-power center and all components shall be designed, manufactured and tested in accordance with the latest applicable standards of UL, ANSI and NEMA.

1.4 SUBMITTALS

- A. Product Data: The following information shall be submitted to the Engineer:

1. Dimension drawing weights
2. Transformer ratings including:
 - a. KVA
 - b. Primary and secondary voltage
 - c. Taps
 - d. Primary and secondary continuous current
 - e. Insulation class and temperature rise
 - f. Sound level
3. Component rating including:
 - a. Voltage
 - b. Continuous current
 - c. Interrupting ratings
4. Cable terminal sizes
5. Product data sheets

1.5 SUBMITTALS FOR CONSTRUCTION

- A. The following information shall be submitted for record purposes:
 - 1. Final (as-built) drawings and information for items in listed in Paragraph 1.4, and shall incorporate all changes made during the manufacturing process
 - 2. Connection diagrams
 - 3. Installation information

1.6 REGULATORY REQUIREMENTS

- A. The assembly and all components shall be U.L. listed.

1.7 DELIVERY , STORAGE AND HANDLING

- A. Equipment shall be handled and stored in accordance with manufacturer's instructions. One (1) copy of these instructions shall be included with the equipment at time of shipment.

1.8 OPERATION AND MAINTENENCE MANUALS

- A. Equipment operation and maintenance manuals shall be provided with each assembly shipped, and shall include instruction leaflets and instruction bulletins for the complete assembly and each major component.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Eaton
 - B. Square D
 - C. Hammond
 - D. Milbank
- 1. The listing of specific manufactures above does not imply acceptance of their products that do not meet the specified ratings, features and functions. Manufacturers listed above are not relieved from meeting the specifications in their entirety. Products in compliance with specification and manufactured by others not named will be considered only if pre-approved by the Engineer ten (10) days prior to bid date.

2.2 RATINGS

- A. kVA and voltage ratings shall be as shown on drawings.
- B. Units shall be designed for continuous operation at rated kVA, for 24 hours a day, 365 days a year operation, with normal life expectancy as defined in ANSI C57.96.
- C. Transformer sound levels shall not exceed the following ANSI and NEMA levels for self-cooled ratings:
 - 1. Up to 0 kVA 40 db
 - 2. 10 to 30 kVA 45 db

2.3 CONSTRUCTION

- A. Each mini-power center shall include a primary main breaker, an encapsulated dry-type transformer and a *(loadcenter) (panelboard) with secondary main breaker.
- B. Primary main, secondary main and feeder breakers shall be enclosed with a pad-lockable hinged door.
- C. Mini-power centers shall be suitable for service entrance application and labeled as such.
- D. Insulation Systems
 - 1. Transformers shall be insulated with a 180 degrees C insulation system and rated at 115 degrees C temperature rise
 - 2. Required performance shall be obtained without exceeding the above-indicated temperature rise in a 40 degrees C maximum ambient, with a 30 degrees C average over 24 hours
 - 3. All insulation materials shall be flame-retardant and shall not support combustion as defined in ASTM Standard Test Method D635.
- E. Core and Coil Assemblies
 - 3. Transformer core shall be constructed with high-grade, non-aging, silicon steel with high magnetic permeability, and low hysteresis and eddy current losses. Maximum magnetic flux densities shall be substantially below the saturation point. The transformer core volume shall allow efficient transformer operation at 10% above the nominal tap voltage. The core laminations shall be tightly clamped and compressed. Coils shall be wound of electrical grade copper with continuous wound construction.
 - 4. The core and coil assembly shall be completely encapsulated in a proportioned mixture of resin and aggregate to provide a moisture proof, shock-resistant seal. The core and coil encapsulation system shall minimize the sound level.
 - 5. The core of the transformer shall be grounded to the enclosure.

6. Provide two (2) 5% FCBN taps

2.4 BUS

- A. Secondary bus shall be aluminum or copper as defined on the drawings.

2.5 WIRING TERMINATIONS

- A. All interconnecting wiring between the primary breaker and transformer, secondary main breaker and transformer and distribution section shall be factory installed.
- B. All transformers shall be equipped with a wiring compartment suitable for conduit entry and large enough to allow convenient wiring.
- C. Panelboard Nameplates: Label each panelboard with a nameplate complying with requirements for identification specified in Division 26 Section "Identification for Electrical Systems."

2.6 MAIN DEVICES

Each mini -power center shall include a primary main breaker with a minimum interrupting rating of 14kA at 277/480 volts and a secondary main breaker with an minimum interrupting rating of 10kA at 120/208 Volts and a load center.

2.7 FEEDER DEVICES

- A. The secondary distribution shall accommodate one inch bolt on breakers with a minimum of 10 kA interrupting capacity.
- B. Load Balancing: After Substantial Completion, but not more than 60 days after Final Acceptance, measure load balancing and make circuit changes.

2.8 ENCLOSURE

- A. The enclosure shall be made of heavy-gauge steel and the maximum temperature of the enclosure shall not exceed 90 degrees C.
- B. The enclosure shall be totally enclosed, non ventilated NEMA 3R, with lifting provisions.

PART 3 EXECUTION

3.1 FACTORY TESTING

- A. The following standard factory tests shall be performed on the equipment provided under this section. All tests shall be in accordance with the latest version of ANSI and NEMA.
 - 1. Ratio tests at the rated voltage connection and at all tap connections.
 - 2. Polarity and phase relation tests on the rated voltage connection.
 - 3. Applied potential tests
 - 4. Induced potential tests
 - 5. No- load and excitation current at rated voltage on the rated voltage connection.

3.2 INSTALLATION

- A. The Contractors shall install all equipment per the manufacturers recommendations and the contract drawings .

3.3 FIELD ADJUSTMENTS

- A. Adjust taps to deliver appropriate secondary voltage.

3.4 FIELD TESTING

- A. Measure primary and secondary for proper tap setting and voltage.

3.5 WARRANTY

- A. Mini- power center and breakers provided will be warranted for 1 year after substantial completion of the contract.

END OF SECTION 262417

SECTION 262726 - WIRING DEVICES

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.
- B. Examine all other Sections of the Specifications for requirements that affect work under this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting, or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

1.2 SUMMARY

- A. Section Includes:
 - 1. Receptacles, receptacles with integral GFCI, and associated device plates.
 - 2. Snap switches and wall-box dimmers.
 - 3. Weatherproof covers.

1.3 DEFINITIONS

- A. GFCI: Ground-fault circuit interrupter.
- B. Pigtail: Short lead used to connect a device to a branch-circuit conductor.

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Receptacles for GC and Owner-Furnished Equipment: Match plug configurations.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For wiring devices to include in all manufacturers' packing-label warnings and instruction manuals that include labeling conditions.

1.7 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.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers' Names: Shortened versions (shown in parentheses) of the following manufacturers' names are used in other Part 2 articles:
 - 1. Cooper Wiring Devices; a division of Cooper Industries, Inc. (Cooper).
 - 2. Hubbell Incorporated; Wiring Device-Kellems (Hubbell).
 - 3. Leviton Mfg. Company Inc. (Leviton).
 - 4. Pass & Seymour/Legrand; Wiring Devices & Accessories (Pass & Seymour).

2.2 GENERAL WIRING-DEVICE REQUIREMENTS

- A. Wiring Devices, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with NFPA 70.
- C. Devices that are manufactured for use with modular plug-in connectors may be substituted under the following conditions:
 - 1. Connectors shall comply with UL 2459 and shall be made with stranding building wire.
 - 2. Devices shall comply with the requirements in this Section.

2.3 STRAIGHT-BLADE RECEPTACLES

- A. Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 Configuration 5-20R, UL 498, and FS W-C-596.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Cooper; 5351 (single), 5352 (duplex).
 - b. Hubbell; HBL5351 (single), CR5352 (duplex).
 - c. Leviton; 5891 (single), 5352 (duplex).

- d. Pass & Seymour; 5381 (single), 5352 (duplex).

2.4 GFCI RECEPTACLES

A. General Description:

- 1. Straight blade, feed-through type.
- 2. Comply with NEMA WD 1, NEMA WD 6, UL 498, UL 943 Class A, and FS W-C-596.
- 3. Include indicator light that shows when the GFCI has malfunctioned and no longer provides proper GFCI protection.

2.5 TOGGLE SWITCHES

A. Comply with NEMA WD 1, UL 20, and FS W-S-896.

B. Switches, 120/277 V, 20 A:

- 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. Single Pole:
 - 1) Hubbell; HBL1221.
 - 2) Leviton; 1221-2.
 - 3) Pass & Seymour; CSB20AC1.
 - b. Three Way:
 - 1) Hubbell; HBL1223.
 - 2) Leviton; 1223-2.
 - 3) Pass & Seymour; CSB20AC3.

2.6 WALL PLATES

A. Single and combination types shall match corresponding wiring devices.

- 1. Plate-Securing Screws: Metal with head color to match plate finish.
- 2. Material for Finished Spaces: Smooth, high-impact thermoplastic 0.035-inch- (1-mm-) thick.
- 3. Material for Unfinished Spaces: Stainless steel smooth finish type 302.
- 4. Material for Damp Locations: Cast aluminum with spring-loaded lift cover, and listed and labeled for use in "wet locations."

B. Device Color: TBD in submittal review.

- 2.7 Wet-Location, Weatherproof Cover Plates: NEMA 250, complying with type 3R weather-resistant, die-cast aluminum with lockable cover.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with NECA 1, including mounting heights listed in that standard, unless otherwise indicated.
- B. Coordination with Other Trades:
1. Protect installed devices and their boxes. Do not place wall finish materials over device boxes and do not cut holes for boxes with routers that are guided by riding against outside of boxes.
 2. Keep outlet boxes free of plaster, drywall joint compound, mortar, cement, concrete, dust, paint, and other material that may contaminate the raceway system, conductors, and cables.
 3. Install device boxes in brick or block walls so that the cover plate does not cross a joint unless the joint is troweled flush with the face of the wall.
 4. Install wiring devices after all wall preparation, including painting, is complete.
- C. Conductors:
1. Do not strip insulation from conductors until right before they are spliced or terminated on devices.
 2. Strip insulation evenly around the conductor using tools designed for the purpose. Avoid scoring or nicking of solid wire or cutting strands from stranded wire.
 3. The length of free conductors at outlets for devices shall meet provisions of NFPA 70, Article 300, without pigtails.
 4. Existing Conductors:
 - a. Cut back and pigtail, or replace all damaged conductors.
 - b. Straighten conductors that remain and remove corrosion and foreign matter.
 - c. Pigtailing existing conductors is permitted, provided the outlet box is large enough.
- D. Device Installation:
1. Replace devices that have been in temporary use during construction and that were installed before building finishing operations were complete.
 2. Keep each wiring device in its package or otherwise protected until it is time to connect conductors.
 3. Do not remove surface protection, such as plastic film and smudge covers, until the last possible moment.
 4. Connect devices to branch circuits using pigtails that are not less than 6 inches in length.

5. When there is a choice, use side wiring with binding-head screw terminals. Wrap solid conductor tightly clockwise, two-thirds to three-fourths of the way around terminal screw.
6. Use a torque screwdriver when a torque is recommended or required by manufacturer.
7. When conductors larger than No. 12 AWG are installed on 15- or 20-A circuits, splice No. 12 AWG pigtails for device connections.
8. Tighten unused terminal screws on the device.
9. When mounting into metal boxes, remove the fiber or plastic washers used to hold device-mounting screws in yokes, allowing metal-to-metal contact.

E. Receptacle Orientation:

1. Install ground pin of vertically mounted receptacles up, and on horizontally mounted receptacles to the right.

F. Device Plates: Do not use oversized or extra-deep plates. Repair wall finishes and remount outlet boxes when standard device plates do not fit flush or do not cover rough wall opening.

G. Dimmers:

1. Install dimmers within terms of their listing.
2. Verify that dimmers used for fan speed control are listed for that application.
3. Install unshared neutral conductors on line and load side of dimmers according to manufacturers' device listing conditions in the written instructions.

H. Arrangement of Devices: Unless otherwise indicated, mount flush, with long dimension vertical and with grounding terminal of receptacles on top. Group adjacent switches under single, multi-gang wall plates.

3.2 GFCI RECEPTACLES

- A. Install non-feed-through-type GFCI receptacles where protection of downstream receptacles is not required.

3.3 IDENTIFICATION

- A. Comply with Section 260553 "Identification for Electrical Systems."

END OF SECTION 262726

SECTION 265100 - INTERIOR LIGHTING

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Examine all other Sections of the Specifications for requirements that affect work under this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting, or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Interior lighting fixtures, lamps, and ballasts.
 - 2. Emergency lighting units.
 - 3. Exit signs.

1.3 DEFINITIONS

- A. CRI: Color-rendering index.
- B. CRI: Color Rendering Index.
- C. Fixture: See "Luminaire."
- D. IP: International Protection or Ingress Protection Rating.
- E. LED: Light emitting diode
- F. Lumen: Measured output of lamp and luminaire, or both.
- G. Luminaire: Complete lighting fixture, including ballast housing if provided.

1.4 SUBMITTALS

- A. Product Data: For each type of lighting fixture, arranged in order of fixture designation. Include data on features, accessories, finishes, and the following:

1. Physical description of lighting fixture including dimensions.
2. Emergency lighting units including battery and charger.
3. Driver.
4. Energy-efficiency data.
5. Life, output, and energy-efficiency data for LEDs.
6. Photometric data, in IESNA format, based on laboratory tests of each lighting fixture type, outfitted with drivers or LEDs and accessories identical to those indicated for the lighting fixture as applied in this Project.
 - a. For indicated fixtures, photometric data shall be certified by a qualified independent testing agency. Photometric data for remaining fixtures shall be certified by the manufacturer.
 - b. Photometric data shall be certified by a manufacturer's laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program (NVLAP) for Energy Efficient Lighting Products.

- B. Luminaire installation instructions.
- C. Product Certificates: For each type of driver for bi-level and dimmer-controlled fixtures, signed by product manufacturer.
- D. Qualification Data: For agencies providing photometric data for lighting fixtures.
- E. Field quality-control test reports.
- F. Operation and Maintenance Data: For lighting equipment and fixtures to include in emergency, operation, and maintenance manuals.
- G. Warranties: Special warranties specified in this Section.

1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.

1.6 COORDINATION

- A. Coordinate layout and installation of lighting fixtures and suspension system with other construction that penetrates ceilings or is supported by them, including HVAC equipment, fire-suppression system, and partition assemblies.
- B. Provide support structures as required for various fixture installation locations such as under ductwork or other work that prevents fixture mounting to building structure.

1.7 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. LED Fixtures: 1 for each type

1.8 WARRANTY

- A. Special Warranty for LED luminaires: Manufacturer's standard form in which the luminaire manufacturer agrees to repair or replace any failed components, material, or workmanship within specified warranty period.
 - 1. Warranty period for LED luminaires: Five (5) years minimum from the date of substantial completion.

1.9 DELIVERY, STORAGE, AND HANDLING

- 1. Protect finishes of exposed surfaces by applying a strippable, temporary protective covering before shipping.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In Luminaire Schedule where titles below are column or row headings that introduce lists, the following requirements apply to product selection:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.2 LUMINAIRE 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. Recessed Fixtures: Comply with NEMA LE 4.
- C. Lamp base complying with ANSI C81.61.
- D. CRI of minimum 80. CCT of 3500 K.
- E. Nominal Operating Voltage: 120 V ac.

2.3 LIGHTING FIXTURES AND COMPONENTS, GENERAL REQUIREMENTS

- A. Metal Parts: Free of burrs and sharp corners and edges.
- B. Sheet Metal Components: Steel, unless otherwise indicated. Form and support to prevent warping and sagging.
- C. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position.
- D. Reflecting surfaces shall have minimum reflectance as follows, unless otherwise indicated:
 - 1. White Surfaces: 85 percent.
 - 2. Specular Surfaces: 83 percent.
 - 3. Diffusing Specular Surfaces: 75 percent.
 - 4. Laminated Silver Metallized Film: 90 percent.
- E. Plastic Diffusers, Covers, and Globes:
 - 1. Acrylic Lighting Diffusers: 100 percent virgin acrylic plastic. High resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
 - a. Lens Thickness: At least 0.125 inch (3.175 mm) minimum unless different thickness is indicated.
 - b. UV stabilized.
 - 2. Glass: Annealed crystal glass, unless otherwise indicated.

2.4 LED SYSTEMS

- A. The LED array module or LED board and all its components shall be subject to mechanical stress.
- B. Assembly shall not be put together in such a way as to damage or destroy conducting paths of the LED circuit board.
- C. Installation of LED modules and all its components that are required for operation, including power supplies shall comply with all applicable electrical safety standards.
- D. Electrical polarity shall be clearly identified or the connectors shall be designed in a way that polarity can't be reversed when the modules are electrically plugged in.
- E. LED modules shall be installed in specifically designed housing or be tested in a housing that has the proper thermal heat sinking properties to support LED array installation.

- F. LED circuit board shall be protected by a coating against moisture and dust. The coating shall be factory applied,
- G. The LED array module shall be operated with an electronically stabilized power supply offering protection from short circuits, overload, and overheating.

2.5 EXIT SIGNS

- A. Description: Comply with UL 924; for sign colors, visibility, luminance, and lettering size, comply with authorities having jurisdiction.
- B. Internally Lighted Signs:
 - 1. Lamps for AC Operation: LEDs, 70,000 hours minimum rated lamp life.
 - 2. Self-Powered Exit Signs (Battery Type): Integral automatic charger in a self-contained power pack.
 - a. Battery: Sealed, maintenance-free, nickel-cadmium type.
 - b. Charger: Fully automatic, solid-state type with sealed transfer relay.
 - c. Operation: Relay automatically energizes lamp from battery when circuit voltage drops to 80 percent of nominal voltage or below. When normal voltage is restored, relay disconnects lamps from battery, and battery is automatically recharged and floated on charger.
 - d. Test Push Button: Push-to-test type, in unit housing, simulates loss of normal power and demonstrates unit operability.
 - e. LED Indicator Light: Indicates normal power on. Normal glow indicates trickle charge; bright glow indicates charging at end of discharge cycle.

2.6 EMERGENCY LIGHTING UNITS

- A. Description: Self-contained units complying with UL 924.
 - 1. Battery: Sealed, maintenance-free, lead-acid type.
 - 2. Charger: Fully automatic, solid-state type with sealed transfer relay.
 - 3. Operation: Relay automatically turns lamp on when power supply circuit voltage drops to 80 percent of nominal voltage or below. Lamp automatically disconnects from battery when voltage approaches deep-discharge level. When normal voltage is restored, relay disconnects lamps from battery, and battery is automatically recharged and floated on charger.
 - 4. Test Push Button: Push-to-test type, in unit housing, simulates loss of normal power and demonstrates unit operability.
 - 5. LED Indicator Light: Indicates normal power on. Normal glow indicates trickle charge; bright glow indicates charging at end of discharge cycle.

2.7 LIGHTING FIXTURE SUPPORT COMPONENTS

- A. Comply with Division 26 Section "Hangers and Supports for Electrical Systems" for channel- and angle-iron supports and nonmetallic channel and angle supports.
- B. Single-Stem Hangers: 1/2-inch (13-mm) steel tubing with swivel ball fittings and ceiling canopy. Finish same as fixture.
- C. Twin-Stem Hangers: Two, 1/2-inch (13-mm) steel tubes with single canopy designed to mount a single fixture. Finish same as fixture.
- D. Wires: ASTM A 641/A 641M, Class 3, soft temper, zinc-coated steel, 12 gage (2.68 mm).
- E. Rod Hangers: 3/16-inch (5-mm) minimum diameter, cadmium-plated, threaded steel rod.
- F. Hook Hangers: Integrated assembly matched to fixture and line voltage and equipped with threaded attachment, cord, and locking-type plug.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine roughing-in for luminaire to verify actual locations of luminaire and electrical connections before fixture installation. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Comply with NECA 1.
- B. Install luminaires level, plumb, and square with ceilings and walls unless otherwise indicated.
- C. Supports:
 - 1. Sized and rated for luminaire weight.
 - 2. Able to maintain luminaire position after cleaning and maintenance.
 - 3. Provide support for luminaire without causing deflection of ceiling or wall.
 - 4. Luminaire mounting devices shall be capable of supporting a horizontal force of 100 percent of luminaire weight and vertical force of 400 percent of luminaire weight.
- D. Flush-Mounted Luminaire Support:
 - 1. Secured to outlet box.

2. Attached to ceiling structural members at four points equally spaced around circumference of luminaire.
3. Trim ring flush with finished surface.

E. Wall-Mounted Luminaire Support:

1. Attached to structural members in walls.
2. Do not attach luminaires directly to gypsum board.

3.3 IDENTIFICATION

- A. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Section 260553 "Identification for Electrical Systems."

3.4 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:

1. Operational Test: After installing luminaires, switches, and accessories, and after electrical circuitry has been energized, test units to confirm proper operation.
2. Test for Emergency Lighting: Interrupt power supply to demonstrate proper operation. Verify transfer from normal power to battery power and retransfer to normal.

B. Luminaire will be considered defective if it does not pass operation tests and inspections.

C. Test for Emergency Lighting: Interrupt power supply to demonstrate proper operation. Verify transfer from normal power to battery and retransfer to normal.

D. Prepare test and inspection reports.

END OF SECTION 265100

SECTION 265600 – EXTERIOR LIGHTING

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Examine all other Sections of the Specifications for requirements that affect work under this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

1.2 SUMMARY

- A. Section Includes:
 - 1. Exterior luminaires with lamps and ballasts.
 - 2. Luminaire-mounted photoelectric relays.
 - 3. Poles and accessories.
- B. Related Sections:
 - 1. Section 265100 "Interior Lighting" for exterior luminaires normally mounted on exterior surfaces of buildings.

1.3 DEFINITIONS

- A. CCT: Correlated color temperature.
- B. CRI: Color-rendering index.
- C. HID: High-intensity discharge.
- D. LED: Light emitting diode.
- E. LER: Luminaire efficacy rating.
- F. Luminaire: Complete lighting fixture, including ballast housing if provided.
- G. Pole: Luminaire support structure, including tower used for large area illumination.

- H. Standard: Same definition as "Pole" above.

1.4 SUBMITTALS

- A. Product Data: For each luminaire, pole, and support component, arranged in order of lighting unit designation. Include data on features, accessories, finishes, and the following:
1. Physical description of luminaire, including materials, dimensions, effective projected area, and verification of indicated parameters.
 2. Details of attaching luminaires and accessories.
 3. Details of installation and construction.
 4. Luminaire materials.
 5. Photometric data based on laboratory tests of each luminaire type, complete with indicated lamps, ballasts, and accessories.
 6. Retain one of first two subparagraphs below. Retain "Testing Agency Certified Data" Subparagraph if photometric data for one or more luminaires are based on independent laboratory tests; coordinate with the Exterior Lighting Device Schedule on Drawings to indicate which units are required to meet this requirement. Retain "Manufacturer Certified Data" Subparagraph if photometric data based on testing by accredited manufacturers' laboratories are considered adequate for all exterior luminaires in this Project. See Evaluations.
 7. Photoelectric relays.
 8. Ballasts, including energy-efficiency data.
 9. Lamps, including life, output, CCT, CRI, lumens, and energy-efficiency data.
 10. Materials, dimensions, and finishes of poles.
 11. Means of attaching luminaires to supports, and indication that attachment is suitable for components involved.
 12. Anchor bolts for poles.
 13. Manufactured pole foundations.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
 2. Anchor-bolt templates keyed to specific poles and certified by manufacturer.
 3. Design calculations, certified by a qualified professional engineer, indicating strength of screw foundations and soil conditions on which they are based.
 4. Wiring Diagrams: For power, signal, and control wiring.
- C. Samples: For products designated for sample submission in the Exterior Lighting Device Schedule. Each Sample shall include lamps and ballasts.

1.5 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. Glass and Plastic Lenses, Covers, and Other Optical Parts: One for every 100 of each type and rating installed. Furnish at least one of each type.
 - 2. Ballasts: One for every 100 of each type and rating installed. Furnish at least one of each type.

1.6 QUALITY ASSURANCE

- A. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by manufacturers' laboratories that are accredited under the National Volunteer Laboratory Accreditation Program for Energy Efficient Lighting Products.
- B. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by an independent agency, with the experience and capability to conduct the testing indicated, that is an NRTL as defined by OSHA in 29 CFR 1910.
- C. 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.
- D. Comply with IEEE C2, "National Electrical Safety Code."
- E. Comply with NFPA 70.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Package aluminum poles for shipping according to ASTM B 660.
- B. Store poles on decay-resistant-treated skids at least 12 inches (300 mm) above grade and vegetation. Support poles to prevent distortion and arrange to provide free air circulation.
- C. Retain factory-applied pole wrappings on metal poles until right before pole installation. For poles with nonmetallic finishes, handle with web fabric straps.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, product(s) indicated on Drawings.

2.2 GENERAL REQUIREMENTS FOR LUMINAIRES

- A. Luminaires shall comply with UL 1598 and be listed and labeled for installation in wet locations by an NRTL acceptable to authorities having jurisdiction.
 - 1. LER Tests HID Fixtures: Where LER is specified, test according to NEMA LE 5B.
- B. Lateral Light Distribution Patterns: Comply with IESNA RP-8 for parameters of lateral light distribution patterns indicated for luminaires.
- C. Metal Parts: Free of burrs and sharp corners and edges.
- D. Sheet Metal Components: Corrosion-resistant aluminum unless otherwise indicated. Form and support to prevent warping and sagging.
- E. Housings: Rigidly formed, weather- and light-tight enclosures that will not warp, sag, or deform in use. Provide filter/breather for enclosed luminaires.
- F. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit re-lamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during re-lamping and when secured in operating position. Doors shall be removable for cleaning or replacing lenses. Designed to disconnect ballast when door opens.
- G. Exposed Hardware Material: Stainless steel.
- H. Plastic Parts: High resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
- I. Light Shields: Metal baffles, factory installed and field adjustable, arranged to block light distribution to indicated portion of normally illuminated area or field.
- J. Reflecting surfaces shall have minimum reflectance as follows unless otherwise indicated:
 - 1. White Surfaces: 85 percent.
 - 2. Specular Surfaces: 83 percent.
 - 3. Diffusing Specular Surfaces: 75 percent.
- K. Lenses and Refractors Gaskets: Use heat- and aging-resistant resilient gaskets to seal and cushion lenses and refractors in luminaire doors.
- L. Luminaire Finish: Manufacturer's standard paint applied to factory-assembled and -tested luminaire before shipping. Where indicated, match finish process and color of pole or support materials.
- M. Factory-Applied Finish for Steel Luminaires: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

1. Surface Preparation: Clean surfaces to comply with SSPC-SP 1, "Solvent Cleaning," to remove dirt, oil, grease, and other contaminants that could impair paint bond. Grind welds and polish surfaces to a smooth, even finish. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1, "White Metal Blast Cleaning," or SSPC-SP 8, "Pickling."
 2. Exterior Surfaces: Manufacturer's standard finish consisting of one or more coats of primer and two finish coats of high-gloss, high-build polyurethane enamel.
 - a. Color: As selected from manufacturer's standard catalog of colors.
 - b. Color: Match Architect's sample of [manufacturer's standard] [custom] color.
 - c. Color: As selected by Architect from manufacturer's full range.
- N. Factory-Applied Finish for Aluminum Luminaires: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
1. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
 2. Natural Satin Finish: Provide fine, directional, medium satin polish (AA-M32); buff complying with AA-M20; and seal aluminum surfaces with clear, hard-coat wax.
 3. Class I, Clear Anodic Finish: AA-M32C22A41 (Mechanical Finish: medium satin; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, clear coating 0.018 mm or thicker) complying with AAMA 611.
 4. Class I, Color Anodic Finish: AA-M32C22A42/A44 (Mechanical Finish: medium satin; 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.

2.3 LUMINAIRE-MOUNTED PHOTOELECTRIC RELAYS

- A. Comply with UL 773 or UL 773A.
- B. Contact Relays: Factory mounted, single throw, designed to fail in the on position, and factory set to turn light unit on at 1.5 to 3 fc and off at 4.5 to 10 fc with 15-second minimum time delay.
1. Relay with locking-type receptacle shall comply with ANSI C136.10.
 2. Adjustable window slide for adjusting on-off set points.

2.4 LED FIXTURES

- A. Requirements for LED Fixtures
1. Minimal Characteristics
 - a. CRI: 80
 - b. Lamp Life: 100,000 hrs

- c. Color Temperature: 4000 K.
- 2. LED fixtures, lamps, and drivers shall meet the following standards.
 - a. IES LM-79-2008, Approved Method for the Electrical and Photometric Testing of Solid-State Lighting Devices
 - b. IES LM-80-2008, Approved Method for Measuring Lumen Depreciation of LED Light Sources
 - c. IES TM-21-2011, Projecting Long Term Lumen Maintenance of LED Light Sources
 - d. NEMA SSL 1-2010, Electronic Drivers for LED Devices, Arrays, or Systems
 - e. NEMA SSL 4-2012, Retrofit Lamps: Minimum Performance Requirements
 - f. NEMA SSL 6-2010, Solid State Lighting for Incandescent Replacement—Dimming
 - g. ANSI/NEMA/ANSLG C78.377. Specifications for the Chromaticity of Solid State Lighting Products
- 3. Outdoor applications: Luminaires shall comply with UL 1598 and be listed and labeled for installation in wet locations by an NRTL acceptable to authorities having jurisdiction.
- 4. Lateral Light Distribution Patterns: Comply with IESNA RP-8 for parameters of lateral light distribution patterns indicated for luminaires

2.5 GENERAL REQUIREMENTS FOR POLES AND SUPPORT COMPONENTS

- A. Structural Characteristics: Comply with AASHTO LTS-4-M.
 - 1. Wind-Load Strength of Poles: Adequate at indicated heights above grade without failure, permanent deflection, or whipping in steady winds of speed indicated in "Structural Analysis Criteria for Pole Selection" Article.
 - 2. Strength Analysis: For each pole, multiply the actual equivalent projected area of luminaires and brackets by a factor of 1.1 to obtain the equivalent projected area to be used in pole selection strength analysis.
- B. Luminaire Attachment Provisions: Comply with luminaire manufacturers' mounting requirements. Use stainless-steel fasteners and mounting bolts unless otherwise indicated.
- C. Mountings, Fasteners, and Appurtenances: Corrosion-resistant items compatible with support components.
 - 1. Materials: Shall not cause galvanic action at contact points.
 - 2. Anchor Bolts, Leveling Nuts, Bolt Caps, and Washers: Hot-dip galvanized after fabrication unless otherwise indicated.
 - 3. Anchor-Bolt Template: Plywood or steel.
- D. Concrete Pole Foundations: Cast in place, with anchor bolts to match pole-base flange. Concrete, reinforcement, and formwork are specified in Section 033000 "Cast-in-Place Concrete."

2.6 ALUMINUM POLES

- A. Source Limitations: Obtain poles from single manufacturer or producer compatible with the luminaire.
- B. Source Limitations: For poles, obtain each color, grade, finish, type, and variety of pole from single source with resources to provide products of consistent quality in appearance and physical properties.
 - 1. Shape: Tapered, fluted, decorative.
 - 2. Mounting Provisions: Butt flange for bolted mounting on foundation or breakaway support.
 - 3. Provide with decorative flared base cover.
- C. Brackets for Luminaires: Detachable, cantilever, without underbrace.
 - 1. Adaptor fitting welded to pole, allowing the bracket to be bolted to the pole-mounted adaptor, then bolted together with stainless-steel bolts.
 - 2. Cross Section: Tapered oval, with straight tubular end section to accommodate luminaire. Match pole material and finish.
- D. Pole-Top Tenons: Fabricated to support luminaire or luminaires and brackets indicated, and securely fastened to pole top.
- E. Grounding and Bonding Lugs: Welded 1/2-inch (13-mm) threaded lug, complying with requirements in Section 260526 "Grounding and Bonding for Electrical Systems," listed for attaching grounding and bonding conductors of type and size indicated, and accessible through handhole.
- F. Handhole: Oval shaped, with minimum clear opening of 2-1/2 by 5 inches with cover secured by stainless-steel captive screws.
- G. Prime-Coat Finish: Manufacturer's standard prime-coat finish ready for field painting.
- H. Factory-Painted Finish: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" recommendations for applying and designating finishes.
 - 1. Surface Preparation: Clean surfaces according to SSPC-SP 1 to remove dirt, oil, grease, and other contaminants that could impair paint bond. Grind welds and polish surfaces to a smooth, even finish. Remove mill scale and rust, if present, from uncoated steel, according to SSPC-SP 5/NACE No. 1 or SSPC-SP 8.
 - 2. Interior Surfaces of Pole: One coat of bituminous paint, or otherwise treat for equal corrosion protection.
 - 3. Exterior Surfaces: Manufacturer's standard finish consisting of one or more coats of primer and two finish coats of high gloss, high-build polyurethane enamel.

2.7 STEEL POLES

- A. Poles: Comply with ASTM A 500, Grade B, carbon steel with a minimum yield of 46,000 psig (317 MPa); one-piece construction up to 40 feet (12 m) in height with access handhole in pole wall.
- B. Brackets for Luminaires: Detachable, cantilever, without underbrace.
 - 1. Adapter fitting welded to pole, allowing the bracket to be bolted to the pole mounted adapter, then bolted together with stainless-steel bolts.
 - 2. Cross Section: Tapered oval, with straight tubular end section to accommodate luminaire.
 - 3. Match pole material and finish.
- C. Pole-Top Tenons: Fabricated to support luminaire or luminaires and brackets indicated, and securely fastened to pole top.
- D. Grounding and Bonding Lugs: Welded 1/2-inch (13-mm) threaded lug, complying with requirements in Section 260526 "Grounding and Bonding for Electrical Systems," listed for attaching grounding and bonding conductors of type and size listed in that Section, and accessible through handhole.
- E. Prime-Coat Finish: Manufacturer's standard prime-coat finish ready for field painting.
- F. Galvanized Finish: After fabrication, hot-dip galvanize complying with ASTM A 123/A 123M.
- G. Factory-Painted Finish: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
 - 1. Surface Preparation: Clean surfaces to comply with SSPC-SP 1, "Solvent Cleaning," to remove dirt, oil, grease, and other contaminants that could impair paint bond. Grind welds and polish surfaces to a smooth, even finish. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1, "White Metal Blast Cleaning," or with SSPC-SP 8, "Pickling."
 - 2. Interior Surfaces of Pole: One coat of bituminous paint, or otherwise treat for equal corrosion protection.
 - 3. Exterior Surfaces: Manufacturer's standard finish consisting of one or more coats of primer and two finish coats of high-gloss, high-build polyurethane enamel.

2.8 GENERAL FINISH REQUIREMENTS

- A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 LUMINAIRE INSTALLATION

- A. Install lamps in each luminaire.
- B. Fasten luminaire to indicated structural supports.
 - 1. Use fastening methods and materials selected to resist seismic forces defined for the application and approved by manufacturer.

3.2 POLE INSTALLATION

- A. Alignment: Align pole foundations and poles for optimum directional alignment of luminaires and their mounting provisions on the pole.
- B. Concrete Pole Foundations: Set anchor bolts according to anchor-bolt templates furnished by pole manufacturer. Concrete materials, installation, and finishing requirements are specified in Section 033000 "Cast-in-Place Concrete."
- C. Foundation-Mounted Poles: Mount pole with leveling nuts, and tighten top nuts to torque level recommended by pole manufacturer.
 - 1. Use anchor bolts and nuts selected to resist seismic forces defined for the application and approved by manufacturer.
 - 2. Grout void between pole base and foundation. Use non-shrink or expanding concrete grout firmly packed to fill space.
 - 3. Install base covers unless otherwise indicated.
 - 4. Use a short piece of 1/2-inch- (13-mm-) diameter pipe to make a drain hole through grout. Arrange to drain condensation from interior of pole.

3.3 BOLLARD LUMINAIRE INSTALLATION

- A. Align units for optimum directional alignment of light distribution.
- B. Install on concrete base above finished grade or surface at bollard location. Cast conduit into base, and shape base to match shape of bollard base. Finish by troweling and rubbing smooth. Concrete materials, installation, and finishing are specified in Section 033000 "Cast-in-Place Concrete."

3.4 INSTALLATION OF INDIVIDUAL GROUND-MOUNTING LUMINAIRES

- A. Install on concrete base with top at grade.

3.5 GROUNDING

- A. Ground metal poles and support structures according to Section 260526 "Grounding and Bonding for Electrical Systems."
 - 1. Install grounding electrode for each pole unless otherwise indicated.
 - 2. Install grounding conductor pigtail in the base for connecting luminaire to grounding system.

3.6 FIELD QUALITY CONTROL

- A. Inspect each installed fixture for damage. Replace damaged fixtures and components.
- B. Illumination Observations: Verify normal operation of lighting units after installing luminaires and energizing circuits with normal power source.
 - 1. Verify operation of photoelectric controls.
- C. Illumination Tests:
 - 1. Measure light intensities at night. Use photometers with calibration referenced to NIST standards. Comply with the following IESNA testing guide(s):
 - a. IESNA LM-5, "Photometric Measurements of Area and Sports Lighting Installations."
 - b. IESNA LM-50, "Photometric Measurements of Roadway Lighting Installations."
 - c. IESNA LM-52, "Photometric Measurements of Roadway Sign Installations."
 - d. IESNA LM-64, "Photometric Measurements of Parking Areas."
 - e. IESNA LM-72, "Directional Positioning of Photometric Data."
- D. Prepare a written report of tests, inspections, observations, and verifications indicating and interpreting results. If adjustments are made to lighting system, retest to demonstrate compliance with standards.

END OF SECTION 265600

SECTION 311000 - SITE CLEARING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Earth stripping and stockpiling.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Sedimentation Barrier: See Section 312500 - Temporary Erosion and Sediment Control.

PART 3 EXECUTION

3.1 PREPARATION

- A. Coordinate work with utility companies; notify before starting work and comply with local requirements; obtain required permits.
- B. Protect existing utilities to remain from damage.
- C. Do not disrupt public utilities without permit from authority having jurisdiction.
- D. Protect existing structures and other elements that are to remain.

3.2 EARTH STRIPPING AND STOCKPILING

- A. Stripping:
 - 1. Remove topsoil within identified area:
 - a. According to soil report.
 - 2. Remove topsoil within identified area as indicated on drawings.
- B. Stockpiling:
 - 1. Place topsoil in identified areas as indicated on drawings:
 - a. Pile depth not to exceed 8 feet.

3.3 CLEANING

- A. See Section 017000 - Execution and Closeout Requirements for additional requirements.
- B. Remove unused stockpiled subsoil. Grade stockpile area to prevent standing water.

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C. Leave site clean and ready to receive work.

END OF SECTION

SECTION 312200 - GRADING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Rough grading.
- B. Fine grading.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify survey bench mark and intended elevations for grading areas are as indicated.
- B. Verify the absence of standing or ponding water.

3.2 PREPARATION

- A. Identify required lines, levels, contours, and datum.
- B. Stake and flag locations of known utilities.
- C. Provide temporary means and methods to remove standing or ponding water from areas prior to grading.

3.3 ROUGH GRADING

- A. Excavate and fill subgrade material to elevations indicated on plans.
- B. Remove and replace unsuitable materials as specified fill.

3.4 FINE GRADING

- A. Scrape and spread subgrade material uniformly smooth and without disruptions as indicated on drawings.

END OF SECTION

SECTION 312316 - EXCAVATION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Excavating for footings, slabs-on-grade, paving, and site structures.
- B. Temporary excavation support and protection systems.

1.2 RELATED REQUIREMENTS

- A. Section 312316.13 - Trenching: Excavating for utility trenches outside the building to utility main connections.
- B. Section 312323 - Fill: Fill materials, backfilling, and compacting.

1.3 DEFINITIONS

- A. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.
 - 1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Architect. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
 - 2. Bulk Excavation: Excavation more than 10 feet in width and more than 30 feet in length.
 - 3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Architect. Unauthorized excavation, as well as remedial work directed by Architect, shall be without additional compensation
- B. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material that exceed 1 cu. yd. or more in volume that exceed a standard penetration resistance of 100 blows/2 inches when tested by a geotechnical testing agency, according to ASTM D1586.
- C. 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.
- D. Utilities: On-site underground pipes, conduits, ducts, and cables as well as underground services within buildings.

1.4 REFERENCE STANDARDS

- A. 29 CFR 1926 - Safety and Health Regulations for Construction; Current Edition.

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- B. ASTM D1586 - Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils; 2018.
- C. ASTM D3740 - Standard Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction; 2023.
- D. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection; 2023.

1.5 SUBMITTALS

- A. See Section 013300 - Submittal Procedures, for submittal procedures.
- B. Field Quality Control Submittals: Document visual inspection of load-bearing excavated surfaces.
- C. Preexcavation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by excavation operations. Submit before excavation begins.

1.6 QUALITY ASSURANCE

- A. Geotechnical Testing Agency Qualifications: Qualified according to ASTM E329 and ASTM D3740 for testing indicated.

1.7 FIELD CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth-moving operations.
 - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
- B. Utility Locator Service: Notify UDig NY for area where Project is located before beginning earth-moving operations.
- C. Do not commence excavation operations until temporary site fencing and erosion- and sedimentation-control measures as specified are in place.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Bedding and Fill to Correct Over-Excavation:
 - 1. See Section 312323 for bedding and corrective fill materials at general excavations.
 - 2. See Section 312316.13 for bedding and corrective fill materials at utility trenches.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that survey bench mark and intended elevations for the work are as indicated.

3.2 PREPARATION

- A. Identify required lines, levels, contours, and datum locations.
- B. Locate, identify, and protect utilities that remain and protect from damage.
- C. Grade top perimeter of excavation to prevent surface water from draining into excavation. Provide temporary means and methods, as required, to maintain surface water diversion until no longer needed, or as directed by Architect.
- D. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth-moving operations.
- E. Protect and maintain erosion and sedimentation controls during earth-moving operations.
- F. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

3.3 DEWATERING

3.4 TEMPORARY EXCAVATION SUPPORT AND PROTECTION

- A. Excavation Safety: Comply with OSHA's Excavation Standard, 29 CFR 1926, Subpart P.

3.5 EXCAVATION, GENERAL

- A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.
 - 1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.
 - 2. Remove rock to lines and grades indicated to permit installation of permanent construction without exceeding the following dimensions:
 - a. 24 inches outside of concrete forms other than at footings.
 - b. 12 inches outside of concrete forms at footings.
 - c. 6 inches outside of minimum required dimensions of concrete cast against grade.
 - d. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.
 - e. 6 inches beneath bottom of concrete slabs-on-grade.

- f. 6 inches beneath pipe in trenches and the greater of 24 inches wider than pipe or 42 inches wide.

3.6 EXCAVATION FOR STRUCTURES

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

3.7 EXCAVATION FOR WALKS AND PAVEMENTS

- A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

3.8 EXCAVATING

- A. Excavate to accommodate new structures and construction operations.
 - 1. Excavate to the specified elevations.
 - 2. Excavate to the length and width required to safely install, adjust, and remove any forms, bracing, or supports necessary for the installation of the work.
 - 3. Hand trim excavations. Remove loose matter.
- B. Notify Architect of unexpected subsurface conditions and discontinue affected Work in area until notified to resume work.
- C. Do not interfere with 45 degree bearing splay of existing foundations.

3.9 SUBGRADE PREPARATION

- A. See Section 312323 for subgrade preparation at general excavations.

3.10 REPAIR

- A. Correct areas that are over-excavated and load-bearing surfaces that are disturbed; see Section 312323.

3.11 FIELD QUALITY CONTROL

- A. See Section 014000 - Quality Requirements, for general requirements for field inspection and testing.
- B. Provide for visual inspection of load-bearing excavated surfaces by Architect before placement of foundations.

3.12 PROTECTION

- A. Divert surface flow from rains or water discharges from the excavation.

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- B. Prevent displacement of banks and keep loose soil from falling into excavation; maintain soil stability.
- C. Protect open excavations from rainfall, runoff, freezing groundwater, or excessive drying so as to maintain foundation subgrade in satisfactory, undisturbed condition.
- D. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.
- E. Keep excavations free of standing water and completely free of water during concrete placement.

END OF SECTION

SECTION 312316.13 - TRENCHING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Trench excavation, bedding, backfilling and compacting for utilities outside the building.

1.2 DEFINITIONS

- A. Backfill: Soil material or controlled low-strength material used to fill an excavation.
- B. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.
- C. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below utility or bedding course.
- D. Utilities: On-site underground pipes, conduits, ducts, and cables.

1.3 REFERENCE STANDARDS

- A. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2023.
- B. ASTM D448 - Standard Classification for Sizes of Aggregate for Road and Bridge Construction; 2012 (Reapproved 2022).
- C. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)); 2012 (Reapproved 2021).
- D. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)); 2012 (Reapproved 2021).
- E. ASTM D2940/D2940M - Standard Specification for Graded Aggregate Material for Bases or Subbases for Highways or Airports; 2020.
- F. ASTM D3740 - Standard Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction; 2023.
- G. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection; 2023.

1.4 SUBMITTALS

- A. See Section 013300 - Submittal Procedures, for submittal procedures.
- B. Temporary Support and Trenching Protection Plan.

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- C. Shoring Installer's Qualification Statement.
- D. Compaction Density Test Reports.

1.5 QUALITY ASSURANCE

- A. Temporary Support and Excavation Protection Plan:
- B. Designer Qualifications: For design of temporary shoring and bracing, employ a Professional Engineer experienced in design of this type of work and licensed in the State in which the Project is located.
- C. Shoring Installer Qualifications: Company specializing in performing the shoring and bracing work of this section with minimum 5 years of documented experience.
- D. Geotechnical Testing Agency Qualifications: Qualified according to ASTM E329 and ASTM D3740 for testing indicated.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. When necessary, store materials on site in advance of need.

PART 2 PRODUCTS

2.1 FILL MATERIALS

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
- B. Satisfactory Soils: Soil Classification Groups GW, GP, GM, SW, SP, and SM according to ASTM D2487, or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
- C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D2487, or a combination of these groups.
 - 1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- D. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; except with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve.
- E. Filter Material: Narrowly graded mixture of natural or crushed gravel, or crushed stone and natural sand; ASTM D448; coarse-aggregate grading Size 67; with 100 percent passing a 1-inch sieve and zero to 5 percent passing a No. 4 sieve.
- F. Sand: ASTM C33/C33M; fine aggregate.

2.2 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

3.1 EXAMINATION

- A. Verify that survey bench marks and intended elevations for the work are as indicated.

3.2 PREPARATION

- A. Identify required lines, levels, contours, and datum locations.
- B. Grade top perimeter of trenching area to prevent surface water from draining into trench. Provide temporary means and methods, as required, to maintain surface water diversion until no longer needed, or as directed by the Architect.

3.3 TRENCHING

- A. Notify Architect of unexpected subsurface conditions and discontinue affected Work in area until notified to resume work.
- B. Excavate trenches to indicated gradients, lines, depths, and elevations.
- C. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit unless otherwise indicated.
 - 1. Clearance: As shown on details..
- D. The depth of trench for water pipe shall permit the pipe to be laid with its top surface a minimum of 4.5-feet below the undisturbed grade ground level or finished pavement surface at the centerline, whichever is the lowest elevation, unless otherwise noted on the plans.
- E. Trench excavation may be made by such machinery or methods that will not cause injury to trees, public utilities, buildings or existing structures above or below ground.

- F. Trench shall be excavated only as deep as necessary to bring the pipe to the required elevation. Excess excavation beyond the depth necessary to bring the pipe to the required elevation except that necessary for joint holes, shall be refilled with selected material backfill for bedding, solidly rammed into place before the pipe is laid.
- G. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.
 - 1. For pipes and conduit less than 6 inches in nominal diameter, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
 - 2. For pipes and conduit 6 inches or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe or conduit circumference. Fill depressions with tamped sand backfill.
 - 3. For flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support conduit on an undisturbed subgrade.
 - 4. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.
- H. Trench Bottoms: Excavate trenches 4 inches deeper than bottom of pipe and conduit elevations to allow for bedding course. Hand-excavate deeper for bells of pipe.
 - 1. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.
- I. Slope banks of excavations deeper than 4 feet to angle of repose or less until shored.
- J. Do not interfere with 45 degree bearing splay of foundations.
- K. Cut trenches wide enough to allow inspection of installed utilities.
- L. Hand trim excavations. Remove loose matter.
- M. Remove excavated material that is unsuitable for re-use from site.
- N. Remove excess excavated material from site.
- O. Provide temporary means and methods, as required, to remove all water from trenching until directed by the Architect. Remove and replace soils deemed unsuitable by classification and which are excessively moist due to lack of dewatering or surface water control.
- P. Determine the prevailing groundwater level prior to trenching. If the proposed trench extends less than 1 foot into the prevailing groundwater, control groundwater intrusion with perimeter drains routed to sump pumps, or as directed by the Architect.

3.4 EXCAVATION SUPPORT AND PROTECTION

- A. Where required to properly support the surfaces of excavations, sheeting, bracing and shoring shall be provided. The Contractor shall submit drawings and calculations prepared and sealed by a Professional Engineer registered in the State in which the Project is located.

- B. The Contractor shall be wholly responsible for designing, installing and operating the system necessary to accomplish satisfactory sheeting, bracing and protection. In the removing of sheeting and bracing after the construction has been completed, special care shall be taken to prevent any caving of the sides of excavation and damage to the completed work or to adjacent property.
- C. Sheeting, bracing and shoring shall not be left in place after completion of the work except as acceptable to the Owner.

3.5 UNAUTHORIZED EXCAVATION

- A. Unauthorized excavation consists of removal and disposal of materials beyond indicated subgrade elevations or dimensions. Unauthorized excavation, as well as remedial work, shall be at Contractor's expense.
- B. Unauthorized excavations shall be backfilled and compacted as specified for classified excavations or backfill and compact excess excavations as specified for excavations of same classifications, or as determined in the field by the Architect.

3.6 PREPARATION FOR UTILITY PLACEMENT

- A. Cut out soft areas of subgrade not capable of compaction in place. Backfill with general fill.
- B. Compact subgrade to density equal to or greater than requirements for subsequent fill material.
- C. Until ready to backfill, maintain excavations and prevent loose soil from falling into excavation.

3.7 BEDDING

- A. Gravity Sewer Pipe:
 - 1. Bedding material from the trench bottom up to the centerline of the pipe. See trench details for limits.
- B. Water Pipe 16-Inches Diameter and Smaller:
 - 1. Bedding material from the trench bottom up to 6-inches above the crown of the pipe. See trench details for limits.

3.8 BACKFILLING

- A. Place backfill on subgrades free of mud, frost, snow, or ice.
- B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
- C. Initial Backfill:
 - 1. Soil Backfill: Place and compact initial backfill of subbase material free of particles larger than 1 inch in any dimension, to a height of 12 inches over the pipe.

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2. Controlled Low-Strength Material: Place initial backfill of controlled low-strength material to a height of 12 inches over the pipe or conduit. Coordinate backfilling with utilities testing.
 - D. Final Backfill:
 1. Soil Backfill: Place and compact final backfill of satisfactory soil to final subgrade elevation.
 2. Controlled Low-Strength Material: Place final backfill of controlled low-strength material to final subgrade elevation.
 - E. Backfill to contours and elevations indicated using unfrozen materials.
 - F. Fill up to subgrade elevations unless otherwise indicated.
 - G. Employ a placement method that does not disturb or damage other work.
 - H. Maintain optimum moisture content of fill materials to attain required compaction density.
 - I. Correct areas that are over-excavated.
 1. Other areas: Use general fill, flush to required elevation, compacted to minimum 97 percent of maximum dry density.
 - J. Compaction Density Unless Otherwise Specified or Indicated:
 1. Control soil compaction during construction, providing minimum percentage of density specified for each area classification. Compact soils to not less than the following percentages of dry density for soils which exhibit a well-defined moisture density relationship determined in accordance with ASTM D1557.
 2. Under paving, slabs-on-grade, and similar construction: 95 percent of maximum dry density.
 3. At lawns and unpaved areas: 85 percent of maximum dry density.
 - K. Reshape and re-compact fills subjected to vehicular traffic.
 - L. Warning Tape: Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs
- 3.9 TOLERANCES
- A. Top Surface of General Backfilling: Plus or minus 1 inch from required elevations.
- 3.10 FIELD QUALITY CONTROL
- A. See Section 014000 - Quality Requirements, for general requirements for field inspection and testing.
 - B. Evaluate results in relation to compaction curve determined by testing uncompacted material in accordance with ASTM D1557 ("modified Proctor") or ASTM D698 ("standard Proctor").
 - C. If tests indicate work does not meet specified requirements, remove work, replace and retest.

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D. Frequency of Tests: 1 per 500 linear feet.

END OF SECTION

SECTION 312323 - FILL

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Filling, backfilling, and compacting for footings, slabs-on-grade, and site structures.
- B. Backfilling and compacting for utilities outside the building to utility main connections.

1.2 RELATED REQUIREMENTS

1.3 DEFINITIONS

- A. Backfill: Soil material or controlled low-strength material used to fill an excavation.
- B. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.
- C. Fill: Soil materials used to raise existing grades.
- D. 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.
- E. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.
- F. Utilities: On-site underground pipes, conduits, ducts, and cables as well as underground services within buildings.

1.4 REFERENCE STANDARDS

- A. AASHTO T 180 - Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop; 2022, with Errata .
- B. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)); 2012 (Reapproved 2021).
- C. ASTM D1556/D1556M - Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method; 2015, with Editorial Revision (2016).
- D. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)); 2012 (Reapproved 2021).
- E. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method; 2015.

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- F. ASTM D2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System); 2017, with Editorial Revision (2020).
- G. ASTM D3740 - Standard Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction; 2023.
- H. ASTM D6938 - Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth); 2023.
- I. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection; 2023.

1.5 SUBMITTALS

- A. See Section 013300 - Submittal Procedures, for submittal procedures.
- B. Fill Composition Test Reports: Results of laboratory tests on proposed and actual materials used.
 - 1. Classification according to ASTM D2487.
 - 2. Laboratory compaction curve according to ASTM D698.
- C. Compaction Density Test Reports.
- D. Testing Agency Qualification Statement.

1.6 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section. Qualified according to ASTM E329 and ASTM D3740 for testing indicated.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. When necessary, store materials on site in advance of need.

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 Owner and authorities having jurisdiction.
 - 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- B. Utility Locator Service: Notify UDig NY for area where Project is located before beginning earth-moving operations.

PART 2 PRODUCTS

2.1 FILL MATERIALS

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
- B. Satisfactory Soils: Soil Classification Groups GW, GP, GM, SW, SP, and SM according to ASTM D2487, or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
- C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D2487, or a combination of these groups.
 - 1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- D. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; with at least 90 percent passing a 1-1/2-inch (37.5-mm) sieve and not more than 12 percent passing a No. 200 (0.075-mm) sieve.

2.2 SOURCE QUALITY CONTROL

- A. See Section 014000 - Quality Requirements, for general requirements for testing and analysis of soil material.
- B. If tests indicate materials do not meet specified requirements, change material and retest.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Identify required lines, levels, contours, and datum locations.
- B. Verify areas to be filled are not compromised with surface or ground water.

3.2 PREPARATION

- A. Notify Architect when excavations have reached required subgrade.
- B. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Testing Agency, without additional compensation.
- C. Cut out soft areas of subgrade not capable of compaction in place. Backfill with engineered fill.
- D. Compact subgrade to density equal to or greater than requirements for subsequent fill material.
- E. Until ready to fill, maintain excavations and prevent loose soil from falling into excavation.

3.3 STORAGE OF SOIL MATERIALS

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

3.4 FILLING

- A. Fill to contours and elevations indicated using unfrozen materials.
- B. Fill up to subgrade elevations unless otherwise indicated.
- C. Employ a placement method that does not disturb or damage other work.
- D. Maintain optimum moisture content of fill materials to attain required compaction density.
- E. Slope grade away from building minimum 2 inches in 10 feet, unless noted otherwise. Make gradual grade changes. Blend slope into level areas.
- F. Correct areas that are over-excavated.
- G. Compaction Density Unless Otherwise Specified or Indicated:
 - 1. Under slabs-on-grade and similar construction: 95 percent of maximum dry density.
- H. Reshape and re-compact fills subjected to vehicular traffic.
- I. Maintain temporary means and methods, as required, to remove all water while fill is being placed as required, or until directed by the Architect. Remove and replace soils deemed unsuitable by classification and which are excessively moist due to lack of dewatering or surface water control.

3.5 FILL AT SPECIFIC LOCATIONS

3.6 SOIL MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.
 - 1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
 - 2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.7 TOLERANCES

- A. Top Surface of General Filling: Plus or minus 1 inch from required elevations.
- B. Top Surface of Filling Under Interior Slab-on-Grade: Plus or minus 1/2 inch from required elevations.

3.8 FIELD QUALITY CONTROL

- A. See Section 014000 - Quality Requirements , for general requirements for field inspection and testing.
- B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.
- C. 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.
- D. Soil Fill Materials:
 - 1. Perform compaction density testing on compacted fill in accordance with ASTM D1556, ASTM D2167, or ASTM D6938.
 - 2. Evaluate results in relation to compaction curve determined by testing uncompacted material in accordance with ASTM D698 ("standard Proctor"), ASTM D1557 ("modified Proctor"), or AASHTO T 180.
 - 3. If tests indicate work does not meet specified requirements, remove work, replace and retest.
- E. Frequency of Tests: 1 per 2000 square feet, but no less than 3 tests.

3.9 CLEANING

END OF SECTION

SECTION 312500 - TEMPORARY EROSION AND SEDIMENT CONTROL

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Prevention of erosion due to construction activities.
- B. Prevention of sedimentation of waterways, open drainage ways, and storm and sanitary sewers due to construction activities.
- C. Restoration of areas eroded due to insufficient preventive measures.
- D. Compensation of Owner for fines levied by authorities having jurisdiction due to non-compliance by Contractor.

1.2 RELATED REQUIREMENTS

- A. Section 311000 - Site Clearing: Limits on clearing; disposition of vegetative clearing debris.
- B. Section 312200 - Grading: Temporary and permanent grade changes for erosion control.
- C. Section 329219 - Seeding: Permanent turf for erosion control.
- D. Section 329300 - Plants: Permanent plantings for erosion control.

1.3 REFERENCE STANDARDS

1.4 QUALITY ASSURANCE

- A. Referenced Standards for New York State:
 - 1. New York State Standards and Specifications for Erosion and Sediment Control, Soil and Water Conservation Society, Empire State Chapter, latest revision.
 - 2. New York State Department of Transportation Standard Specifications (NYSDOTSS) Section 209, latest revision.

1.5 DEFINITIONS

- A. Erosion control is any action taken or item used as part of a project or as a separate action to minimize the destructive effects of wind and water on surface soil. The use and placement of berms and dams, fiber mats, grasses, sod, mulches, slope drains, sediment basins and drainage systems may be temporary and used throughout construction, or permanent and installed for the anticipated life of the facility.
- B. NYSDEC – New York State Department of Environmental Conservation.
- C. SPDES – State Pollutant Discharge Elimination System.

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- D. MS4 – Means a city, town or village with land use control authority that is required to gain coverage under NYSDEC’s SPDES General Permit for Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s).
- E. SWPPP – Storm Water Pollution Prevention Plan.
- F. General Permit – SPDES General Permit for Stormwater Discharges from Construction Activity (currently GP-0-15-002).
- G. Qualified Inspector – Means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or other Department endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hour of training every three (3) years.

It can also mean a person the meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

- H. Qualified Professional – Means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics in order to prepare a SWPPP that conforms to the Department’s technical standard. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.
- I. Trained Contractor – Means an employee from the contracting (construction) company, identified in Part III.A.6 of the General Permit, that has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., of the General Permit, that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity).

The *trained contractor* will be responsible for the day to day implementation of the SWPPP.

1.6 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Inspection Reports: Submit report of each inspection; identify each preventive measure, indicate condition, and specify maintenance or repair required and accomplished.

1.7 CONTRACTOR RESPONSIBILITIES

- A. Site Inspections:
 - 1. Following the commencement of construction, site inspections shall be conducted by a Qualified Inspector at least once every seven (7) calendar days. If the project has been authorized to disturb greater than 5-acres of soil at any one time, the Qualified Inspector shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) site inspections must be separated by a minimum of two (2) full calendar days. During each inspection, the Qualified Inspector shall record the following information:
 - a. Inspect all sediment control practices and record the approximate degree of sediment accumulation as a percentage of the sediment storage volume (for example, 10 percent, 20 percent, and 50 percent).
 - b. Inspect all erosion and sediment control practices and record all maintenance requirements such as verifying the integrity of barrier or diversion systems (earthen berms or silt fencing) and containment systems (sediment basins and sediment traps). Identify any evidence of rill or gully erosion occurring on slopes and any loss of stabilizing vegetation or seeding/mulching. Document any excessive deposition of sediment or ponding water along barrier or diversion systems. Record the depth of sediment within containment structures, any erosion near outlet and overflow structures, and verify the ability of rock filters around perforated riser pipes to pass water.
 - c. All deficiencies that are identified with the implementation of the Erosion Control Plan.
 - 2. The Contractor shall maintain a record of all inspection reports in a site log book. The site log book shall be maintained on site and be made available to the Engineer, MS4, and/or NYSDEC and other permitting authority upon request.
- B. Stabilization: The Contractor shall initiate stabilization measures as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has

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temporarily or permanently ceased. This requirement does not apply in the following instances:

1. Where the initiation of stabilization measures by the 14th day after construction activity temporarily or permanently ceased is precluded by snow cover or frozen ground conditions, stabilization measures shall be initiated as soon as practicable.
 2. Where construction activity on a portion of the site is temporarily ceased, and earth-disturbing activities will be resumed within twenty-one (21) days, temporary stabilization measures need not be initiated on that portion of the site.
- C. Maintenance: Sediment shall be removed from sediment trapping practices whenever their capacity has been reduced by fifty (50) percent from the design capacity.
- D. Duty to Mitigate: The Contractor and its subcontractors shall take all reasonable steps to minimize or prevent erosion and sedimentation.
- E. Proper Operation and Maintenance: The Contractor shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Contractor to minimize or prevent erosion and sedimentation.

1.8 COOPERATION

- A. Examine drawings and specifications for other contracts, to determine nature of proposed construction. Perform work to conform to construction called for in such a manner as not to interfere or delay work of other Contractors.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Unless otherwise stated elsewhere in the contract documents, materials shall be as stated herein.
- B. Mulch: Mulch shall be in accordance with NYSDOTSS §713-18 Hay, §713-19 Straw, or §713-11 Wood Fiber Mulch.
- C. Gravel: See Section 312323 for aggregate.
- D. Gravel Bag: Bags shall be fabricated from reinforced woven geotextile and shall include ties. No burlap bags shall be allowed. Coarse aggregate shall meet the gradation requirements of size designation #1 or #2 of NYSDOTSS Table 703-4 and shall be used as the fill material. Each gravel bag shall be individually tied and double bagged. The bag with fill material shall be inversely inserted into the second bag in order to prevent leakage.
- E. Sand Bag: Sand bags shall meet the requirements of NYSDOTSS §209-2.09 Gravel Bag except that sand meeting the gradation requirements of NYSDOTSS §703-06 Cushion Sand shall be used as the fill material.
- F. Rolled Erosion Control Products and Soil Stabilizers: These materials shall meet the requirements of NYSDOTSS §713-07 Jute Mesh or Other Approved Erosion Control Materials and shall be of the Type and Class specified in the contract documents.

- G. Stabilized Construction Entrance: Construction entrances shall consist of a geotextile, crushed stone or gravel and, if necessary, a drainage pipe to maintain ditch flow.
 - 1. Geotextile: Geotextile shall meet the requirements of NYSDOTSS §207-2 Materials, Geotextile Stabilization, Strength Class 1.
 - 2. Crushed Stone or Gravel: Crushed stone or gravel shall be 150 mm of coarse aggregate material meeting the gradation requirements of size designation #3 on NYSDOTSS Table 703-4.
 - 3. Drainage Pipe: The Contractor shall provide a drainage pipe sized with sufficient capacity to carry ditch flow. The pipe dimension shall be consistent with the modified soil erosion and sediment control plan approved by the Engineer. The drainage pipe may consist of new or used material in satisfactory condition and suitable for the intended use. The Engineer will reject any materials determined to be unsatisfactory.
- H. Temporary Pipe Inlet/Outlet Protection: The materials used shall be as indicated on the standard sheets.

PART 3 EXECUTION

3.1 GENERAL

- A. In the event of conflict between these specification requirements and pollution control laws, rules, regulations or permit conditions by other federal or state or local government agencies, the more restrictive laws, rules or regulations shall apply.
- B. All work done under this section shall be performed consistent with NYSDOTSS §107-12 Water Quality Protection and included as part of the construction schedule submitted by the Contractor under contract General and Supplemental provisions for start and progress of work. The Contractor's schedules and methods shall be consistent with the soil erosion and sediment control plan included in the contract documents or the modified plan approved by the Engineer. The Contractor shall begin earthwork only after receiving written approval from the Engineer for the scheduling of earthwork and work covered under this section.
- C. The Contractor shall designate to the Engineer an erosion and sediment control supervisor who is a Trained Contractor with adequate experience and authority to implement and maintain all erosion and sediment control measures.
- D. Perimeter sediment controls shall be installed prior to performing grubbing, excavation, and borrow or fill operations. The Contractor shall limit the area of clearing and grubbing, excavation, borrow and embankment operations in progress, commensurate with their capability and progress in keeping the finish grading, mulching, seeding and other temporary and/or permanent control measures current in accordance with the approved schedule. Under no condition shall earth material exposed by grubbing, excavation, borrow or fill or other work be left without application of temporary or permanent erosion controls for a period of greater than 7 days. The Engineer may determine that a potential for erosion or sediment transport exists and order the Contractor to install temporary erosion controls earlier. When permanent soil erosion and sediment control measures cannot be installed due to seasonal or other limitations, temporary soil erosion and sediment control measures shall be installed. Prior to removing or disturbing any erosion or sediment control measure that may be required to be reestablished due

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to continual grading operations, the Contractor shall verify the proposed progression of operations and the reestablishment of control measures with the Engineer to ensure the continuity of erosion and sediment control.

- E. Sediment control measures shall not be removed without the Engineer's approval.
- F. No deviation from the specifications will be allowed without the written approval of the Owner's Representative.
- G. All earth berms and embankments are to be mulched and seeded within seven (7) calendar days after grading. All soil stockpiles are to be mulched and seeded within fourteen (14) calendar days after grading.
- H. No slope shall be greater than 3.1 unless approved by the design engineer and stabilized with slope appropriate controls as directed by the engineer (erosion control blankets, etc.).
- I. Stumps and brush may not be buried.
- J. Installation of all erosion and sediment control practices to be in accordance with the current SWPPP and construction drawings (erosion and sediment control plans, notes, and details).

3.2 EXAMINATION

- A. Examine site and identify existing features that contribute to erosion resistance; maintain such existing features to greatest extent possible.

3.3 INSPECTION AND MAINTENANCE

- A. Soil erosion and sediment control measures shall be inspected and maintained by the Contractor during the life of the project, including winter shutdown, etc. Such inspection and maintenance shall continue until after the permanent stabilization measures are in place and the temporary control measures are ordered to be removed by the Engineer. The remaining disturbed area shall be permanently stabilized as indicated in the contract documents.
- B. All temporary controls shall be inspected by the Contractor at least every seven calendar days, after each rainfall of 1/2-inch (12 mm) or more within a 12 hour period, or daily during prolonged rainfall to determine if the measure is functioning as intended. All inspections shall be completed within one calendar day.
- C. Within 3 calendar days from completion of the inspection, the Contractor shall:
 - 1. Repair or rebuild the control measure to function as originally intended.
 - 2. Remove sediment deposition which reaches one half the height of the control measure.
 - a. All sediment deposits shall be considered unsuitable material and disposed of in accordance with NYSDOTSS §203-3.08, *Disposal of Surplus Excavated Materials*. Material shall be disposed of away from wetlands, water courses or other bodies of water.
- D. Torn or punctured silt fence fabric may be repaired by the placement of a patch, on the upstream side, consisting of an additional layer of fabric over the damaged area, or replacement of the damaged section.

- E. Where erosion control materials have been used on final grade that have been permanently seeded, the Contractor shall care for the areas until acceptance of the Contract or acceptance of the turf, whichever is later. Where necessary, such care may include, but is not limited to providing warning signs or barricades for protection against traffic. Any surfaces that have settled, become gullied, or otherwise damaged due to the Contractor's operations shall be repaired at no additional expense to the state to reestablish the grade and soil conditions that existed prior to placing erosion control materials.

3.4 TEMPORARY MULCH

- A. The Contractor shall have the capability to mulch any disturbed areas on any given day (e.g., those areas where earthwork operations are ongoing, etc.). The Contractor shall apply mulch on disturbed areas consistent with the approved project schedule.
- B. Mulch shall be spread uniformly in a continuous blanket at an approximate rate of 4 t/ha. Mulch may be spread by hand, mechanical spreaders, or blowers.

3.5 TEMPORARY SEED AND MULCH

- A. The Contractor shall apply seed and mulch on disturbed areas consistent with the approved project schedule.
- B. Prior to the application of seed, all areas where compaction has occurred shall be scarified. The seed bed shall be loose and friable for positive seed retention.
- C. Ryegrasses shall be spread at a rate of 3.5 g/m² to uniformly cover the ground. Cereal grasses shall be spread at a rate of 11.2 g/m² to uniformly cover the ground. Seeds shall be evenly distributed by any method of sowing that does not injure the seeds in the process of spreading.
- D. Mulch shall be spread immediately following application of seed. Mulch shall be spread uniformly in a continuous blanket at an approximate rate of 4 t/ha. Mulch may be spread by hand, mechanical spreaders, or blowers. Mulch and seed shall not be placed simultaneously, except in the case of hydroseeding.

3.6 TEMPORARY CHECK DAM

- A. Check dams shall be constructed where shown in the contract documents and in accordance with the standard sheets. A bedding type geotextile or stone scour protection shall be placed as indicated in the contract documents.

3.7 TEMPORARY SILT FENCE

- A. Unless otherwise detailed in the contract documents, silt fence shall be installed as follows:
 - 1. Posts shall be driven into the ground.
 - 2. Geotextile and any mesh support (if applicable) shall be placed on the upstream side of the posts.
 - 3. The geotextile shall be fastened to each post in no less than 4 locations with approved fasteners.

4. The mesh support shall be fastened to each post at the top, bottom, and two additional evenly spaced locations, or by a continuous corded attachment along the top of the assembly.
5. Any geotextile or mesh splices necessary for fence erection shall be continuous between two post sections.
6. Geotextile at the bottom of the fence shall be buried in a trench to a depth of 150 mm. The trench shall be back filled with the excavated soil and the soil compacted by tamping.

3.8 DRAINAGE STRUCTURE INLET PROTECTION

- A. Drainage structure inlet protection shall be placed where shown in the contract documents and constructed in accordance with the standard detail sheets.
- B. Placing filter fabric beneath a drainage structure grate or wrapping a drainage structure grate in filter fabric is not an acceptable inlet protection practice.

3.9 ROLLED EROSION CONTROL PRODUCTS AND SOIL STABILIZERS

- A. The time and method of placement shall be as specified in the contract documents and/or according to Manufacturer's recommendations. For areas at final grade, all loose stones, clods, sticks, or other undesirable material shall be removed in accordance with the manufacturer's recommendations or as specified elsewhere in the contract documents. In addition, those areas at final grade shall be scarified to a minimum depth of 25 mm immediately prior to installation, unless topsoil is being placed and the erosion control material will be installed within 2 workdays of topsoil placement.
- B. Rolled Erosion Control Products:
 1. Class II, Type A, Jute Mesh: Jute mesh shall be placed without stretching on the freshly prepared surface so that it lays loosely on the soil and in contact with the soil at all points; and then it shall be rolled or tamped firmly into the soil surface. The upper end of each roll shall be turned down and buried to a depth of 150 mm with the soil firmly tamped against it. Unless otherwise specified in the contract documents, check slots shall be constructed at 15 m intervals down the slope. The construction procedure shall consist of placing a fold of material 150 mm vertically into the ground and tamping soil firmly against it. Jute mesh shall be placed so that all edges shall have a minimum overlap of 150 mm. The ends of rolls shall be placed with the upgrade section on top. Jute mesh shall be held tightly to the soil by anchors driven firmly into the ground. Anchors shall be spaced not more than 1 m apart on the sides and along the centerline of all drainage ways. Jute mesh ends and check slots shall have anchors spaced at 300 mm intervals.
 2. Class I, Other Class II, and Class III Rolled Erosion Control Products: These products shall be placed and firmly anchored as stated in the manufacturer's instructions.
- C. Class IV Soil Stabilizers: These materials shall be applied as recommended by the Manufacturer. Types A and B are intended to be applied with hydroseeding equipment. Type B may also be placed through dry spreading. When dry spreading method is used, the Contractor shall apply the material uniformly. Where applied, Type A shall be a minimum of 6 mm thick. When Type A is used in conjunction with turf establishment, seeds must be sown separately and prior to the application of the soil stabilizer.

3.10 CONSTRUCTION ENTRANCES

- A. Construction entrances shall be placed where shown in the contract documents and constructed in accordance with the standard sheets.
- B. The Contractor shall grade, including excavating or placing fill, to prepare the original ground surface for the placement of a stabilized pad of 150 mm of coarse aggregate material, underlain by a geotextile. If necessary, a drainage pipe shall be installed to maintain the capacity of the ditch. The pipe dimension shall be consistent with the modified soil erosion and sediment control plan approved by the Engineer. All areas cut or filled and not stabilized by the construction entrance material shall be covered with an erosion control treatment (temporary mulch, temporary seed and mulch, etc.) and shall be included in this pay item.
- C. When washing is performed, the washing area within the construction entrance shall be located in an area which will drain into an approved sediment control measure(s).
- D. The construction entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto the right-of-way. All sediment spilled, dropped, washed or tracked onto the right-of-way shall be removed immediately. In the event the entrance is no longer performing properly (i.e. the entrance aggregate becomes clogged with sediment), the Contractor shall top-dress the entrance with additional coarse aggregate material.

3.11 TEMPORARY PIPE INLET/OUTLET PROTECTION, SILT FENCE

- A. Temporary pipe inlet/outlet protection, silt fence, shall be placed where shown in the contract documents and constructed in accordance with the standard detail sheets.

3.12 WASTE MANAGEMENT

- A. Separate and dispose of waste in accordance with the Project's Waste Management Plan.

3.13 PREPARATION

- A. Schedule work so that soil surfaces are left exposed for the minimum amount of time.

3.14 INSTALLATION

- A. Traffic-Bearing Aggregate Surface:
 - 1. Excavate minimum of 6 inches.
 - 2. Place geotextile fabric full width and length, with minimum 12 inch overlap at joints.
 - 3. Place and compact at least 6 inches of 1 1/2 to 3 1/2 inch diameter stone.

3.15 MAINTENANCE

- A. Inspect preventive measures weekly, within 24 hours after the end of any storm that produces 0.5 inches or more rainfall at the project site, and daily during prolonged rainfall.

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- B. Repair deficiencies immediately.
- C. Silt Fences:
 - 1. Promptly replace fabric that deteriorates unless need for fence has passed.
 - 2. Remove silt deposits that exceed one-third of the height of the fence.
 - 3. Repair fences that are undercut by runoff or otherwise damaged, whether by runoff or other causes.
- D. Place sediment in appropriate locations on site; do not remove from site.

3.16 CLEAN UP

- A. Remove temporary measures after permanent measures have been installed, unless permitted to remain by Architect.
- B. Clean out temporary sediment control structures that are to remain as permanent measures.
- C. Where removal of temporary measures would leave exposed soil, shape surface to an acceptable grade and finish to match adjacent ground surfaces.

END OF SECTION

SECTION 320519 - GEOSYNTHETICS FOR EXTERIOR IMPROVEMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Geotextile for separation.
- B. Geotextile for filtration.

1.2 RELATED REQUIREMENTS

- A. Section 312323 - Fill.

1.3 REFERENCE STANDARDS

- A. AASHTO M 288 - Standard Specification for Geosynthetic Specification for Highway Applications; 2022.
- B. ASTM D4491/D4491M - Standard Test Methods for Water Permeability of Geotextiles by Permittivity; 2022.
- C. ASTM D4632/D4632M - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles; 2015a (Reapproved 2023).
- D. ASTM D4751 - Standard Test Methods for Determining Apparent Opening Size of a Geotextile; 2021a.
- E. ASTM D4833/D4833M - Standard Test Method for Index Puncture Resistance of Geomembranes and Related Products; 2007 (Reapproved 2020).
- F. ASTM D5199 - Standard Test Method for Measuring the Nominal Thickness of Geosynthetics; 2012 (Reapproved 2019).

1.4 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's data on each product used, including physical properties, seaming materials, and installation instructions.

PART 2 PRODUCTS

2.1 GEOSYNTHETIC

- A. Provide geosynthetic in largest size sheets possible to minimize field joining.

- B. Uniform thickness in accordance with ASTM D5199.

2.2 GEOTEXTILE

- A. General:
 - 1. Material: Polyethylene consisting of 5 percent maximum regrind and free of contaminants.
 - 2. Survivability: Class 1, when tested in accordance with AASHTO M 288.
- B. Geotextile for Separation: Capable of restricting adjacent material mixing.
 - 1. Type: Woven.
 - 2. Seams: Loose laid.
 - a. Overlap: According to manufacturer.
 - 1) 12 inches, minimum.
 - 3. Grab Strength: 300 lbf, minimum, when tested in accordance with ASTM D4632/D4632M.
 - 4. Puncture Strength: 450 lbf, minimum, when tested in accordance with ASTM D4833/D4833M.
- C. Geotextile for Filtration: Capable of allowing liquid passage while restricting solids.
 - 1. Type: Nonwoven.
 - 2. Seams: Mechanically sewn.
 - a. Overlap: According to manufacturer.
 - b. Stitch: Flat; continuous; tied off at ends.
 - 3. Grab Strength: 300 lbf, minimum, when tested in accordance with ASTM D4632/D4632M.
 - 4. Permittivity: 0.5 per second, minimum, in accordance with ASTM D4491/D4491M.
 - 5. Apparent Opening Size: No.40, 0.016 inch, maximum, when tested in accordance with ASTM D4751.
 - 6. Sewn Seam Strength: 275 lbf, minimum, when tested in accordance with ASTM D4632/D4632M.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify receiving surface is smooth, without ruts or protrusions, and grades are according to design drawings.
- B. Verify geosynthetic is free of defects or flaws that degrade physical performance.

3.2 INSTALLATION

- A. General:
 - 1. Notify Architect minimum of 24 hours before geosynthetic installation.

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2. Prevent surface drainage from eroding under geosynthetic. Repair undermined areas before backfill.
3. Position geosynthetic smooth and wrinkle-free on prepared surface; unroll or unfold carefully, avoiding stretching.
4. Perform seaming in adequate lighting. Seam each geosynthetic member immediately after final placement. Clean sheets of dust, dirt, and other foreign matter before seaming.

B. Separation:

1. Install geotextile according to manufacturer's recommendations.
2. Lay sheets in direction of construction.
3. Repairs: Remove damaged portion of geotextile and seam additional layer to cover affected area.

C. Filtration:

1. Install geotextile according to manufacturer's recommendations.
2. Lay sheets in direction of construction.
3. Repairs: Remove damaged portion of geotextile and seam additional layer to cover affected area. Replace geotextile where surface runoff contamination has occurred.

3.3 BACKFILL

- A. Obtain approval for geosynthetic sheet installation from Architect before placing fill.
- B. Backfill in manner to prevent damage to geosynthetic. Repair geosynthetic damaged during backfill operations.
- C. Cover geosynthetic in installed direction, see Section 312323.

END OF SECTION

SECTION 321120 - SUBBASE AND AGGREGATE BASE COURSES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Subbase course.

1.2 DEFINITIONS

- A. 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.
- B. Subbase Course: Aggregate layer placed between the subgrade and base course for hot-mix asphalt pavement, or aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.
- C. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.
- D. Utilities: On-site underground pipes, conduits, ducts, and cables as well as underground services within buildings.

1.3 REFERENCE STANDARDS

- A. AASHTO M 145 - Standard Specification for Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes; 1991.
- B. AASHTO T 180 - Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop; 2022, with Errata .
- C. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)); 2012 (Reapproved 2021).
- D. ASTM D1556/D1556M - Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method; 2015, with Editorial Revision (2016).
- E. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)); 2012 (Reapproved 2021).
- F. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method; 2015.
- G. ASTM D2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System); 2017, with Editorial Revision (2020).

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- H. ASTM D2940/D2940M - Standard Specification for Graded Aggregate Material for Bases or Subbases for Highways or Airports; 2020.
- I. ASTM D3665 - Standard Practice for Random Sampling of Construction Materials; 2012 (Reapproved 2017).
- J. ASTM D3740 - Standard Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction; 2023.
- K. ASTM D6938 - Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth); 2023.
- L. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection; 2023.

1.4 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Test Reports:
 - 1. Classification according to ASTM D2487.
 - 2. Laboratory compaction curve according to ASTM D698.
- C. Testing agency's qualification statement.

1.5 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section. Qualified according to ASTM E329 and ASTM D3740 for testing indicated.

1.6 FIELD CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth-moving operations.
 - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
 - 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- B. Utility Locator Service: Notify UDig NY for area where Project is located before beginning earth-moving operations.
- C. Do not commence earth-moving operations until temporary site fencing and erosion- and sedimentation-control measures specified in Section 015000 - Temporary Facilities and Controls and Section 311000 - Site Clearing are in place.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Satisfactory Soils: Soil Classification Groups GW, GP, GM, SW, SP, and SM according to ASTM D2487, or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
- B. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D2487, or a combination of these groups.
- C. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; with at least 90 percent passing a 1-1/2-inch (37.5-mm) sieve and not more than 12 percent passing a No. 200 (0.075-mm) sieve.
- D. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; with at least 90 percent passing a 1-1/2-inch (37.5-mm) sieve and not more than 12 percent passing a No. 200 (0.075-mm) sieve.

2.2 SOURCE QUALITY CONTROL

- A. See Section 014000 - Quality Requirements for additional requirements.
- B. If tests indicate materials do not meet specified requirements, change material and retest.
- C. Provide materials of each type from same source throughout the Work.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that survey bench marks and intended elevations for the work are as indicated.
- B. Verify substrate has been inspected, and gradients and elevations are correct and dry.

3.2 PREPARATION

- A. Notify Architect when excavations and fills have reached required subgrade.
- B. Correct irregularities in substrate gradient and elevation by scarifying, reshaping, and recompacting as directed by Testing Agency, without additional compensation.
- C. Do not place aggregate on soft, muddy, or frozen surfaces.

3.3 STORAGE OF SOIL MATERIALS

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

3.4 SUBBASE COURSES UNDER PAVEMENTS AND WALKS

- A. Place subbase course on subgrades free of mud, frost, snow and ice.
- B. On prepared subgrade, place subbase course under pavements and walks as follows:
 - 1. Shape subbase course to required crown elevations and cross-slope grades.
 - 2. Place subbase course 6 inches or less in compacted thickness in a single layer.
 - 3. Place subbase course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
 - 4. Compact subbase course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D698 ("standard Proctor") or ASTM D1557 ("modified Proctor").

3.5 SOIL MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.
 - 1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
 - 2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.6 TOLERANCES

- A. Variation From Design Elevation: Within 1/2 inch.
- B. Flatness: Maximum variation of 1/2 inch measured with 10 foot straight edge.
- C. Scheduled Compacted Thickness: Within 1/2 inch.

3.7 FIELD QUALITY CONTROL

- A. See Section 014000 - Quality Requirements for additional requirements.
- B. Subbase Compaction Density Testing: In accordance with ASTM D1556/D1556M, ASTM D2167, or ASTM D6938.
- C. Evaluate results in relation to compaction curve determined by testing uncompacted material in accordance with AASHTO T 180, ASTM D698 ("standard Proctor"), or ASTM D1557 ("modified Proctor").
- D. If tests indicate work does not meet specified requirements, scarify and moisten or aerate, remove work, replace and retest until specified compaction is obtained.
- E. Frequency of Tests: In accordance with ASTM D3665.
 - 1. Paved Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 5000 sq. ft. or less of paved area but in no case fewer than three tests.

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F. Remove, replace, and retest work that does not meet specified requirements.

END OF SECTION

SECTION 321216 - ASPHALT PAVING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Hot-mix asphalt paving.

1.3 REFERENCE STANDARDS

- A. AASHTO M 17 - Standard Specification for Mineral Filler for Bituminous Paving Mixtures; 2019.
- B. AASHTO M 29 - Standard Specification for Fine Aggregate for Asphalt Mixtures; 2020.
- C. AASHTO M 140 - Standard Specification for Emulsified Asphalt; 2020.
- D. AASHTO M 208 - Standard Specification for Cationic Emulsified Asphalt; 2018.
- E. AASHTO M 320 - Standard Specification for Performance-Graded Asphalt Binder; 2022.
- F. ASTM D692/D692M - Standard Specification for Coarse Aggregate for Asphalt Paving Mixtures; 2020.
- G. ASTM D977 - Standard Specification for Emulsified Asphalt; 2020.
- H. ASTM D979/D979M - Standard Practice for Sampling Asphalt Mixtures; 2022.
- I. ASTM D1073 - Standard Specification for Fine Aggregate for Asphalt Paving Mixtures; 2016 (Reapproved 2022).
- J. ASTM D2041/D2041M - Standard Test Method for Theoretical Maximum Specific Gravity and Density of Asphalt Mixtures; 2019.
- K. ASTM D2397/D2397M - Standard Specification for Cationic Emulsified Asphalt; 2020.
- L. ASTM D3549/D3549M - Standard Test Method for Thickness or Height of Compacted Asphalt Mixture Specimens; 2023.
- M. ASTM D6373 - Standard Specification for Performance-Graded Asphalt Binder; 2021.
- N. ASTM D6690 - Standard Specifications for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements; 2021.

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- O. ASTM D6927 - Standard Test Method for Marshall Stability and Flow of Asphalt Mixtures; 2022.

1.4 SUBMITTALS

- A. See Section 013300 - Submittal Procedures.
- B. Product Data: Include technical data and tested physical and performance properties.
 - 1. Joint sealant.
- C. Hot-Mix Asphalt Designs:
 - 1. Certification, by authorities having jurisdiction, of approval of each hot-mix asphalt design proposed for the Work.
- D. Material Certificates:
 - 1. Aggregates.
 - 2. Asphalt binder.
 - 3. Tack coat.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A paving-mix manufacturer registered with and approved by authorities having jurisdiction or the DOT of state in which Project is located.
- B. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of Section 400 of NYSDOT 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, if rain is imminent or expected before time required for adequate cure, or if the following conditions are not met:
 - 1. Prime Coat: Minimum surface temperature of 60 deg F.
 - 2. Tack Coat: Minimum surface temperature of 60 deg F.
 - 3. Asphalt Binder Course: Minimum surface temperature of 40 deg F and rising at time of placement.
 - 4. Asphalt Surface Course: Minimum surface temperature of 60 deg F at time of placement.

PART 2 PRODUCTS

2.1 AGGREGATES

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

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- B. Coarse Aggregate: ASTM D692/D692M, sound; angular crushed stone or crushed gravel.
- C. Fine Aggregate: ASTM D1073 or AASHTO M 29, sharp-edged natural sand or sand prepared from stone or gravel, or combinations thereof.
 - 1. For hot-mix asphalt, limit natural sand to a maximum of 20 percent by weight of the total aggregate mass.

2.2 ASPHALT MATERIALS

- A. Asphalt Binder: ASTM D6373 or AASHTO M 320 binder designation PG 64-22.
- B. Tack Coat: ASTM D977 or AASHTO M 140 emulsified asphalt, or ASTM D2397/D2397M or AASHTO M 208 cationic emulsified asphalt, slow setting, diluted in water, of suitable grade and consistency for application.
- C. Water: Potable.

2.3 AUXILIARY MATERIALS

- A. Joint Sealant: ASTM D6690, Type II or III, hot-applied, single-component, polymer-modified bituminous sealant.

2.4 MIXES

- A. Hot-Mix Asphalt: Dense-graded, hot-laid, hot-mix asphalt plant mixes approved by authorities having jurisdiction and complying with the following requirements:
 - 1. Provide mixes with a history of satisfactory performance in geographical area where Project is located.
 - 2. Binder Course: NYSDOT HMA 19.0 F9.
 - 3. Surface Course: NYSDOT HMA 9.5 F2 .

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.

3.3 SURFACE PREPARATION

- A. Ensure that prepared subgrade has been proof-rolled and is ready to receive paving. Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces.
- B. Emulsified Asphalt Prime Coat: Apply uniformly over surface of compacted unbound-aggregate base course at a rate of 0.10 to 0.30 gal./sq. yd. per inch depth. Apply enough material to penetrate and seal, but not flood, surface. Allow prime coat to cure.
 - 1. If prime coat is not entirely absorbed within 24 hours after application, spread sand over surface to blot excess asphalt. Use enough sand to prevent pickup under traffic. Remove loose sand by sweeping before pavement is placed and after volatiles have evaporated.
 - 2. Protect primed substrate from damage until ready to receive paving.
- C. Tack Coat: Apply uniformly to surfaces of existing pavement at a rate of 0.05 to 0.15 gal./sq. yd.
 - 1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
 - 2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

3.4 HOT-MIX ASPHALT PLACEMENT

- A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand in areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted.
 - 1. Place hot-mix asphalt binder course in number of lifts and thicknesses indicated.
 - 2. Place hot-mix asphalt surface course in single lift.
 - 3. Spread mix at a minimum temperature of 250 deg F.
 - 4. Begin applying mix along centerline of crown for crowned sections and on high side of one-way slopes unless otherwise indicated.
 - 5. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.
- B. Place paving in consecutive strips not less than 10 feet wide unless infill edge strips of a lesser width are required.
 - 1. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Overlap mix placement about 1 to 1-1/2 inches from strip to strip to ensure proper compaction of mix along longitudinal joints.
 - 2. Complete a section of asphalt binder course before placing asphalt surface course.
- C. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

3.5 JOINTS

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

3.6 COMPACTION

- A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot hand tampers or with vibratory-plate compactors in areas inaccessible to rollers.
 - 1. Complete compaction before mix temperature cools to 185 deg F.
- B. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.
- C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:
 - 1. Average Density, Marshall Test Method: 96 percent of reference laboratory density in accordance with ASTM D6927, but not less than 94 percent or greater than 100 percent.
- D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.
- E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.
- F. Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.
- G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.

3.7 INSTALLATION TOLERANCES

- A. Pavement Thickness: Compact each course to produce thickness indicated within the following tolerances:
 - 1. Binder Course: Plus or minus 1/2 inch.
 - 2. Surface Course: Plus 1/4 inch, no minus.
- B. Pavement Surface Smoothness: Compact each course to produce surface smoothness within the following tolerances as determined by using a 10-foot straightedge applied transversely or longitudinally to paved areas:
 - 1. Binder Course: 1/4 inch.
 - 2. Surface Course: 1/8 inch.

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 hot-mix asphalt courses will be determined in accordance with ASTM D3549/D3549M.
- C. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.
- D. In-Place Density: Testing agency will take samples of uncompacted paving mixtures and compacted pavement in accordance with ASTM D979/D979M.
 - 1. Reference maximum theoretical density will be determined by averaging results from four samples of hot-mix asphalt-paving mixture delivered daily to site, prepared in accordance with ASTM D2041/D2041M, and compacted in accordance with job-mix specifications.
- E. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.

END OF SECTION

SECTION 321313 - CONCRETE PAVING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes Concrete Paving:
 - 1. Walks.
- B. Related Requirements:
 - 1. Section 033000 - Cast-in-Place Concrete.
 - 2. Section 321120 - Subbase and Aggregate Base Courses.
 - 3. Section 321373 - Concrete Paving Joint Sealants for joint sealants in expansion and contraction joints within concrete paving and in joints between concrete paving and asphalt paving or adjacent construction.

1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash, slag cement, and other pozzolans.
- B. W/C Ratio: The ratio by weight of water to cementitious materials.

1.4 REFERENCE STANDARDS

- A. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement; 2022.
- B. ASTM A775/A775M - Standard Specification for Epoxy-Coated Steel Reinforcing Bars; 2022.
- C. ASTM C31/C31M - Standard Practice for Making and Curing Concrete Test Specimens in the Field; 2024.
- D. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2023.
- E. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2023.
- F. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2024.
- G. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete; 2020.

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- H. ASTM C150/C150M - Standard Specification for Portland Cement; 2022.
- I. ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete; 2020.
- J. ASTM C172/C172M - Standard Practice for Sampling Freshly Mixed Concrete; 2017.
- K. ASTM C231/C231M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method; 2022.
- L. ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete; 2010a (Reapproved 2016).
- M. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete; 2019.
- N. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete; 2019, with Editorial Revision (2022).
- O. ASTM C881/C881M - Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete; 2020a.
- P. ASTM C1064/C1064M - Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete; 2023.
- Q. ASTM C1077 - Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation; 2024.
- R. ASTM C1116/C1116M - Standard Specification for Fiber-Reinforced Concrete; 2023.
- S. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Asphalt Types); 2023.
- T. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection; 2023.

1.5 SUBMITTALS

- A. See Section 013300 - Submittal Procedures.
- B. Product Data: For each type of product.
- C. Design Mixtures: For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
- D. Material Certificates: For the following, from manufacturer:
 - 1. Cementitious materials.
 - 2. Steel reinforcement and reinforcement accessories.
 - 3. Fiber reinforcement.
 - 4. Admixtures.
 - 5. Curing compounds.

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6. Bonding agent or epoxy adhesive.
 7. Joint fillers.
- E. Material Test Reports: For each of the following:
1. Aggregates: Include service-record data indicating absence of deleterious expansion of concrete due to alkali-aggregate reactivity.
- F. Field quality-control reports.

1.6 QUALITY ASSURANCE

- A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94/C94M requirements for production facilities and equipment.
- B. Testing Agency Qualifications: Qualified according to ASTM C1077 and ASTM E329 for testing indicated.
1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.

1.7 FIELD CONDITIONS

- A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.
- B. Cold-Weather Concrete Placement: Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing, or low temperatures. Comply with ACI 306.1 and the following:
1. When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F at point of placement.
 2. Do not use frozen materials or materials containing ice or snow.
 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in design mixtures.
- C. Hot-Weather Concrete Placement: Comply with ACI 301 and as follows when hot-weather conditions exist:
1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated in total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
 2. Cover steel reinforcement with water-soaked burlap, so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
 3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

PART 2 PRODUCTS

2.1 CONCRETE, GENERAL

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

2.2 FORMS

- A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, and smooth exposed surfaces.
 - 1. Use flexible or uniformly curved forms for curves with a radius of 100 feet or less. Do not use notched and bent forms.
- B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and that will not impair subsequent treatments of concrete surfaces.

2.3 STEEL REINFORCEMENT

- A. Epoxy-Coated, Joint Dowel Bars: ASTM A775/A775M; with ASTM A615/A615M, Grade 60 (Grade 420) plain-steel bars.
- B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded-wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified, and as follows:
 - 1. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.
- C. Epoxy Repair Coating: Liquid, two-part, epoxy repair coating, compatible with epoxy coating on reinforcement.

2.4 CONCRETE MATERIALS

- A. Cementitious Materials: Use the following cementitious materials, of same type, brand, and source throughout Project:
 - 1. Portland Cement: ASTM C150/C150M, gray portland cement Type I/II.
- B. Normal-Weight Aggregates: ASTM C33/C33M, Class 4S, uniformly graded. Provide aggregates from a single source with documented service-record data of at least 10 years' satisfactory service in similar paving applications and service conditions using similar aggregates and cementitious materials.
 - 1. Maximum Coarse-Aggregate Size: 1 inch nominal.
- C. Air-Entraining Admixture: ASTM C260/C260M.
- D. Chemical Admixtures: Admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of

cementitious material.

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

- E. Water: Potable and complying with ASTM C94/C94M.

2.5 FIBER REINFORCEMENT

- A. Synthetic Fiber: Monofilament polypropylene fibers engineered and designed for use in decorative concrete paving, complying with ASTM C1116/C1116M, Type III, 1/2 to 1-1/2 inches long.
- B. Synthetic Fiber: Fibrillated polypropylene fibers engineered and designed for use in decorative concrete paving, complying with ASTM C1116/C1116M, Type III, 1/2 to 1-1/2 inches long.

2.6 CURING MATERIALS

- A. Moisture-Retaining Cover: ASTM C171, polyethylene film or white burlap-polyethylene sheet.
- B. Water: Potable.
- C. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C309, Type 1, Class B, dissipating.

2.7 RELATED MATERIALS

- A. Joint Fillers: ASTM D1751, asphalt-saturated cellulosic fiber in preformed strips.
- B. Epoxy-Bonding Adhesive: ASTM C881/C881M, two-component epoxy resin capable of humid curing and bonding to damp surfaces; of class suitable for application temperature, of grade complying with requirements, and of the following types:
1. Types I and II, nonload bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

2.8 CONCRETE MIXTURES

- A. Prepare design mixtures, proportioned according to ACI 301, for each type and strength of normal-weight concrete, and as determined by either laboratory trial mixtures or field experience.
1. Use a qualified independent testing agency for preparing and reporting proposed concrete design mixtures for the trial batch method.
- B. Add air-entraining admixture at manufacturer's prescribed rate to result in normal-weight concrete at point of placement having an air content as follows:
1. Air Content: 6 percent plus or minus 1-1/2 percent for 1-inch nominal maximum aggregate size.

- C. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.
- D. Chemical Admixtures: Use admixtures according to manufacturer's written instructions.
 - 1. Use water-reducing admixture, high-range, water-reducing admixture, high-range, water-reducing and retarding admixture, or plasticizing and retarding admixture in concrete as required for placement and workability.
 - 2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
- E. Synthetic Fiber: Uniformly disperse in concrete mixture at manufacturer's recommended rate, but not less than 1.0 lb/cu. yd..
- F. Concrete Mixtures: Normal-weight concrete.
 - 1. Compressive Strength (28 Days): 5000 psi.
 - 2. Maximum W/C Ratio at Point of Placement: 0.40.
 - 3. Slump Limit: 4 inches, plus or minus 1 inch.

2.9 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C94/C94M and ASTM C1116/C1116M. Furnish batch certificates for each batch discharged and used in the Work.
 - 1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine exposed subgrades and subbase surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

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

3.3 EDGE FORMS AND SCREED CONSTRUCTION

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

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

3.4 JOINTS

- A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.
- B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.
 - 1. Butt Joints: Use bonding agent at joint locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
 - 2. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.
- C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, other fixed objects, and where indicated.
 - 1. Extend joint fillers full width and depth of joint.
 - 2. Terminate joint filler not less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.
 - 3. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
 - 4. During concrete placement, protect top edge of joint filler with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.
- D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows:
 - 1. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch-wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.
 - a. Tolerance: Ensure that sawed joints are within 3 inches either way from centers of dowels.
 - 2. Doweled Contraction Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.
- E. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 1/4-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

3.5 CONCRETE PLACEMENT

- A. Before placing concrete, inspect and complete formwork installation and items to be embedded or cast-in.
- B. Remove snow, ice, or frost from subbase surface before placing concrete. Do not place concrete on frozen surfaces.
- C. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.
- D. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.
- E. Do not add water to concrete during delivery or at Project site. Do not add water to fresh concrete after testing.
- F. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
- G. Consolidate concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.
 - 1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating dowels or joint devices.
- H. Screed paving surface with a straightedge and strike off.
- I. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleedwater appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.
- J. Curbs and Gutters: Use design mixture for automatic machine placement. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing.
- K. Slip-Form Paving: Use design mixture for automatic machine placement. Produce paving to required thickness, lines, grades, finish, and jointing.
 - 1. Compact subbase and prepare subgrade of sufficient width to prevent displacement of slip-form paving machine during operations.

3.6 FLOAT FINISHING

- A. General: Do not add water to concrete surfaces during finishing operations.
- B. Float Finish: Begin the second floating operation when bleedwater sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.

1. Medium-to-Fine-Textured Broom Finish: Draw a soft-bristle broom across float-finished concrete surface, perpendicular to line of traffic, to provide a uniform, fine-line texture.

3.7 DETECTABLE WARNING INSTALLATION

- A. Cast-in-Place Detectable Warning Tiles: Form blockouts in concrete for installation of tiles specified in Section 321726 - Tactile Warning Surfacing. Screed surface of concrete where tiles are to be installed to elevation, so that edges of installed tiles will be flush with surrounding concrete paving. Embed tiles in fresh concrete to comply with Section 321726 - Tactile Warning Surfacing immediately after screeding concrete surface.

3.8 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
- B. Comply with ACI 306.1 for cold-weather protection.
- C. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
- D. Curing Methods: Cure concrete by moisture-retaining-cover curing, curing compound, or a combination of these as follows:
 1. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Immediately repair any holes or tears occurring during installation or curing period, using cover material and waterproof tape.
 2. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating, and repair damage during curing period.

3.9 PAVING TOLERANCES

- A. Comply with tolerances in ACI 117 and as follows:
 1. Elevation: 3/4 inch.
 2. Thickness: Plus 3/8 inch, minus 1/4 inch.
 3. Surface: Gap below 10-feet-long; unleveled straightedge not to exceed 1/2 inch.
 4. Vertical Alignment of Dowels: 1/4 inch.
 5. Joint Spacing: 3 inches.
 6. Contraction Joint Depth: Plus 1/4 inch, no minus.
 7. Joint Width: Plus 1/8 inch, no minus.

3.10 FIELD QUALITY CONTROL

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

- B. Testing Services: Testing and inspecting of composite samples of fresh concrete obtained according to ASTM C172/C172M shall be performed according to the following requirements:
 - 1. Testing Frequency: Obtain at least one composite sample for each 5000 sq. ft. or fraction thereof of each concrete mixture placed each day.
 - a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
 - 2. Slump: ASTM C143/C143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
 - 3. Air Content: ASTM C231/C231M, pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
 - 4. Concrete Temperature: ASTM C1064/C1064M; one test hourly when air temperature is 40 deg F and below and when it is 80 deg F and above, and one test for each composite sample.
 - 5. Compression Test Specimens: ASTM C31/C31M; cast and laboratory cure one set of four standard cylinder specimens for each composite sample.
 - 6. Compressive-Strength Tests: ASTM C39/C39M; test one specimen at seven days and two specimens at 28 days.
 - a. A compressive-strength test shall be the average compressive strength from two specimens obtained from same composite sample and tested at 28 days.
- C. Strength of each concrete mixture will be satisfactory if average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
- D. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
- E. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect.
- F. Concrete paving will be considered defective if it does not pass tests and inspections.
- G. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
- H. Prepare test and inspection reports.

3.11 REPAIR AND PROTECTION

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

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

END OF SECTION

SECTION 321373 - CONCRETE PAVING 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. Cold-applied joint sealants.

1.3 REFERENCE STANDARDS

- A. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016 (Reapproved 2023).
- B. ASTM D5893 - Standard Specification for Cold-Applied, Single-Component, Chemically Curing Silicone Joint Sealant for Portland Cement Concrete Pavements; 2021.

1.4 SUBMITTALS

- A. See Section 013300 - Submittal Procedures.
- B. Product Data: For each type of product.

1.5 FIELD CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
 - 1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer.
 - 2. When joint substrates are wet.
 - 3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
 - 4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

PART 2 PRODUCTS

2.1 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backing materials, 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

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2.2 COLD-APPLIED JOINT SEALANTS

- A. Single-Component, Self-Leveling, Silicone Joint Sealant: ASTM D5893, Type SL.

2.3 JOINT-SEALANT BACKER MATERIALS

- A. Joint-Sealant Backer Materials: Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by joint-sealant manufacturer, based on field experience and laboratory testing.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine joints to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Before installing joint sealants, clean out joints immediately to comply with joint-sealant manufacturer's written instructions.
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.

3.3 INSTALLATION OF JOINT SEALANTS

- A. Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated unless more stringent requirements apply.
- B. Joint-Sealant Installation Standard: Comply with recommendations in ASTM C1193 for use of joint sealants as applicable to materials, applications, and conditions.
- C. Install joint-sealant backings to support joint 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 joint-sealant backings.
- D. Install joint sealants immediately following backing installation, using proven techniques that comply with the following:
 - 1. Place joint sealants so they fully contact joint substrates.
 - 2. Completely fill recesses in each joint configuration.

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- E. Provide joint configuration to comply with joint-sealant manufacturer's written instructions unless otherwise indicated.

3.4 CLEANING AND PROTECTION

- A. Clean off excess joint sealant as the Work progresses, by methods and with cleaning materials approved in writing by joint-sealant manufacturers.
- B. 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 and remove damaged or deteriorated joint sealants immediately and replace with joint sealant so installations in repaired areas are indistinguishable from the original work.

END OF SECTION

SECTION 321813 - SYNTHETIC GRASS SURFACING

PART 1 GENERAL

1.1 SUMMARY OF WORK

- A. The Owner has entered a cooperative purchase agreement with the specified manufacturer/installer which includes the purchase and installation of the shock absorbing course, synthetic grass carpet, synthetic grass infill, required GMax testing and grooming equipment. The Site Contractor is responsible to prepare the site for installation, including but not limited to drain course, choker course, perimeter concrete and nailer if required by synthetic grass manufacturer/installer.

1.2 SECTION INCLUDES

- A. Synthetic grass surfacing and infill.
- B. Edge anchoring and borders.
- C. Correction of grades and subgrade.
- D. Drainage layer.
- E. Field graphics.

1.3 RELATED REQUIREMENTS

- A. Section 312200 - Grading.
- B. Section 312316 - Excavation.
- C. Section 312316.13 - Trenching.
- D. Section 312323 - Fill.
- E. Section 320519 - Geosynthetics for Exterior Improvements.
- F. Section 321120 - Subbase and Aggregate Base Courses.
- G. Section 323113 - Chain Link Fences and Gates.
- H. Section 334211 - Stormwater Gravity Piping.

1.4 REFERENCE STANDARDS

- A. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers--Tension; 2016 (Reapproved 2021).

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- B. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2024.
- C. ASTM C136/C136M - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates; 2019.
- D. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)); 2012 (Reapproved 2021).
- E. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)); 2012 (Reapproved 2021).
- F. ASTM D6662 - Standard Specification for Polyolefin-Based Plastic Lumber Decking Boards; 2022.
- G. ASTM F36 - Standard Test Method for Compressibility and Recovery of Gasket Materials; 2021.
- H. ASTM F1487 - Standard Consumer Safety Performance Specification for Playground Equipment for Public Use; 2021.
- I. ASTM F1936 - Standard Specification for Impact Attenuation of Turf Playing Systems as Measured in the Field; 2010 (Reapproved 2015).
- J. ASTM F2898 - Standard Test Method for Permeability of Synthetic Turf Sports Field Base Stone and Surface System by Non-confined Area Flood Test Method; 2011 (Reapproved 2019).
- K. ASTM STP322-1 - Field Testing of Soils, Chapter 1: Field Percolation Tests for Sanitary Engineering Application; 1962.
- L. CPSC Pub. No. 325 - Public Playground Safety Handbook; 2015.

1.5 SUBMITTALS

- A. See Section 013300 - Submittal Procedures, for submittal procedures.
- B. Product Data: For all manufactured surfacing products, provide manufacturer's product data showing materials of construction, compliance with specified standards, installation procedures, and safety limitations.
 - 1. Include STC certifications where required.
- C. Shop Drawings, Carpet Roll: Show locations of seams and methods of seaming.
 - 1. Field Graphics: Include methods of seaming.
- D. Samples: Provide following prior to ordering material:
 - 1. Synthetic Grass carpet: Two 12 inch by 12 inch (305 mm by 305 mm) pieces.
 - 2. Infill material: Two 1-gallon bags for each type, sand and rubber granules.
 - 3. Seamed synthetic grass carpet: Two 12 inch by 24 inch (305 mm by 610 mm) pieces seamed together for each seaming method indicated on drawings.
 - 4. Color samples: Provide 4 inch by 4 inch color samples for each proposed color.
 - 5. Shock pad: Two 12 inch by 12 inch samples.

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- E. Percolation Test Report: Describing test method used and results.
- F. Installer's Qualification Statement.
- G. Maintenance Data:
 - 1. For manufactured surfacing products, provide manufacturer's recommended maintenance instructions and list of repair products, with address and phone number of source of supply.
 - 2. For loose fill surfacing products, provide detailed re-ordering information to enable Owner to match installed material exactly.
- H. Manufacturer's Field Report.
- I. Topographical survey of loose fill layer prior to installation of synthetic grass carpet.

1.6 QUALITY ASSURANCE

- A. See section 014000 - Quality Requirements, for procedures for testing, inspection, mock-ups, reports, certificates, use of reference standards.
- B. Maintain one copy of latest edition of ASTM F1487 and CPSC Pub. No. 325 at project site.
- C. Manufacturer Qualifications: Company regularly engaged in manufacturing products specified in this section, with not less than 15 years of documented experience.
 - 1. Field installation of similar size and application located at a minimum of 100 sites and been in successful service minimum 5 years.
 - 2. Manufacturer's Representative: Provide name, company name and address, and qualifications.
- D. Installer Qualifications: Company certified by manufacturer for training and experience installing protective surfacing; provide installer's company name and address, and training and experience certificate.

1.7 WARRANTY

- A. See Section 017800 - Closeout Submittals - Closeout Submittals, for additional warranty requirements.
- B. Provide 12 year minimum warranty from date of substantial completion for materials and installation covering:
 - 1. Excessive wear.
 - 2. Fiber tensile strength.
 - 3. Excessive deterioration or fading from UV light.
 - 4. Seam integrity.
 - 5. No minimum use requirements.

PART 2 PRODUCTS

2.1 SYNTHETIC GRASS SURFACING

- A. Basis of Design: A-Turf Titan DiamondBlade or Owner approved equal meeting all criteria as specified.
1. Proposed equivalents must be backed by a list of 10 projects meeting the minimum turf system requirements outlined below, backed by current product data testing, and have been installed at least 10 full sized field locations within the last 3 years with similar use applications. At least 1 one of these installations shall be at the NCAA level and within 100 miles of the project site
- B. Synthetic Grass Carpet: Titan DiamondBlade..
1. Total Weight: 50 oz per sq yd, minimum.
 2. Face Yarn Type: 100% polyethylene parallel-long slit fiber and monofilament blended in dual yarn types and dual yarn thicknesses.
 3. Yarn Size: Yarn A - 5,000 – 10,000 denier, Yarn B 7,200-10,800 denier based on configuration.
 4. Yarn Thickness: 100 microns for parallel slit, 360 microns for monofilament.
 5. Pile Height (Finished): 2.25 inches.
 6. Color: Field Green/Field Green Lime Blend.
 7. Construction: Broodloom Tufted.
 8. Stitch Rate: 10/3.
 9. Tufting Gauge: 1/2 inch.
 10. Primary Backing: ArmourLoc 3L / Triple Layer.
 11. Secondary Backing: 22 ounces of urethane per square yard.
 12. Total Carpet Weight: 80 ounce (+/- 2 ounces) minimum.
 13. Perforation (Outdoors): 3/16" holes on staggered 4" (approximate) centers.
 14. Permeability: 20 inches (508 mm) of water per hour, minimum.
 15. Infill Composition: 3 lbs Ambiently ground SBR crumb rubber mixture and 3 lbs rounded or sub-angular, uniformly sized silica sand.
 16. Roll: 15 feet (4.6 m) feet wide, minimum.
 17. Field Graphics: Center logo to be determined by Owner. Include a three color 40 foot wide logo within proposal.
 - a. Inlaid Marking: Synthetic grass of same manufacturer in colors indicated on drawings. Soccer and lacrosse game lines per NCAA current guidelines shall be installed.
- C. Adhesives for bonding tufted synthetic turf shall be one-of the following:
1. Ultrabond® Turf PU 2k as manufactured Mapei Adhesives, Deerfield Beach, FL. Ultrabond is a high-performance, two-component, fast-set urethane adhesive designed for the high-performance seaming and direct bonding of artificial turf used in athletic and landscape applications.
 2. Seaming Tape: Tape for securing seams in the tufted synthetic turf and inlaid lines shall be high quality tape made with a minimum roll width of 12 inches.

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- D. Sewn seams: If seams are to be sewn, they must be sewn with high quality cord/thread as recommended by manufacturer.
- E. Synthetic Grass Infill:
 - 1. Resilient Infill: A resilient infill system, consisting of a specially formulated mixture of approximately 3 lbs. per square foot of rubber and 3 lbs. per square foot of sand engineered to provide the look, feel, footing and shock absorption of a natural grass field in ideal conditions.
 - a. Ambient-ground SBR Crumb-Rubber. Granules shall contain minimal dust or contaminants and shall be derived from the ambient processing form of recycled tires. Color shall be substantially black and shall meet the 10 – 20 or 8 – 16 mesh size designation.
 - 1) The clean, uniformly sized particles shall be consistent in shape and particle size distribution.
 - 2) The particles shall resist abrasion in high traffic and excessive wear applications and provide stability to Synthetic sports turf applications.
 - 3) The particles shall be processed and sized under rigid specifications and Manufacturers' statistical and quality control assurance program.
 - 4) Particles shall be structurally pure and consistently uniform in size distribution for predictable performance.
 - b. Sand Particulate. The sand provided as a component of the infill mixture shall be rounded or sub-angular so as to minimize abrasion to the athlete and synthetic grass fibers.
- F. Resilient Shock Pad:
 - 1. Standard of Quality is based on the following shock pad product; 6010SP Resilient Shockpad as manufactured by Ecore International, 1-800-322-1923 or acceptable equivalent. Foam pads shall not be acceptable for purposes of this application.
 - a. The Shock Pad shall be a porous composite (100% SBR particles bound with polyurethane) rubber pad (6010SP) in typical thickness of 10mm and shall have an infiltration rate of not less than 12 inches (12”) per hour, a minimum recovery rate of 94% at 100 psi per ASTM F36 and a tensile strength of 44 psi per ASTM D412, Die C. Material shall be delivered in four foot (4') wide rolls with protective wrapping, and be of such continuous length to cover the width of the field allowing only one head seam per roll.

2.2 SYNTHETIC GRASS SURFACING - SOFTBALL INFIELD ONLY

- A. Basis of Design: A-Turf Premier-RS slit film system in a 2 inch pile height, consisting of 46 ounces of fiber per square yard with 2 lbs. of rubber and 4 lbs. of sand per square foot. Total carpet weight shall be 72 ounces per square yard

2.3 MATERIALS

- A. Edge Anchoring: Wood-polymer composite lumber complying with ASTM D6662; factory finished, free of sharp vertical edges, protruding elements, and trip hazards, capable of being secured to border.

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1. Minimum Edge Radius: 1/2 inch.
- B. Border: Permanent element surrounding edge anchoring, consisting of curb with chain link fence:
 1. Cast-In-Place Concrete Curb: As indicated on drawings, smooth top. Ready mix concrete in compliance with ASTM C94/C94M.
 2. Chain Link Fence: As indicated on drawings.
- C. Choker (Finish Stone) Course: It is critically important that the finish stone layer is not laser-graded at more than 1 inch depth. Layers deeper than 1 inch are susceptible to over-compaction and restriction of porosity, leading to drainage issues. Fractured, non-rounded gravel; washed; free of dust, clay, dirt, organic material, hazardous substances, or foreign objects; rounded particles, either naturally or mechanically; sieved in compliance with ASTM C136/C136M in specified gradation range.
 1. Percent Passing Sieve Size 1/2 inch: 100 percent.
 2. Percent Passing Sieve Size 3/8 inch: 95-100 percent.
 3. Percent Passing Sieve Size No. 4: 70-85 percent.
 4. Percent Passing Sieve Size No. 8: 45-60 percent.
 5. Percent Passing Sieve Size No. 16: 25-40 percent.
 6. Percent Passing Sieve Size No. 100: 8-15 percent.
 7. Percent Passing Sieve Size No. 200: 0-5 percent.
 8. Depth: 1-inch.
 9. Subject to architectural approval, local or regional stone specifications that meet compaction and porosity requirements are permitted.
- D. Drainage (Base Stone) Course: The free-draining base aggregate base layer shall consist of a 5-inch consistent depth of open graded material. Base drainage aggregate must be rolled and compacted to eliminate settling. Material shall conform to the AASHTO #57 limestone classification. An open graded aggregate material may be used if available. The subgrade must achieve 95% compaction level and pass a proof roll before placement of the drainage stone can commence. Fractured, non-rounded gravel; washed; free of dust, clay, dirt, organic material, hazardous substances, or foreign objects; rounded particles, either naturally or mechanically; sieved in compliance with ASTM C136/C136M in specified gradation range.
 1. Percent Passing Sieve Size 1-1/2 inch: 100 percent.
 2. Percent Passing Sieve Size 1 inch: 95-100 percent.
 3. Percent Passing Sieve Size 1/2 inch: 25-60 percent.
 4. Percent Passing Sieve Size No. 4: 0-10 percent.
 5. Percent Passing Sieve Size No. 8: 0-5 percent.
 6. Depth: 5-inches.
- E. Drainage Pipes: Uniform material, free of defects:
 1. Perforations: As indicated on drawings.
 2. Size: As indicated on drawings.
- F. Geotextile: See Section 320519.

2.4 NEW GROOMING EQUIPMENT (INCLUDED WITH COOPERATIVE PURCHASE AGREEMENT)

- A. Provide one (1) pull behind “Synthetic Sports Turf Groomer”, model number 720SDE as manufactured by GreensGroomer Worldwide, 888-298-8852 or acceptable equivalent.

PART 3 EXECUTION

3.1 PREPARATION

- A. Lay out entire project perimeter as indicated on drawings prior to starting work.
- B. Measure location of all synthetic grass elements, including perimeter of existing synthetic grass surfacing, access and egress points, hard surfaces, walls, fences, and structures.
- C. Verify location of underground utilities and facilities in project area. Damage to underground utilities and facilities will be repaired at Contractor's expense.

3.2 SUBGRADE

- A. Excavate unsuitable soils, see Section 312316. Backfill with suitable material, see Section 312323.
- B. Correct irregularities to ensure that required depth of drainage layer can be installed, and elevation is in accordance with manufacturer's requirements.
- C. Remove all obstructions that extend into drainage layer within composite nailer boards.
- D. Perform rough and finish grading, see Section 312200.
- E. Shape to profile indicated on drawings and compact by proof rolling to minimum 95 percent, in compliance with ASTM D698.
- F. Flatness Tolerance: 1/2 inch in 10 feet, maximum.
- G. Perform percolation test at lowest elevation of subgrade, in compliance with ASTM STP322-1.
 - 1. Report results to Architect.
 - 2. If percolation is less than 1 inch in 3 hour period, do not proceed.
- H. Verify that subgrades are at proper elevations and that smooth grading is complete.

3.3 TRENCHING AND BACKFILLING

- A. Lay out trenching for entire drainage network prior to excavation, as indicated on drawings.
- B. Excavate trenches in accordance with drawings.
- C. Mirror base of trenches to finish grade.

- D. Open trenches require presence of daily site activity.
- E. Repair deviations from plans after drainage pipe installation and prior to installing geotextile.
- F. See Section 312316.13 for trenching.

3.4 DRAINAGE PIPE

- A. Install all piping and fittings as indicated on drawings.
- B. Install collector lines prior to laterals with deepest excavations first.
- C. Connect collector lines to discharge outlet prior to field use.
- D. Completion of installation in accordance to design requires approval by Architect.
- E. See Section 334211 for drainage pipe.

3.5 GEOTEXTILE

- A. Verify that subgrade is free of ruts or protruding objects.
- B. Install geotextile over subgrade in drainage trenches first, prior to field installation.
- C. Lap minimum 36 inches width at seams. Adhere seams in accordance with manufacturer's recommendations.
- D. Install smooth, and free of tensile stresses, folds, or wrinkles.
- E. Protect from clogging, tears, or other damage during surfacing installation.
- F. Repair or replace damaged geotextile in accordance with manufacturer's recommendations.

3.6 DRAINAGE AGGREGATE

- A. Choker Course:
 - 1. Install aggregate subbase as indicated on drawings and in Section 321120. Compact aggregate to maximum 95 percent, in accordance with ASTM D1557.
 - 2. Flatness Tolerance: 1/4 inch in 10 feet, maximum.
 - 3. Correct high and low areas in accordance with design drawings.
 - 4. Match top of layer with top of edge anchoring.
 - 5. Prevent base stone from entering into loose fill surfacing layer. Prevent loose fill from entering into base stone layer.
- B. Drainage (Base Stone) Course:
 - 1. Install aggregate subbase as indicated on drawings and in Section 321120. Compact aggregate to maximum 95 percent, in accordance with ASTM D1557.
 - 2. Flatness Tolerance: 1/2 inch in 10 feet, maximum.
 - 3. Correct high and low areas in accordance with design drawings.
 - 4. Mirror base stone elevations to final elevations.

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5. Prevent disturbance to geotextile during installation.
6. Approval of drainage piping by Architect required prior to commencement of installation.
Prevent disturbance of drainage piping during installation.

3.7 SHOCK ABSORBING COURSE

A. Resilient Shock Pad

1. After the choker layer grades have been approved and inspected, the resilient Shock Pad shall be installed from sideline to sideline.
 - a. Equipment and personnel shall take extreme care to minimize disturbance of the stone base during Shock Pad installation.
 - b. All operations shall work from behind the rolled out Shock Pad or from adjacent, pre-installed pad surface.
 - c. One head seam shall be allowed per length. Head seams shall be staggered so as not to be within 10' of the previously installed roll.
 - d. The head seam shall overlap approximately 4 inches on original roll out. Second and subsequent rolls shall be rolled out within 1 inch, or less, of the previous roll and allowed to expand or contract before manually sliding in place.
 - e. After allowance for expansion or contraction, the padding shall slide into place so as to touch the edge or seam of the previous. Care shall be taken so as not to disturb the choker layer material when butting the seams together.
2. The Resilient Shock Pad shall not receive a final cut or edging detail until the material has relaxed/expanded in direct sunlight for a minimum of six hours.
 - a. No open seams shall exceed 1/4" (in expanded state) after final seam or end cutting is complete.
 - b. Padding material shall stop just short of the exposed nailer board.
3. The Resilient ShockPad shall be inspected by the Contractor after completion to insure the surface is smooth with only minor bumps from stone particles or other material protruding from underneath that will not show up once the turf is laid over top.
 - a. Expansion bubbles and open seams shall be repaired prior to final inspection.
 - b. Repeat inspections shall be carried out prior to each roll of synthetic turf being installed.

3.8 EDGE ANCHORING

- A. Layout composite nailer boards. Approval of locations by Architect required prior to installing.
- B. Install along full perimeter of synthetic grass.
- C. Fasten to border with case hardened screws at 24 inch on center, minimum.
- D. Set top of edging flush or recessed 1/2 inch below top of border, maximum.

3.9 BORDER

- A. Verify that site furnishings and composite nailer boards located within project area are complete.

- B. Install border curbs according to design drawings.
- C. Chain Link Fence: Align centerlines of fence and curb. Apply grout to each curb hole installed with fence post, securing post in place. See Section 323113 for chain link fences and gates.

3.10 SYNTHETIC GRASS

- A. Carpet Rolls:
 - 1. Unroll all carpet in same direction.
 - 2. Prevent seams from being located over impact mats.
 - 3. Allow carpet to rest for at least 4 hours after unrolling and prior to seaming.
 - 4. Smooth seams and edges, eliminate overlaps and gaps.
- B. Seaming:
 - 1. Cut: Straight, with clean and smooth edge.
 - 2. Method:
 - a. Sewing: 2 thread, bound seam stitch.
 - b. Bonding: Adhesive-backed, applied uniformly with complete coverage.
 - c. Micromechanical: Utilizing hook-and-loop fasteners.
- C. Securing: Staple carpet to edging 1 inch (25 mm) on center.
- D. Field Graphics:
 - 1. Applied Marking: Per manufacturer recommendations, in dimensions and color patterns indicated on Shop Drawings.
 - 2. Inlaid Marking:
 - a. Inlay: Bond synthetic grass in colors indicated on Shop Drawings within sheared patterns.

3.11 INFILL

- A. Apply during dry weather without signs of moisture on synthetic grass.
- B. Thoroughly brush synthetic grass prior to infill installation.
- C. Apply infill uniformly in multiple lifts, brush fibers between each application.
- D. Measure depth to confirm accordance with plans.

3.12 FIELD QUALITY CONTROL

- A. See Section 014000 - Quality Requirements, for additional requirements.
- B. Drainage aggregate completion requires approval by Architect.
- C. Owner or Owner's representative will inspect synthetic grass after installation to verify that surfacing is of proper type and meets specified design safety and accessibility requirements.
- D. Repair or replace rejected work until compliant with specified requirements and design criteria.

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- E. Confirm rainfall permeability meets design, per ASTM F2898.
- F. Confirm impact attenuation meets design, per ASTM F1936.
- G. Replace damaged products before Date of Substantial Completion.

3.13 CLEANING

- A. Clean surrounding areas of excess construction materials, debris, and waste.
- B. Remove excess and waste material and dispose of off-site in accordance with requirements of authorities having jurisdiction.

3.14 PROTECTION

- A. Protect installed products until Date of Substantial Completion.
- B. Restore adjacent existing areas that have been damaged by work of this section.

END OF SECTION

SECTION 323113 - CHAIN LINK FENCES AND GATES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Posts, rails, and frames.
- B. Wire fabric.
- C. Concrete.
- D. Manual gates with related hardware.

1.2 RELATED REQUIREMENTS

- A. Section 033000 - Cast-in-Place Concrete: Concrete anchorage for posts.

1.3 REFERENCE STANDARDS

- A. ASTM F567 - Standard Practice for Installation of Chain-Link Fence; 2023.
- B. ASTM F626 - Standard Specification for Fence Fittings; 2023.
- C. ASTM F668 - Standard Specification for Polyvinyl Chloride (PVC), Polyolefin and Other Polymer-Coated Steel Chain Link Fence Fabric; 2017 (Reapproved 2022).
- D. ASTM F900 - Standard Specification for Industrial and Commercial Steel Swing Gates; 2017.
- E. ASTM F934 - Standard Specification for Standard Colors for Polymer-Coated Chain Link Fence Materials; 2022.
- F. ASTM F1043 - Standard Specification for Strength and Protective Coatings on Steel Industrial Fence Framework; 2018 (Reapproved 2022).
- G. ASTM F1083 - Standard Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures; 2018 (Reapproved 2022).
- H. ASTM F1184 - Standard Specification for Industrial and Commercial Horizontal Slide Gates; 2023, with Editorial Revision.
- I. CLFMI CLF-FIG0111 - Field Inspection Guide; 2014.
- J. CLFMI CLF-PM0610 - Product Manual; 2017.
- K. CLFMI CLF-SFR0111 - Security Fencing Recommendations; 2014.
- L. FS RR-F-191/1D - Fencing, Wire and Post Metal (Chain-Link Fence Fabric); 1990.

1.4 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on fabric, posts, accessories, fittings and hardware.
- C. Shop Drawings: Indicate plan layout, spacing of components, post foundation dimensions, hardware anchorage, and schedule of components. See CLFMI CLF-SFR0111 for planning and design recommendations.

1.5 QUALITY ASSURANCE

- A. Fence Installer: Company with demonstrated successful experience installing similar projects and products, with not less than five years of documented experience.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Chain Link Fences and Gates:
 - 1. Master-Halco, Inc; _____: www.masterhalco.com/#sle.
 - 2. Merchants Metals; _____: www.merchantsmetals.com/#sle.
 - 3. Substitutions: See Section 016000 - Product Requirements.

2.2 MATERIALS

- A. Posts, Rails, and Frames:
 - 1. Round steel pipe and rail: ASTM F1043 Group IA Heavy Industrial Fence Framework, schedule 40 galvanized pipe per ASTM F1083. Exterior hot dipped zinc coating minimum average 1.8 oz/sq ft, interior hot dipped zinc coating minimum average 1.8 oz/sq ft. Regular Grade or High Strength Grade.
 - 2. Comply with CLFMI CLF-PM0610.
 - 3. Polymer Coated Framework: Polymer coated framework shall have a PVC coating fused and adhered to the exterior zinc coating of the post or rail. PVC coatings shall have a minimum thickness 10-mils per ASTM F1043. Color black per ASTM F934.
- B. Wire Fabric: _____:
 - 1. ASTM F668 polymer-coated steel chain link fabric.
 - 2. Comply with CLFMI CLF-PM0610.
 - 3. Fabric: 1-3/4 inch diamond mesh interwoven wire, 9 gauge, 0.1483 inch thick, top selvage knuckle end closed, bottom selvage knuckle end closed.
- C. Concrete: _____:
 - 1. Type specified in Section 033000.

2.3 FITTINGS

- A. Tension and Brace Bands: Galvanized pressed steel complying with ASTM F626, minimum steel thickness of 12 gauge, minimum width of 3/4 inch and minimum zinc coating of 1.20 oz/sq ft.
- B. Terminal Post Caps, Line Post Loop Tops, Rail and Brace Ends, Boulevard Clamps, Rail Sleeves: In compliance to ASTM F626, pressed steel galvanized after fabrication having a minimum zinc coating of 1.20 oz/sq ft.
- C. Truss Rod Assembly: In compliance with ASTM F626, 3/8 inch diameter steel truss rod with a pressed steel tightener, minimum zinc coating of 1.2 oz/sq ft, assembly capable of withstanding a tension of 2,000 lbs.
- D. Tension Bars: In compliance with ASTM F626. Galvanized steel one-piece length 2 inches less than the fabric height. Minimum zinc coating 1.2 oz/sq ft.
 - 1. Bars for 2 inch and 1 3/4 inch mesh shall have a minimum cross section of 3/16 inch by 3/4 inch.
- E. Polymer Coated Color Fittings: In compliance with ASTM F626. Polymer coating minimum thickness 0.006 inch fused and adhered to zinc coated fittings. Match color to fence system.

2.4 TIE WIRE AND HOG RINGS

- A. Tie wire and hogs rings per ASTM F626. 9 gauge aluminum alloy ties, 9 gauge aluminum alloy hog rings, polymer coated; match the coating, class and color to that of the chain link fabric.

2.5 MANUAL GATES AND RELATED HARDWARE

- A. Manufacture gates and posts per ASTM F900.
- B. Hardware for Single Swinging Gates: 180 degree hinges, 2 for gates up to 60 inches high, 3 for taller gates; fork latch with gravity drop and padlock hasp; keeper to hold gate in fully open position.
- C. Hardware for Double Swinging Gates: 180 degree hinges, 2 for gates up to 60 inches high, 3 for taller gates; drop bolt on inactive leaf engaging socket stop set in concrete, active leaf latched to inactive leaf preventing raising of drop bolt, padlock hasp; keepers to hold gate in fully open position.
- D. Hinges: Finished to match fence components.
- E. Latches: Finished to match fence components.

2.6 HORIZONTAL SLIDE GATES

- A. General: ASTM F1184 for gate posts and single sliding gate types.
 - 1. Classification: Type II Cantilever Slide, Class 1 with external roller assemblies.
 - a. Gate Frame Width and Height: As indicated on drawings.

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2. The length of back frame support section shall be a minimum of 40% of the opening.
 3. Gates designed to open or close by applying an initial pull force no greater 40 lbs.
 4. Match chain link fabric to that of the fence system.
 5. Polymer coated horizontal slide gates and posts shall match the coating type and color as that specified for the fence framework.
- B. Pipe and Tubing:
1. Zinc-Coated Steel: Protective coating and finish to match fence framework.
 2. Gate Posts: ASTM F1184. Provide round tubular steel posts.
 3. Gate Frames and Bracing: Round tubular steel.
- C. Frame Corner Construction: Welded or assembled corner fittings.
- D. Hardware:
1. Hangers, Roller Assemblies, and Stops: Fabricated from galvanized steel.
 2. Latch: Permitting operation from both sides of gate with provision for padlocking accessible from both sides of gate.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install framework, fabric, accessories and gates in accordance with ASTM F567.
- B. Line Post Footing Depth Below Finish Grade: ASTM F567.
- C. Corner, Gate and Terminal Post Footing Depth Below Finish Grade: ASTM F567.
- D. Brace each gate and corner post to adjacent line post with horizontal center brace rail _____. Install brace rail one bay from end and gate posts.
- E. Provide top rail through line post tops and splice with 6 inch long rail sleeves.
- F. Stretch fabric between terminal posts or at intervals of 100 feet maximum, whichever is less.
- G. Position bottom of fabric 1 inches above finished grade.
- H. Fasten fabric to top rail, line posts, braces, and bottom tension wire with tie wire at maximum 15 inches on centers.
- I. Attach fabric to end, corner, and gate posts with tension bars and tension bar clips.
- J. Do not attach the hinged side of gate to building wall; provide gate posts.
- K. Provide concrete center drop to footing depth and drop rod retainers at center of double gate openings.
- L. Swing Gates: Installation of swing gates and gateposts in compliance with ASTM F567. Direction of swing shall be as indicated on drawings. Gates shall be plumb in the closed position having a bottom clearance of 3 inches, grade permitting. Hinge and latch offset opening space from the gate frame to the post shall be no greater than 3 inches in the closed position.

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Double gate drop bar receivers shall be set in a concrete footing minimum 6 inches diameter 24 inches deep. Gate leaf holdbacks shall be installed for all double gates.

- M. Horizontal Slide Gates: Installation varies by design and manufacturer, install according to manufacturers instructions and in accordance with ASTM F567. Gates shall be plum in the closed position, installed to slide with an initial pull force no greater than 40 lbs. Roller guards and guide posts must be installed on Type I external roller cantilever slide gate in compliance with ASTM F1184. Ground clearance shall be 3 inches, grade permitting.
- N. Carriage bolts used for fittings shall be installed with the head on the secure side of the fence.
- O. Peen all bolts upon installation.

3.2 TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch.
- B. Maximum Offset From True Position: 1 inch.

3.3 FIELD QUALITY CONTROL

- A. See Section 014000 - Quality Requirements, for additional requirements.
- B. Layout: Verify that fence installation markings are accurate to design, paying attention to gate locations, underground utilities, and property lines.
- C. Post Settings: Randomly inspect three locations against design for:
 - 1. Hole diameter.
 - 2. Hole depth.
 - 3. Hole spacing.
- D. Fence Height: Randomly measure fence height at three locations or at areas that appear out of compliance with design.
- E. Gates: Inspect for level, plumb, and alignment.
- F. Workmanship: Verify neat installation free of defects. See CLFMI CLF-FIG0111 for field inspection guidance.

3.4 CLEANING

- A. Clean jobsite of excess materials; scatter excess material from post hole excavations uniformly away from posts. Remove excess material if required.
- B. Clean fence with mild household detergent and clean water rinse well.
- C. Touch up scratched surfaces using materials recommended by manufacturer. Match touched-up paint color to factory-applied finish.

END OF SECTION

SECTION 329113 - PLANTING SOIL

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Planting soils specified by composition of the mixes.

1.2 ABBREVIATIONS AND ACRONYMS

- A. USCC: U.S. Composting Council.

1.3 DEFINITIONS

- A. Drainage: The rate at which soil water moves through the soil profile transitioning from saturated condition to field capacity. Expressed at saturated hydraulic conductivity (Ksat) in inches per hour.
- B. Imported Soil: Soil that is transported to Project site for use.
- C. Manufactured Soil: Soil produced by blending soils, sand, stabilized organic soil amendments, and other materials to produce planting soil.
- D. Organic Matter: The total of organic materials in soil exclusive of undecayed plant and animal tissues, their partial decomposition products, and the soil biomass; also called "humus" or "soil organic matter."
- E. Ped: A clump or clod of soil held together by a combination of clay, organic matter and fungal hyphae, retaining the original structure of the soil.
- F. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified as specified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.
- G. Scarify: Loosening and roughing the surface of the soil and subsoil.
- H. Soil Fracturing: Deep loosening of the soil to depths specified by using a backhoe.
- I. Soil Ripping: Loosening the soil by dragging a ripping shank or chisel through the soil to the depths and spacing specified.
- J. Soil Tilling: Loosening the surface of the soil to the depths specified using a rotary tine tiller, roto tiller or spade tiller.
- K. Soil Trenching: Excavating narrow trenches through the soil at the depths and spacing specified.

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- L. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.
- M. Surface Soil: Soil that is present at the top layer of the existing soil profile. In undisturbed areas, surface soil is typically called "topsoil"; but in disturbed areas such as urban environments, the surface soil can be subsoil.

1.4 REFERENCE STANDARDS

- A. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2023.
- B. ASTM C602 - Standard Specification for Agricultural Liming Materials; 2023.
- C. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)); 2012 (Reapproved 2021).

1.5 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: For each type of product.
 - 1. Include recommendations for application and use.
 - 2. Include test data substantiating that products comply with requirements.
 - 3. Include sieve analyses for aggregate materials.
- C. Material Certificates: For each type of imported soil and soil amendments before delivery to the site, according to the following:
 - 1. Manufacturer's qualified testing agency's certified analysis of standard products.
- D. Preconstruction Test Reports: For preconstruction soil analyses specified in "Preconstruction Testing" Article.
- E. Test Reports.
- F. Field Quality Control Reports.
- G. Installer's qualification statement.
- H. Testing agency's qualification statement.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing work of the type specified and with at least 3 years of documented experience.
 - 1. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site who has at least 3 years experience with projects of similar scale and complexity.
 - 2. Installer shall have experience in the proper and safe transportation and installation of soil material.

3. Installer shall have at least 3 years experience in installing designed soil mixes

- B. Testing Agency Qualifications: An independent, state-operated, or university-operated laboratory; experienced in soil science, soil testing, and plant nutrition; with the experience and capability to conduct the testing indicated; and that specializes in types of tests to be performed.
1. Multiple Laboratories: At Contractor's option, work may be divided among qualified testing laboratories specializing in physical testing, chemical testing, and fertility testing.

1.7 PRECONSTRUCTION TESTING

- A. Preconstruction Testing Service: Contractor will engage a qualified testing agency to perform preconstruction soil analyses on existing, on-site soil to be incorporated into Planting Soil.
- B. Preconstruction Soil Analyses: For each unamended soil type, perform testing on soil samples and furnish soil analysis and a written report containing soil-amendment and fertilizer recommendations by a qualified testing agency performing the testing according to "Soil-Sampling Requirements" and "Testing Requirements" articles.
1. Have testing agency identify and label samples and test reports according to sample collection and labeling requirements.
- C. Soil Sampling Requirements:
1. Sample Collection and Labeling: Have samples taken and labeled by Contractor under the direction of the testing agency.
2. Number and Location of Samples: Minimum of _____ representative samples from varied locations for each soil to be used or amended for landscaping purposes.
3. Procedures and Depth of Samples: According to USDA-NRCS's "Field Book for Describing and Sampling Soils."
4. Labeling: Label each sample with the date, location keyed to a site plan or other location system, visible soil condition, and sampling depth.

1.8 TESTING REQUIREMENTS

- A. General: Perform tests on soil samples according to requirements in this article.
- B. Physical Testing:
1. Soil Texture: Soil-particle, size-distribution analysis by one of the following methods according to SSSA's "Methods of Soil Analysis - Part 1-Physical and Mineralogical Methods":
- a. Sieving Method: Report sand-gradation percentages for very coarse, coarse, medium, fine, and very fine sand; and fragment-gradation (gravel) percentages for fine, medium, and coarse fragments; according to USDA sand and fragment sizes.
- b. Hydrometer Method: Report percentages of sand, silt, and clay.
2. Total Porosity: Calculate using particle density and bulk density according to SSSA's "Methods of Soil Analysis - Part 1-Physical and Mineralogical Methods."
3. Saturated Hydraulic Conductivity: According to SSSA's "Methods of Soil Analysis - Part 1-Physical and Mineralogical Methods"; at 85% compaction according to ASTM D698 (Standard Proctor).

- C. Fertility Testing: Soil-fertility analysis according to standard laboratory protocol of SSSA NAPT NEC-67 including the following:
 - 1. Percentage of organic matter.
 - 2. Soil reaction (acidity/alkalinity pH value).
 - 3. Buffered acidity or alkalinity.
 - 4. Nitrogen ppm.
 - 5. Phosphorous ppm.
 - 6. Potassium ppm.
 - 7. Soluble-salts ppm.
- D. Organic-Matter Content: Analysis using loss-by-ignition method according to SSSA's "Methods of Soil Analysis - Part 3- Chemical Methods."
- E. Recommendations: Based on the test results, state recommendations for soil treatments and soil amendments to be incorporated to produce satisfactory planting soil suitable for healthy, viable plants indicated. Include, at a minimum, recommendations for nitrogen, phosphorous, and potassium fertilization, and for micronutrients.
 - 1. Fertilizers and Soil Amendment Rates: State recommendations in weight per 1000 sq. ft. for 6-inch depth of soil.
 - 2. Soil Reaction: State the recommended liming rates for raising pH or sulfur for lowering pH according to the buffered acidity or buffered alkalinity in weight per 1000 sq. ft. for 6-inch depth of soil.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and compliance with state and Federal laws if applicable.
- B. Store bagged materials under cover and elevated above grade.
- C. Bulk Materials:
 - 1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
 - 2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
 - 3. Do not move or handle materials when they are wet or frozen.
 - 4. Accompany each delivery of bulk fertilizers and soil amendments with appropriate certificates.

PART 2 PRODUCTS

2.1 TOPSOIL

- A. Existing or Imported Topsoil: Shall be fertile, friable soil containing less than 10% total volume of the combination of subsoil, refuse, roots larger than 1 inch diameter, heavy, sticky or stiff

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clay, stones larger than 2 inches in any dimension. Topsoil shall be suitable for the germination of seeds and the support of vegetative growth. Imported Topsoil shall not contain noxious weed seeds in quantities that cause noticeable weed infestations in the final planting beds.

1. Soil Texture: USDA loam, sandy clay loam or sandy loam with clay content between 15 and 25% and a combined clay/silt content no greater than 55%.
 2. pH shall be between 5.5 and 7.0
 3. Percent organic matter shall be between 2 and 5%
 4. Soluble salt level less than 2 mmho/cm
 5. Soil chemistry suitable for growing the plants specified.
- B. Unacceptable Properties: Topsoil shall not contain the following:
1. Unacceptable Materials: Concrete slurry, concrete layers or chunks, cement, plaster, building debris, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, acid, and other extraneous materials that are harmful to plant growth.
 2. Large Materials: Stones, roots, clay lumps, and pockets of coarse sand exceeding 2 inches in any dimension.
- C. Imported topsoil shall be harvested from fields or development sites. The organic content and particle size distribution shall be the result of natural soil formation. Manufactured soils where coarse sand, organic material or chemicals have been added to meet the requirements of Topsoil shall not be acceptable.
- D. Imported topsoil shall not have been screened and shall retain soil peds or clods larger than 2 inches in any dimension.

2.2 INORGANIC SOIL AMENDMENTS

- A. Lime: ASTM C602, agricultural liming material containing a minimum of 80 percent calcium carbonate equivalent and as follows:
1. Class: T, with a minimum of 99 percent passing through a No. 8 (2.36-mm) sieve and a minimum of 75 percent passing through a No. 60 (0.25-mm) sieve.
 2. Form: Provide lime in form of ground dolomitic limestone.
- B. Sulfur: Granular, biodegradable, and containing a minimum of 90 percent elemental sulfur, with a minimum of 99 percent passing through a No. 6 (3.35-mm) sieve and a maximum of 10 percent passing through a No. 40 (0.425-mm) sieve.
- C. Coarse Sand: Clean, washed, natural, free of toxic materials, and according to ASTM C33/C33M Fine Aggregate, with a Fines Modulus Index of 2.8 – 3.2.

1. pH shall be lower than 7.0.
2. Provide Coarse Sand with the following particle size distribution:

<u>Sieve</u>	<u>Percent Passing</u>
3/8 inch (9.5mm)	100
No 4 (4.75mm)	95-100
No 8 (2.36mm)	80-100
No 16 (1.18mm)	50-85
No 30 (0.60mm)	20-60
No 50 (0.30mm)	10-30

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No 100 (0.15mm)	2-10
No 200 (0.075mm)	2-5

2.3 ORGANIC SOIL AMENDMENTS

- A. Compost: Well-composted, stable, and weed-free organic matter produced by composting feedstock, and bearing USCC's "Seal of Testing Assurance," and as follows:
1. Feedstock: Blended and ground leaf, wood and other plant based materials, free of toxic material at levels that are harmful to plants or humans.
 2. Reaction: pH of 5.5 to 8.
 3. Soluble-Salt Concentration: Maximum 5 dS/m.
 4. Moisture Content: 30 to 60 percent by weight.
 5. Organic-Matter Content: 30 to 65 percent of dry weight.
 6. Particle Size: Minimum of 98 percent passing through a 1 inch sieve.
 7. Stability Carbon Dioxide Evolution Rate: mg CO₂-C/ g OM/ day < 2
 8. Solvita Maturity Test: >6
 9. Physical Contaminants (inerts): <1% dry weight
 10. Chemical Contaminants, mg/kg (ppm): meet or exceed US EPA Class A standard, 40CFR § 503.13, Tables 1 and 3 levels
 11. Biological Contaminants select pathogens fecal coliform bacteria, or salmonella, meet or exceed US EPA Class A standard, 40 CFR § 503.32(a) level requirements.

2.4 PLANTING SOIL MIXES SPECIFIED BY USE

- A. General: Blends of existing topsoil, imported topsoil, coarse sand, compost and other amendments to create a new soil to meet the project goals for the indicated planting area. Soil ratios, amendments and rates of application specified in this article are guidelines that may need revision based on testing laboratory's recommendations after soil analyses are performed.
- B. Tree, Shrub and Turf Planting Soil: Moderately slow draining soil for trees, shrubs, perennials and general turf not subjected to high compaction. Blend existing and/or imported topsoil, coarse sand, compost with the following soil amendments in the following ratios to produce planting soil:
1. Topsoil: 80% by volume.
 2. Coarse Sand: 10% by volume.
 3. Compost: 10% by volume.
 4. Weight of Lime: As recommended by Soils Testing Agency.
 5. Weight of Sulfur: As recommended by Soils Testing Agency.
 6. Additional Properties: Soil reaction of pH 5.8 to 7 and 2.75 to 5% percent organic-matter content.

PART 3 EXECUTION

3.1 GENERAL

- A. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner,

turpentine, tar, roofing compound, or acid has been deposited in subgrade or planting soil.

- B. Test soils beneath staging areas and areas used to store materials including, but not limited to, paint, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acids.
- C. Proceed with planting soil placement only after unsatisfactory conditions have been corrected.
- D. Equipment utilized to install or grade Planting Soil Mixes shall be wide track or balloon tire machines rated with a ground pressure of 8 psi or less. Grading and soil delivery equipment shall have buckets with teeth to scarify soil surfaces.

3.2 PLACING AND MIXING PLANTING SOIL OVER EXPOSED SUBGRADE

- A. General: Apply and mix unamended soil with amendments on-site to produce required planting soil. Do not apply materials or till if existing subgrade is frozen, muddy, or excessively wet.
- B. Subgrade Preparation: Scarify subgrade to a minimum depth of 4 inches. Remove stones larger than 3 inches in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property unless otherwise indicated.
- C. Mixing: Do not mix if soil, sand, compost or amendments are frozen, muddy, or excessively wet.
 - 1. Mix lime and/or sulfur with dry soil As recommended by Soils Testing Agency.
 - 2. Mix Coarse Sand and Compost together first, then add to the Topsoil. Mix with a loader bucket to loosely incorporate the Topsoil into the Coarse Sand/Compost mix. Do not mix with a soil blending machine. Do not screen the Topsoil, clumps of Topsoil, Compost and Coarse Sand will be permitted in the overall Planting Soil Mix.
 - 3. Lifts: Apply Planting Soil Mix in lifts not exceeding 12 inches in loose depth for material compacted by compaction equipment, and not more than 4 inches in loose depth for material compacted by hand. Apply compacting forces to each lift as required to attain the specified compaction. Scarify the top of each lift prior to installing additional lifts.

3.3 COMPACTION REQUIREMENTS FOR INSTALLED PLANTING SOIL

- A. Compact installed Planting Soil Mixes to the compaction rates indicated. Compact each soil lift as the soil is installed.
- B. Provide adequate equipment to achieve consistent and uniform compaction of the Planting Soil Mixes. Use the smallest equipment that can reasonably perform the task of spreading and compaction.
- C. Do not pass motorized equipment over previously installed and compacted Planting Soil except for light weight equipment such as a trenching machine or motorized wheel barrow.
- D. The following are acceptable levels of compaction as determined by the method used to measure compaction:
 - 1. Standard Proctor Method ASTM D698: 75% to 85%
 - 2. Penetration Resistance Method (Penetrometer): 75-250 psi
 - 3. Bulk Density Method by Soil Texture: Bulk density in g/cm³
 - a. Loamy Sand: <1.60

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- b. Sandy Loam: <1.40
 - c. Sandy Clay Loam, Loam, Clay Loam: <1.40
 - d. Silt Loam, Silty Clay Loam: <1.10
- E. The following are threshold levels for excessive compaction as determined by the method used to measure compaction. Planting Soils exceeding excessive compaction threshold levels shall require over compaction reduction:
- 1. Standard Proctor Method ASTM D698: >90%
 - 2. Penetration Resistance Method (Penetrometer): >400 psi
 - 3. Bulk Density Method by Soil Texture: Bulk density in g/cm³
 - a. Loamy Sand: >1.75
 - b. Sandy Loam: >1.65
 - c. Sandy Clay Loam, Loam, Clay Loam: >1.55
 - d. Silt Loam, Silty Clay Loam: >1.45

3.4 OVER COMPACTION REDUCTION

- A. Any Planting Soil profile that becomes compacted to a density greater than the specified density shall be repaired or reconstructed.
- B. Planting Soil over compaction less than 6 inches below finished grade may be repaired by roto tilling.
- C. Planting Soil over compaction greater than 6 inches below finished grade shall be modified using one of the following techniques:
 - 1. Soil Ripping: Using a tracked dozer or similar large grading equipment, loosen the planting soil by dragging a ripping shank or chisel thru the planting soil to the profile depth with ripping shanks spaced 18 inches or less apart in two directions. The number of shanks per pull is dependent on the degree of soil compaction and the size of the dozer. After soil ripping repeat compost till layer installation using 1 inch depth of compost.
 - 2. Soil Fracturing: Loosen the planting soil to profile depth using a backhoe to dig into the soil. Lift and then drop the loosened planting soil immediately back into the hole. The bucket then moves to the adjacent soil and repeats the process until the entire area indicated has been loosened. After soil fracturing repeat compost till layer installation using 1 inch depth of compost.
 - 3. Trenching: Using a chain trenching machine, dig trenches to soil profile depth, 24 inches apart across the entire area. Maintain an 18 inch standoff from the edges of all curbs, paving and structures. Backfill the trenches with loosened planting soil. After trenching repeat compost till layer installation using 1 inch depth of compost.

3.5 FIELD QUALITY CONTROL

- A. Testing Agency: Contactor shall engage a qualified testing agency to perform tests.
- B. Perform the following tests:
 - 1. Compaction: Test planting-soil compaction after placing each lift and at completion using a penetrometer or soil-compaction meter calibrated to a reference test value based on laboratory testing according to ASTM D698. Space tests at no less than one for each

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2000 sq. ft. of in-place soil or part thereof.

- C. Prepare test reports.
- D. Soil will be considered defective if it does not pass tests.

3.6 PROTECTION

- A. Protect areas of in-place soil from additional compaction, disturbance, and contamination. Prohibit the following practices within these areas except as required to perform planting operations:
 - 1. Storage of construction materials, debris, or excavated material.
 - 2. Parking vehicles or equipment.
 - 3. Vehicle traffic.
 - 4. Foot traffic.
 - 5. Erection of sheds or structures.
 - 6. Impoundment of water.
 - 7. Excavation or other digging unless otherwise indicated.
- B. If planting soil is overcompacted, disturbed, or contaminated by foreign or deleterious materials or liquids, remove the planting soil and contamination; restore the subgrade as directed and replace contaminated planting soil with new planting soil.

3.7 CLEANING

- A. Protect areas adjacent to planting-soil preparation and placement areas from contamination. Keep adjacent paving and construction clean and work area in an orderly condition.
- B. Remove surplus soil and waste material including excess subsoil, unsuitable materials, trash, and debris and legally dispose of them off Owner's property unless otherwise indicated.

END OF SECTION

SECTION 329219 - SEEDING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Seeding or Hydroseeding, mulching and fertilizer.
- B. Maintenance.

1.2 RELATED REQUIREMENTS

- A. Section 329113 - Planting Soil: Topsoil composition and placement.

1.3 REFERENCE STANDARDS

- A. AOSA RULES - Rules for Testing Seeds; 2024.

1.4 DEFINITIONS

- A. Finish Grade: Elevation of finished surface of planting soil.
- B. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. They also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.
- C. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. Pests include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.
- D. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.
 - 1. See 329113 - Planting Soil and drawing designations for planting soils.
- E. Subgrade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.
- F. Weeds: Include Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

1.5 SUBMITTALS

- A. Qualification Data: For landscape Installer.

- B. Certificate: Certify seed mixture approval by authority having jurisdiction for each grass-seed monostand or mixture, stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.
- C. Product Certificates: For fertilizers, from manufacturer.
- D. Pesticides and Herbicides: Product label and manufacturer's application instructions specific to Project.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful turf establishment.
 - 1. Experience: Three year's experience in turf installation in addition to requirements in Section 014000 - Quality Requirements.
 - 2. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
 - 3. Pesticide Applicator: State licensed, commercial.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver grass seed mixture in sealed containers. Seed in damaged packaging is not acceptable. Deliver seed mixture in containers showing percentage of seed mix, year of production, net weight, date of packaging, and location of packaging.
- B. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.
- C. Bulk Materials:
 - 1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
 - 2. Provide erosion-control measures to prevent erosion or displacement of bulk materials; discharge of soil-bearing water runoff; and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
 - 3. Accompany each delivery of bulk materials with appropriate certificates.

1.8 FIELD CONDITIONS

- A. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

PART 2 PRODUCTS

2.1 REGULATORY REQUIREMENTS

- A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA RULES "Rules for Testing Seeds" for purity and germination tolerances.

2.2 SEED MIXTURE

- A. Grass Seed Mix: Proprietary seed mix as follows:
 - 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. Summer Green Supreme Mix as manufactured by Preferred Seed or acceptable equivalent.
- B. Seeding Rate: 8 lb/1000 sq. ft.

2.3 SOIL MATERIALS

- A. Topsoil: As specified in Section 329113 - Planting Soil.

2.4 ACCESSORIES

- A. Fiber Mulch: Biodegradable, dyed-wood, cellulose-fiber mulch; nontoxic and free of plant-growth or germination inhibitors; with a maximum moisture content of 15 percent and a pH range of 4.5 to 6.5
- B. Nonasphaltic Tackifier: Colloidal tackifier recommended by fiber-mulch manufacturer for slurry application; nontoxic and free of plant-growth or germination inhibitors.
- C. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:
 - 1. Composition: 1 lb/1000 sq. ft. of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.
- D. Water: Clean, fresh and free of substances or matter that could inhibit vigorous growth of grass.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine areas to be planted for compliance with requirements and other conditions affecting installation and performance of the Work.
 - 1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel,

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- paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
- 2. Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
- 3. Uniformly moisten excessively dry soil that is not workable or which is dusty.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Architect and replace with new planting soil.

3.2 PREPARATION

- A. Protect structures; utilities; sidewalks; pavements; and other facilities, trees, shrubs, and plantings from damage caused by planting operations.
- B. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- C. Before planting, obtain Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.3 FERTILIZING

- A. Apply fertilizer in accordance with manufacturer's instructions.
- B. Apply after smooth raking of topsoil .
- C. Mix thoroughly into upper 2 inches of topsoil.

3.4 HYDROSEEDING

- A. Hydroseeding: Mix specified seed, fertilizer, and fiber mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.
- B. Spray-apply slurry uniformly to all areas to be seeded in a one-step process. Apply slurry at a rate so that mulch component is deposited at not less than 1500-lb/acre dry weight, and seed component is deposited at not less than the specified seed-sowing rate.
- C. Following germination, immediately re-seed areas without germinated seeds that are larger than 8 by 8 inches.

3.5 MAINTENANCE

- A. Maintenance period is not defined by number of mowings or time. Contractor is responsible for turf maintenance until satisfactory turf as specified is achieved.

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- B. General: Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.
 - 1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
 - 2. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement.
 - 3. Apply treatments as required to keep turf and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.
- C. Provide maintenance at no extra cost to Owner; Owner will pay for water.
- D. See Section 017000 - Execution Requirements, for additional requirements relating to maintenance service.
- E. Mow grass at regular intervals to maintain at a maximum height of 2-1/2 inches. Do not cut more than 1/3 of grass blade at any one mowing.
- F. Neatly trim edges and hand clip where necessary.
- G. Immediately remove clippings after mowing and trimming.
- H. Water to prevent grass and soil from drying out.
- I. Immediately reseed areas that show bare spots.
- J. Turf Postfertilization: Apply fertilizer after initial mowing and when grass is dry.
 - 1. Use fertilizer that provides actual nitrogen of at least 1 lb/1000 sq. ft. to turf area.
- K. Protect seeded areas with warning signs during maintenance period.

3.6 SATISFACTORY TURF

- A. Turf installations shall meet the following criteria as determined by Architect:
 - 1. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. and bare spots not exceeding 8 inches by 8 inches.
- B. Use specified materials to reestablish turf that does not comply with requirements, and continue maintenance until turf is satisfactory.

3.7 PESTICIDE APPLICATION

- A. Apply pesticides and other chemical products and biological control agents according to requirements of authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.

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- B. Post-Emergent Herbicides (Selective and Nonselective): Apply only as necessary to treat already-germinated weeds and according to manufacturer's written recommendations.

3.8 CLEANUP AND PROTECTION

- A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.
- B. Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of them off Owner's property.
- C. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.

END OF SECTION

SECTION 329300 - PLANTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. New trees and shrubs.
- B. Mulch.

1.2 DEFINITIONS

- A. Backfill: The earth used to replace or the act of replacing earth in an excavation.
- B. Balled and Burlapped Stock: Plants dug with firm, natural balls of earth in which they were grown, with a ball size not less than diameter and depth recommended by ANSI/AHIA Z60.1 for type and size of plant required; wrapped with burlap, tied, rigidly supported, and drum laced with twine with the root flare visible at the surface of the ball as recommended by ANSI/AHIA Z60.1.
- C. Container-Grown Stock: Healthy, vigorous, well-rooted plants grown in a container, with a well-established root system reaching sides of container and maintaining a firm ball when removed from container. Container shall be rigid enough to hold ball shape and protect root mass during shipping and be sized according to ANSI/AHIA Z60.1 for type and size of plant required.
- D. Finish Grade: Elevation of finished surface of planting soil.
- E. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. They also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant. Some sources classify herbicides separately from pesticides.
- F. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. Pests include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.
- G. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth. See Section 329113 - Planting Soil for drawing designations for planting soils.
- H. Root Flare: Also called "trunk flare." The area at the base of the plant's stem or trunk where the stem or trunk broadens to form roots; the area of transition between the root system and the stem or trunk.
- I. Stem Girdling Roots: Roots that encircle the stems (trunks) of trees below the soil surface.

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- J. Subgrade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.
- K. Plants: Living trees, plants, and ground cover specified in this Section, and described in ANSI Z60.1.

1.3 COORDINATION

- A. Coordination with Turf Areas (Lawns): Plant trees, shrubs, and other plants after finish grades are established and before planting turf areas unless otherwise indicated.
 - 1. When planting trees, shrubs, and other plants after planting turf areas, protect turf areas, and promptly repair damage caused by planting operations.

1.4 REFERENCE STANDARDS

- A. ANSI/AHIA Z60.1 - American National Standard for Nursery Stock; 2014.

1.5 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: For each type of product.
 - 1. Plant Materials: Include quantities, sizes, quality, and sources for plant materials.
- C. Qualification Data: For landscape Installer. Include list of similar projects completed by Installer demonstrating Installer's capabilities and experience. Include project names, addresses, and year completed, and include names and addresses of owners' contact persons.
- D. Product Certificates: For each type of manufactured product, from manufacturer, and complying with the following:

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful establishment of plants.
 - 1. Experience: Three years' experience in landscape installation in addition to requirements in Section 014000 - Quality Requirements.
 - 2. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
 - 3. Pesticide Applicator: State licensed, commercial.
- B. Provide quality, size, genus, species, and variety of plants indicated, complying with applicable requirements in ANSI/AHIA Z60.1.
- C. Measurements: Measure according to ANSI/AHIA Z60.1. Do not prune to obtain required sizes.
 - 1. Trees and Shrubs: Measure with branches and trunks or canes in their normal position. Take height measurements from or near the top of the root flare for field-grown stock and container-grown stock. Measure main body of tree or shrub for height and spread; do not

measure branches or roots tip to tip. Take caliper measurements 6 inches above the root flare for trees up to 4-inch caliper size, and 12 inches above the root flare for larger sizes.

- D. Plant Material Observation: Architect may observe plant material either at place of growth or at site before planting for compliance with requirements for genus, species, variety, cultivar, size, and quality. Architect may also observe trees and shrubs further for size and condition of balls and root systems, pests, disease symptoms, injuries, and latent defects and may reject unsatisfactory or defective material at any time during progress of work. Remove rejected trees or shrubs immediately from Project site.
 - 1. Notify Architect of sources of planting materials seven days in advance of delivery to site.
- E. Non-native, Invasive Plant Species: Do not introduce, grow, or cultivate plant species that are non-native to the ecosystem of the project site, and whose introduction causes or is likely to cause economic or environmental harm or harm to human health.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws if applicable.
- B. Do not prune trees and shrubs before delivery. Protect bark, branches, and root systems from sun scald, drying, wind burn, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of plants during shipping and delivery. Do not drop plants during delivery and handling.
- C. Handle planting stock by root ball.
- D. Wrap trees and shrubs with burlap fabric over trunks, branches, stems, twigs, and foliage to protect from wind and other damage during digging, handling, and transportation.
- E. Deliver plants after preparations for planting have been completed, and install immediately. If planting is delayed more than six hours after delivery, set plants and trees in their appropriate aspect (sun, filtered sun, or shade), protect from weather and mechanical damage, and keep roots moist.
 - 1. Set balled stock on ground and cover ball with soil, pea gravel, mulch, or other acceptable material.
 - 2. Do not remove container-grown stock from containers before time of planting.
 - 3. Water root systems of plants stored on-site deeply and thoroughly with a fine-mist spray. Water as often as necessary to maintain root systems in a moist, but not overly wet condition.

1.8 FIELD CONDITIONS

- A. Field Measurements: Verify actual grade elevations, service and utility locations, irrigation system components, and dimensions of plantings and construction contiguous with new plantings by field measurements before proceeding with planting work.

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- B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions and warranty requirements.
- C. Do not install plant life when ambient temperatures may drop below 35 degrees F or rise above 90 degrees F.

1.9 WARRANTY

- A. See Section 017800 - Closeout Submittals, for additional warranty requirements.
- B. Warranty: Repair or replace plantings and accessories that fail in materials, workmanship, or growth within specified warranty period.
 - 1. Death and unsatisfactory growth, except for defects resulting from abuse, lack of adequate maintenance, or neglect by Owner.
 - 2. Structural failures including plantings falling or blowing over.
 - 3. Faulty performance of tree stabilization.
- C. Warranty Periods: From date of Substantial Completion .
 - 1. Trees and Shrubs: 18 months.
 - 2. Include the following remedial actions as a minimum:
 - a. Immediately remove dead plants and replace unless required to plant in the succeeding planting season.
 - b. Replace plants that are more than 33 percent dead or in an unhealthy condition at end of warranty period.
 - c. A limit of one replacement of each plant is required except for losses or replacements due to failure to comply with requirements.
 - d. Provide extended warranty for period equal to original warranty period, for replaced plant material.
- D. Replacements: Plants of same size and species as specified, planted in the next growing season, with a new warranty commencing on date of replacement.

PART 2 PRODUCTS

2.1 PLANTS

- A. Plants: Species and size identified in plant schedule, grown in climatic conditions similar to those in locality of the work.
- B. General: Furnish nursery-grown plants true to genus, species, variety, cultivar, stem form, shearing, and other features indicated in Plant List, Plant Schedule, or Plant Legend indicated on Drawings and complying with ANSI/AHIA Z60.1; and with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully branched, healthy, vigorous stock, densely foliated when in leaf and free of disease, pests, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.

- C. Plant Quality above the soil line:
 - 1. Plants shall be healthy with the color, shape, size and distribution of trunk, stems, branches, buds and leaves normal to the plant type specified.
 - 2. Tree quality above the soil line shall comply with the following:
 - a. Crown: The form and density of the crown shall be typical for a young specimen of the species or cultivar pruned to a central and dominant leader. Crown specifications do not apply to plants that have been specifically trained in the nursery as topiary, espalier, multi-stem, clump, or unique selections such as contorted or weeping cultivars.
 - b. Leaves: The size, color, and appearance of leaves shall be typical for the time of year and stage of growth of the species or cultivar. Trees shall not show signs of prolonged moisture stress or over watering as indicated by wilted, shriveled, or dead leaves.
 - c. Branches: Shoot growth (length and diameter) throughout the crown should be appropriate for the age and size of the species or cultivar. Trees shall not have dead, diseased, broken, distorted, or otherwise injured branches. Main branches shall be distributed along the central leader not clustered together. They shall form a balanced crown appropriate for the cultivar/species. Branch diameter shall be no larger than two-thirds (one-half is preferred) the diameter of the central leader measured 1 inch above the branch union. The attachment of the largest branches (scaffold branches) shall be free of included bark.
 - d. Trunk: The tree trunk shall be relatively straight, vertical, and free of wounds that penetrate to the wood (properly made pruning cuts, closed or not, are acceptable and are not considered wounds), sunburned areas, conks (fungal fruiting bodies), wood cracks, sap leakage, signs of boring insects, galls, cankers, girdling ties, or lesions (mechanical injury).
- D. Plant quality at or below the soil line:
 - 1. Plant roots shall be normal to the plant type specified.
 - 2. Tree root observations shall take place without impacting tree health. Root quality at or below the soil line shall comply with the following:
 - a. The Root Flare shall be within the upper 2 inches of the soil. Two structural roots shall reach the side of the root ball near the top surface of the root ball. The grower may request a modification to this requirement for species with roots that rapidly descend, provided that the grower removes all stem girdling roots above the structural roots across the top of the root ball.
 - b. At time of observations and delivery, the root ball shall be moist throughout. Roots shall not show signs of excess soil moisture conditions as indicated by stunted, discolored, distorted, or dead roots.
- E. Collected Stock: Do not use plants harvested from the wild, from native stands, from an established landscape planting, or not grown in a nursery unless otherwise indicated.
- F. Provide plants of sizes, grades, and ball or container sizes complying with ANSI/AHIA Z60.1 for types and form of plants required. Plants of a larger size may be used if acceptable to Architect, with a proportionate increase in size of roots or balls.

- G. Labeling: Label each plant of each variety, size, and caliper with a securely attached, waterproof tag bearing legible designation of common name and full scientific name, including genus and species. Include nomenclature for hybrid, variety, or cultivar, if applicable for the plant.

2.2 SOIL MATERIALS

- A. Planting Soil: As specified in Section 329113 - Planting Soil.

2.3 MULCH MATERIALS

- A. Organic Mulch: Free from deleterious materials and suitable as a top dressing of trees and shrubs, consisting of one of the following:
 - 1. Type: Double hammered seasoned hardwood mulch as commercially available.
 - 2. Color: Natural.

2.4 TREE STABILIZATION MATERIALS

- A. Trunk-Stabilization Materials:
 - 1. Upright and Guy Stakes: Rough-sawn, sound, new hardwood, free of knots, holes, cross grain, and other defects, 2-by-2-inch nominal by length indicated, pointed at one end.
 - 2. Tree-Tie Webbing: UV-resistant, flat woven polypropylene webbing, $\frac{3}{4}$ " wide with a minimum tensile strength of 900 lbs.

2.5 MISCELLANEOUS PRODUCTS

- A. Burlap: Non-synthetic, biodegradable.
- B. Antidesiccant: Water-insoluble emulsion, permeable moisture retarder, film forming, for trees and shrubs. Deliver in original, sealed, and fully labeled containers and mix according to manufacturer's written instructions.
- C. Water: Clean, fresh, and free of substances or matter that could inhibit vigorous growth of plants.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine areas to receive plants, with Installer present, for compliance with requirements and conditions affecting installation and performance of the Work.
 - 1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
 - 2. Verify that plants and vehicles loaded with plants can travel to planting locations with adequate overhead clearance.

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3. Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
 4. Uniformly moisten excessively dry soil that is not workable or which is dusty.
- B. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Architect and replace with new planting soil.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities and turf areas and existing plants from damage caused by planting operations.
- B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.
- C. Lay out individual tree and shrub locations and areas for multiple plantings. Stake locations, outline areas, adjust locations when requested, and obtain Architect's acceptance of layout before excavating or planting. Make minor adjustments as required.

3.3 PLANTING AREA ESTABLISHMENT

- A. General: Prepare planting area for soil placement and mix planting soil according to Section 329113 - Planting Soil.
- B. Placing Planting Soil:
1. Place planting soil over exposed subgrade to depths and limits as indicated on Drawings.
 2. Place planting soil in lifts according to Section 329113 - Planting Soil.
- C. Before planting, obtain Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.4 EXCAVATION FOR TREES AND SHRUBS

- A. Planting Pits and Trenches:
1. Excavate approximately three times as wide as ball diameter for plant stock.
 2. Do not excavate deeper than depth of the root ball, measured from the root flare to the bottom of the root ball.
 3. If area under the plant was initially dug too deep, add soil to raise it to the correct level and thoroughly tamp the added soil to prevent settling.
 4. Maintain angles of repose of adjacent materials to ensure stability. Do not excavate subgrades of adjacent paving, structures, hardscapes, or other new or existing improvements.
 5. Maintain supervision of excavations during working hours.
 6. Keep excavations covered or otherwise protected when unattended by Installer's personnel.

- B. Backfill Soil: Subsoil and topsoil removed from excavations may be used as backfill soil if it meets the requirements of Section 329113 - Planting Soil unless otherwise indicated.

3.5 TREE AND SHRUB PLANTING

- A. Inspection: At time of planting, verify that root flare is visible at top of root ball according to ANSI/AHIA Z60.1. If root flare is not visible, remove soil in a level manner from the root ball to where the top-most structural root emerges from the trunk. After soil removal to expose the root flare, verify that root ball still meets size requirements.
- B. Roots: Remove stem girdling roots and kinked roots. Remove injured roots by cutting cleanly; do not break.
- C. Balled and Burlapped Stock: Set each plant plumb and in center of planting pit or trench with root flare 1 inch above adjacent finish grades.
 - 1. Backfill: Planting soil.
 - 2. After placing some backfill around root ball to stabilize plant, carefully cut and remove burlap, rope, and wire baskets from tops of root balls and from sides, but do not remove from under root balls. Remove pallets, if any, before setting. Do not use planting stock if root ball is cracked or broken before or during planting operation.
 - 3. Remove excess soil from top of root ball, if present, to expose root flare. Verify remaining root ball meets requirements of ANSI/AHIA Z60.1. Reset plant with root flare 1 inch above adjacent finish grades.
 - 4. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
 - 5. Continue backfilling process. Water again after placing and tamping final layer of soil.
- D. Container-Grown Stock: Set each plant plumb and in center of planting pit or trench with root flare 1 inch above adjacent finish grades.
 - 1. Backfill: Planting soil.
 - 2. Carefully remove root ball from container without damaging root ball or plant.
 - 3. Remove excess soil from top of root ball, if present, to expose root flare. Verify remaining root ball meets requirements of ANSI/AHIA Z60.1. Reset plant with root flare 1 inch above adjacent finish grades.
 - 4. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
 - 5. Remove excess soil from top of root ball, if present, to expose root flare. Verify remaining root ball meets requirements of ANSI/AHIA Z60.1. Reset plant with root flare 1 inch above adjacent finish grades.
- E. Slopes: When planting on slopes, set the plant so the root flare on the uphill side is flush with the surrounding soil on the slope; the edge of the root ball on the downhill side will be above the surrounding soil. Apply enough soil to cover the downhill side of the root ball.

3.6 TREE STABILIZATION

- A. Trunk Stabilization by Upright Staking and Tying: Install trunk stabilization as follows unless otherwise indicated:
 - 1. Upright Staking and Tying: Stake trees with two stakes for trees up to 12 feet high and 2-1/2 inches or less in caliper; three stakes for trees less than 14 feet high and up to 4 inches in caliper. Space stakes equally around trees.
 - 2. Support trees with bands of flexible ties at contact points with tree trunk. Allow enough slack to avoid rigid restraint of tree.

3.7 TREE AND SHRUB PRUNING

- A. Upon completion of planting, all trees and shrubs shall be pruned and injuries repaired. The amount of pruning shall be limited to the minimum number of cuts necessary to remove dead or injured twigs and branches. Pruning shall be done in such a manner as not to change the natural habit or shape of the plant. All cuts shall be made at the branch collar without leaving a protruding stub. Pruning shall be in accordance with ANSI A300 Part 1 Maintenance Pruning objectives. Remove only dead, dying, or broken branches. Do not prune for shape.
- B. Do not apply pruning paint to wounds.

3.8 PLANTING AREA MULCHING

- A. Mulch backfilled surfaces of planting areas and other areas indicated.
 - 1. Mulch in Tree and Shrub Planting Areas: Apply 3-inch average thickness of organic mulch extending minimum 6 inches beyond drip edge of individual plants or over whole surface of planting area, and finish level with adjacent finish grades. Do not place mulch within 3 inches of trunks or stems.
 - 2. Mulch in Ground Cover Planting Areas: Apply 1-1/2-inch average thickness of organic mulch extending minimum 6 inches beyond drip edge of individual plants or over whole surface of planting area, and finish level with adjacent finish grades. Do not place mulch within 3 inches of trunks or stems

3.9 FERTILIZING

- A. Apply fertilizer to shrubs, ground covers and perennials in accordance with manufacturer's instructions.
- B. Apply after initial raking of topsoil.
- C. Mix thoroughly into upper 2 inches of topsoil.
- D. Lightly water to aid the dissipation of fertilizer.
- E. Do not apply fertilizer to trees

3.10 MAINTENANCE

- A. General: Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, adjusting and repairing tree-stabilization devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings.
- B. Fill in, as necessary, soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.
- C. Use integrated pest management practices when possible to minimize use of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.

3.11 REPAIR AND REPLACEMENT

- A. General: Repair or replace existing or new plants that are damaged by construction operations, in a manner approved by Architect.
 - 1. Submit details of proposed pruning and repairs.
 - 2. Perform repairs of damaged trunks, branches, and roots within 24 hours, if approved.
 - 3. Replace plants that cannot be repaired and restored to full-growth status, as determined by Architect.
- B. Remove and replace plants that are more than 33 percent dead or in an unhealthy condition before the end of the corrections period or are damaged during construction operations that Architect determines are incapable of restoring to normal growth pattern.
 - 1. Provide new plants of same size as those being replaced.
 - 2. Species of Replacement Trees: Same species being replaced.

3.12 CLEANING AND PROTECTION

- A. During planting, keep adjacent paving and construction clean and work area in an orderly condition. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.
- B. Remove surplus soil and waste material including excess subsoil, unsuitable soil, trash, and debris and legally dispose of them off Owner's property.
- C. Protect plants from damage due to landscape operations and operations of other contractors and trades. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged plantings.
- D. After installation and before Substantial Completion remove nursery tags, nursery stakes, tie tape, labels, wire, burlap, and other debris from plant material, planting areas, and Project site.

END OF SECTION

SECTION 330110.58 - DISINFECTION OF WATER UTILITY PIPING SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Testing and reporting results.

1.2 RELATED REQUIREMENTS

1.3 PRICE AND PAYMENT PROCEDURES

- A. See Section 012200 - Unit Prices, for additional unit price requirements.

1.4 REFERENCE STANDARDS

- A. AWWA B300 - Hypochlorites; 2024.
- B. AWWA B301 - Liquid Chlorine; 2024.
- C. AWWA B302 - Ammonium Sulfate; 2023.
- D. AWWA B303 - Sodium Chlorite; 2024.

1.5 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Test Reports: Indicate results comparative to specified requirements.
- C. Certificate: From authority having jurisdiction indicating approval of water system. Processed by Engineer/Owner to DOH.
- D. Certificate: Certify that cleanliness of water distribution system meets or exceeds specified requirements.
- E. Disinfection report:
 - 1. Type and form of disinfectant used.
 - 2. Date and time of disinfectant injection start and time of completion.
 - 3. Test locations.
 - 4. Initial and 24 hour disinfectant residuals (quantity in treated water) in ppm for each outlet tested.
 - 5. Date and time of flushing start and completion.
 - 6. Disinfectant residual after flushing in ppm for each outlet tested.
 - 7. The certified bacteriological test results must be delivered to the Owner and/or Engineer immediately upon completion.

- F. Bacteriological report:
1. Date issued, project name, and testing laboratory name, address, and telephone number.
 2. Time and date of water sample collection.
 3. Name of person collecting samples.
 4. Test locations.
 5. Initial and 24 hour disinfectant residuals in ppm for each outlet tested.
 6. Coliform bacteria test results for each outlet tested.
 7. Certification that water complies, or fails to comply, with bacterial standards of _____.
 8. Bacteriological tests results shall expire 30 calendar days after the samples were taken. After 30 calendar days, if the new main has not been placed into service, the Contractor will be required to repeat the process, taking two sets of samples and submitting the results to the Engineer for review.

PART 2 PRODUCTS

2.1 DISINFECTION CHEMICALS

- A. Chemicals: AWWA B300 Hypochlorite, AWWA B301 Liquid Chlorine, AWWA B302 Ammonium Sulfate, and AWWA B303 Sodium Chlorite.

PART 3 EXECUTION

3.1 DISINFECTION

A. ADJUST AND CLEAN

1. Disinfection of Potable Water Systems: All piping connecting to, and forming a part of, a potable water system shall be disinfected in a manner acceptable to the New York State Department of Health. The method described as follows, or other method acceptable to the Health Department having jurisdiction, shall be used. Water for disinfection and flushing shall be furnished and disposed of by the Contractor.

B. CHLORINATION

1. Disinfect the piping system with chlorine applied by introduction of a hypochlorite solution derived from either Sodium Hypochlorite (NaOCl) solution, or Calcium Hypochlorite (Ca(OCl)₂) granules, conforming to ANSI/AWWA B300. The use of Liquefied Elemental Chlorine Gas (Cl₂), Calcium Hypochlorite in tablet form, and Calcium Hypochlorite intended for swimming pool disinfection shall not be allowed.
 - a. Sodium Hypochlorite shall be provided in liquid form containing approximately 5% to 15% available (free) chlorine.
 - b. Calcium Hypochlorite shall be provided in commercial grade granular form containing approximately 65% available (free) chlorine by weight. Hypochlorite granules shall first be made into a paste and then thinned to about 1% chlorine solution. This will require about 7.5 gallons of water to each pound of dry powder.
 - c. Liquid Chlorine Gas conforming to ANSI/AWWA B301 shall be used only: in combination with appropriate gas-flow chlorinators and ejectors; under the direct

- supervision of a qualified, trained individual; and when appropriate safety practices are observed. Makeshift equipment is not acceptable when liquid chlorine (gas) cylinders are used.
- d. Solutions shall be prepared in a plastic or rust-free steel barrel and any solids permitted to settle out.
2. The clear supernatant shall be applied to the main through a rubber hose by a suitable pump feeder. The point of application of the chlorinating agent shall be at the beginning of the piping system or any valved sections thereof, through a corporation inserted in the top of the newly installed pipe. Water from the existing distribution system shall be controlled so as to flow slowly into the newly installed piping system during the application of the chlorine. The rate of chlorine mixture flow shall be in such proportion to the water entering the newly installed pipe that the resulting free chlorine residual shall be between 50 and 100 ppm (*mg/l*). Concentrations over 100 ppm (*mg/l*) shall not be allowed to enter the piping system. Valves shall be manipulated so that the strong chlorine solution in the pipe being treated will not flow back into the line supplying the water.
 3. The chlorinated water shall be retained in the main for at least 24 hours without any water usage, during which time all valves and hydrants in the section treated shall be operated in order to disinfect the appurtenances. At the end of this 24-hour period, the treated water shall contain no less than 25 ppm (*mg/l*) chlorine throughout the length of the main.
 4. When making repairs, connections of the approved water main to the existing system, or when specified, the structures and portions of pipe lines not able to be disinfected by conventional methods, shall be chlorinated by a concentrated chlorine solution containing between 200 ppm (*mg/l*) and 300 ppm (*mg/l*) of free chlorine. The solution shall be applied with a brush or sprayed on the entire inner surface of the empty pipes and structures. The surfaces disinfected shall remain in contact with the strong chlorine solution for at least 30 minutes.
 5. The Contractor must use an approved test method to determine chlorine levels. Test strips and test kits will be allowed for testing chlorine levels if the kit is new, in the original bottle, is not past the expiration date, and has a color coded scale on the side with legible concentrations defined. Sending samples to an approved laboratory is also acceptable.

C. FINAL FLUSHING (As per ANSI/AWWA C655-(latest revision))

1. After the applicable retention period, the heavily chlorinated water shall be flushed from the main until the chlorine concentrated in the water leaving the main is no higher than that generally prevailing in the system, or less than 1 between 0.5 and 1.2 ppm (*mg/l*). Chlorine residual determination shall be made at each bacteriological water sampling location, including the end of the main, to ascertain that the heavily chlorinated water has been removed from the pipeline.
2. Superchlorinated water shall be emptied into a tank truck, or similar containment device, and neutralized using a reducing agent (such as Sodium Thiosulfate) prior to being discharged in a manner that will not adversely affect flora and fauna, and shall conform to applicable state regulations for waste discharge as found in ANSI/AWWA C655-(latest revision) and NYSCRR Title 6, Chapter X, parts 700 - 705 (Water Quality Regulations).
3. Discharge of water into a storm or sanitary sewer system will require prior written approval from the municipality or owner/operator of the utility.

4. Water from flushing procedures shall not be discharged into a public roadway and shall not cause damage to any public or private property.

PART 4 BACTERIOLOGICAL TESTING

4.1 PROCEDURE

A. Sampling:

1. After completion of final flushing, before the new water main is connected to the distribution system, and in the presence of the Engineer, two (2) sets of bacteriological water samples shall be collected from an acceptable outlet(s) of the treated piping system (one immediately after final flushing and a second one after a minimum of 16 hours).
2. **OR** as follows: Option A – collect one set of samples immediately after final flushing and a second set after a minimum of 16 hours or, Option B – let the new main sit for a minimum of 16 hours without any water usage then, without flushing the main, collect the first set of samples then, a minimum of 15 minutes later, collect a second set of samples while all sampling taps are left flowing.
3. Other than the amount of water required to collect samples at each location, all water must be retained in the new main after final flushing until after the final set of bacteriological samples is collected. No additional flushing will be allowed during the sampling procedure.
4. If additional flushing is required to reduce chlorine residual, bacteriological sampling must cease and not resume until flushing operations have stopped and chlorine residual has reached acceptable levels.

B. Testing and Analysis:

1. All water samples shall be tested to show the presence of a free chlorine residual and the absence of coliform organisms in accordance with the latest Health Department requirements. A standard heterotrophic plate count or test for HPC bacteria will also be required for each water sample. In accordance with Part V of the New York State Sanitary Code, Table 11, a water sample with an HPC result greater than 500 colonies per milliliter is considered to be lacking a measurable free chlorine residual. Therefore, a sample with an HPC of greater than 500 colonies per milliliter is considered unfit for human consumption and will not be accepted. If, at this time, the samples show unsatisfactory results, the chlorine treatment shall be repeated until all samples show safe results.
2. Bacteriological testing and analysis must be performed at a laboratory approved by the Health Department and the Owner (ELAP certified) and shall be paid for by the Contractor. Samples must be picked up by laboratory personnel and delivered to the laboratory. The certified bacteriological test results must be delivered to the Owner and/or Engineer immediately upon completion.
3. Bacteriological test results shall expire 30 calendar days after the samples are taken. After 30 calendar days, if the new main has not been placed into service, the Contractor will be required to repeat the process, taking two sets of samples and submitting the results to the Engineer for review.
4. Per AWWA C651 standards, the maximum length of new pipe that can be installed without bacteriological sampling is 20 lineal feet unless otherwise approved by the Owner, Engineer, and the Health Department having jurisdiction.

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C. Sampling Locations:

1. The number of bacteriological water samples taken along the full length of pipeline shall be as determined by the Engineer and shall be acceptable to the Health Department having jurisdiction.
2. As a minimum, bacteriological water samples shall be taken as follows:
 - a. At a maximum of every 1,200 feet along the new water main
 - b. At every branch off of the new water main greater than one pipe length
 - c. Within 10 feet of each end of each section of water main
 - d. Fire hydrants and hoses are not considered acceptable sampling ports
3. The Contractor shall, at his expense, provide all necessary taps (wet or dry), outlets, fittings, piping, apparatus, labor, materials, equipment, water, etc. required.

END OF SECTION

SECTION 330561 - CONCRETE MANHOLES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Precast concrete sanitary sewer manholes.
- B. Cast-in-place concrete base pad.
- C. Polymer concrete manhole inserts.
- D. Grade adjustments.
- E. Frames and covers.

1.2 RELATED REQUIREMENTS

- A. Section 033000 - Cast-in-Place Concrete.
- B. Section 040511 - Masonry Mortaring and Grouting.
- C. Section 312316 - Excavation.
- D. Section 312323 - Fill.
- E. Section 333113 - Site Sanitary Sewerage Gravity Piping.

1.3 PRICE AND PAYMENT PROCEDURES

- A. Unit Prices: Concrete Manholes
 - 1. See Section 012200 - Unit Prices, for additional unit price requirements.
 - 2. Basis of Measurement: By the unit for a nominal depth of 8.0 feet.
 - 3. By the vertical linear foot (VLF) greater than 8.0 foot depth.
 - 4. Basis of Payment: Includes excavation, hand trimming, bedding and backfilling, base pad, frame and grate, accessories.

1.4 REFERENCE STANDARDS

- A. ASTM A48/A48M - Standard Specification for Gray Iron Castings; 2022.
- B. ASTM A536 - Standard Specification for Ductile Iron Castings; 1984, with Editorial Revision (2019).
- C. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2024.
- D. ASTM C150/C150M - Standard Specification for Portland Cement; 2022.

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- E. ASTM C478/C478M - Standard Specification for Circular Precast Reinforced Concrete Manhole Sections; 2020.
- F. ASTM C913 - Standard Specification for Precast Concrete Water and Wastewater Structures; 2021.
- G. ASTM C923/C923M - Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals; 2020.
- H. ASTM C990 - Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants; 2009 (Reapproved 2019).

1.5 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Installation of concrete manholes with piping and other structures.
 - 1. See Section 333113 for site sanitary sewerage gravity piping.

1.6 SUBMITTALS

- A. See Section 013300 - Submittal Procedures, for submittal procedures.
- B. Product Data: Provide manhole covers, component construction, features, configuration, and dimensions.
- C. Shop Drawings: Indicate manhole locations, elevations, piping sizes and elevations of penetrations.
- D. Manufacturer's Installation Instructions: Indicate special procedures for assembly.
- E. Manufacturer's qualification statement.
- F. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- G. Project Record Documents:
 - 1. Record invert elevations of concrete manholes.

1.7 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

PART 2 PRODUCTS

2.1 CONCRETE MANHOLES

- A. Precast Concrete Sanitary Sewer Manholes: Comply with ASTM C478/C478M, reinforced , reinforced , reinforced.
 - 1. Manufacturers
 - a. Kistner Concrete Products

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- b. Lakelands Concrete Products
- c. or approved equal
- 2. Joints shall consist of a rubber gasket conforming to ASTM C443 positioned firmly on a step or snapped into a groove in an accurately sized and shaped spigot ring. The rubber gasket shall be compressed between the spigot and bell rings when the manhole sections are assembled and the entire joint shall then be mortared all around.
- 3. Mechanical pipe-to-wall seals, (rubber boot, rubber ring/wedge, "Link-seal", "Innerlynx") are required. Comply with ASTM C923/C923M.
 - a. Manufacturers:
 - 1) Advance Products & Systems, Inc.
 - 2) or approved equal

2.2 MANHOLE, STRUCTURE, AND CHAMBER CASTINGS

- A. Frame and Cover castings shall be manufactured of: close-grained gray iron Class 30B or 35B conforming to the requirements of ASTM A48/A48M; or ductile iron conforming to the requirements of ASTM A536, Grade 60-40-18.
- B. Frame & Cover castings shall conform to HS-20 traffic loading requirements.
- C. All castings shall be true to pattern in form and dimensions, free from faults, sponginess, cracks, blowholes and other defects affecting their strength.
- D. Cover and seating rings shall be machined to insure even uniform bearing all around.
- E. Covers shall have 4 vent holes $\frac{3}{4}$ " diameter and the words "SANITARY SEWER" or ["_____ SANITARY SEWER"] cast in top side unless otherwise noted.
- F. Locking devices may be required on manhole covers only as identified and detailed on the drawings or as determined in the field by the Engineer.
- G. Watertight frames and covers may be required only as identified and detailed on the drawings or as determined in the field by the Engineer. Covers shall be solid with non-penetrating pickholes, and shall be lettered to match standard manhole covers.
- H. Finish Coating
 - 1. One coat of high-grade bituminous asphalt paint, manufacturer applied by immersion while hot, on all castings except where field painting is indicated.

2.3 MANHOLE COVER INSERTS

- 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. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings Insert manufacturer's name; product name or designation or comparable product by one of the following:
 - a. FRW Industries; a Syneco Systems, Inc. company.
 - b. Knutson Enterprises.
 - c. L.F. Manufacturing, Inc.

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- d. Parson Environmental Products, Inc.
- e. Sealing Systems, Inc. (S.S.I.)
- f. or approved equal
- 2. Description: Manufactured, plastic form, of size to fit between manhole frame and cover and designed to prevent stormwater and debris inflow.
 - a. Include handle for removal.
 - b. Include gasket for gastight sealing.
- 3. Type: Solid, with no drainage

2.4 PRECAST CONCRETE STRUCTURES & CHAMBERS

- A. The Contractor shall provide all materials, labor, equipment, supervision and incidentals required to furnish and install the concrete structures shown on the Drawings and specified herein.
- B. The Contractor shall coordinate installation of structures with installation of adjacent pipe, valves and items that must be installed in the concrete in a manner acceptable to the Engineer.
- C. Depth, width and length shall be as shown on the drawings.
- D. Chambers, frames & covers, and hatches shall be designed for HS-20 loads and any additional indicated loads.
- E. All precast structures shall conform to the requirements of ASTM C913 Standard Specification for Precast Concrete Water and Wastewater Structures, and Section 033000 - Cast-in-Place Concrete.
- F. The Contractor shall submit a detailed drawing, indicating the design load of structures, signed and sealed by a licensed professional Engineer.
- G. Joint Sealant: Comply with ASTM C990.
- H. Resilient Connectors: Comply with ASTM C923/C923M.
- I. Cast-In-Place Concrete Base Pads: Comply with ASTM C94/C94M, reinforced.
 - 1. Thickness: as noted on the drawings.
- J. Cast-In-Place Concrete Materials: See Section 033000.
- K. Grade Adjustments:
 - 1. Adjustment Ring: Concrete, 6 inches (152 mm) wide, diameter matching frame dimensions, in accordance with ASTM C478/C478M.
 - a. Manufacturers:
 - 1) Kistner Concrete Products.
 - 2) Lakelands Concrete Products.
 - 3) or approved equal.

2.5 FRAME AND COVER: CAST IRON CONSTRUCTION, ASTM A48/A48M CLASS 30B, OR 35B, MACHINED FLAT BEARING SURFACE; HINGED; SEALING GASKET.

- A. Manufacturers:
 - 1. EJ; Manhole Cover: www.ejco.com/#sle.
 - 2. _____.
 - 3. Substitutions: See Section 016000 - Product Requirements.

2.6 ACCESSORIES

- A. Steps: Formed aluminum; copolymer polypropylene with 1/2" diameter grade 60 steel reinforcement. Formed integral with manhole sections.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify items provided by other sections of work are properly sized and located.
 - 1. Verify that built-in items are in proper location, and ready for roughing into Work.
- B. Verify excavation for manholes is correct.

3.2 PREPARATION

- A. Coordinate placement of inlet and outlet pipe or duct sleeves required by other sections.

3.3 EXCAVATION AND FILL

- A. Hand trim excavation for accurate placement to indicated elevations.
- B. Backfill with cover fill, tamp in place and compact, then complete backfilling.
- C. See Section 312316 for additional excavation requirements.
- D. See Section 312323 for additional fill requirements.

3.4 INSTALLATION

- A. Establish elevations and pipe inverts for inlets and outlets as indicated in drawings.
- B. Precast Concrete Manholes:
 - 1. Place base section plumb and level.
 - 2. Install rubber "O-ring" gasket, self-lubricating rubber gasket, or joint sealant uniformly around section joint lip.
 - 3. Overlay additional sections on rubber "O-ring" gasket, self-lubricating rubber gasket, or joint sealant.

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4. Install cone, flat top, or lid section plumb and level on rubber "O-ring" gasket, self-lubricating rubber gasket, or joint sealant.
- C. Cast-In-Place Concrete Base Pad:
 1. Form base pad according to Section 033000.
 2. Place concrete according to Section 033000.
- D. Grade Adjustments:
 1. Lay concrete ring on mortar bed, plumb and level. Top with mortar, plumb and level.
 2. Place adjacent materials tight, and smooth following design grades.
- E. Frames and Covers:
 1. Place frame plumb and level.
 2. Mount frame on mortar bed at indicated elevation.

PART 4 TESTING

4.1 TESTING

- A. Test No.'s 4A & 4B - Testing of Manholes
 1. Manholes cannot be properly air tested. Therefore they should be visually inspected and leakage tested using either internal/external hydrostatic pressure or vacuum.
- B. Test No. 4A - Infiltration/Exfiltration Testing of Manholes, minimum two (2) hours.
 1. Infiltration testing shall be performed on all manholes in which the groundwater is at least two feet above the highest joint in the manhole being tested.
 2. Infiltration observations will be made by the Owner or Owner's Representative at any time prior to the end of the guarantee period. Measured infiltration shall not exceed the maximum allowable infiltration rate for manholes. The maximum allowable infiltration rate for manholes will be 100 gallons per inch of inside diameter per mile of manhole depth per 24 hours. The Contractor shall, at his own expense, locate and repair any and/or all leaks in the manholes.
 3. Exfiltration testing shall be performed on all manholes in which the groundwater level is less than two feet above the highest joint in the manhole.
 4. For the manhole exfiltration test, the test head must be established at least two feet above the highest joint in the manhole or two feet above the groundwater level, whichever is higher. The manhole to be tested shall be filled with water at least twenty-four hours prior to testing. Plugs shall be inserted in each pipe entering and leaving the manhole and properly secured to avoid displacement. The exfiltration test shall be conducted for a minimum of two hours with a maximum allowable leakage not to exceed 100 gallons per inch of inside manhole diameter per mile of manhole depth per 24 hours. The drop in water elevation shall be accurately measured to calculate the actual leakage.
 5. All manholes which exceed the allowable leakage rates specified above shall be repaired and retested at no expense to the Owner until such time that the actual measured leakage is less than the calculated allowable leakage.
- C. Test No. 4B - Vacuum Testing of Manholes

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1. The time required for a vacuum test shall be what it takes for 10-inch of mercury to drop 9-inch, as per the following table:

Manhole Depth	Diameter	Time to Drop 1' Hg.
10 ft. or less	4	60 seconds
10 ft to 15 ft.	4	75 seconds
15 ft. to 25 ft.	4	90 seconds

2. For a manhole of five ft. in diameter add an additional 15 seconds and for six ft. diameter add an additional 30 seconds to the time required for a four foot diameter manhole.
3. This type of test is only applicable to precast concrete manholes. All lifting holes and exterior joints shall be filled and pointed with non-shrinking mortar.
4. The manhole shall be tested immediately after assembly and prior to backfilling and the excavated area shall be free of standing water.
5. All pipes and other openings into the manhole shall be suitably plugged and in such a manner as to prevent movement while the vacuum is drawn.
6. Installation and operation of vacuum equipment and indicating devices shall be in accordance with the manufacturer's recommendations.
7. If the manhole fails the test the Contractor shall make the necessary repairs and retest until a satisfactory test is obtained.

4.2 EQUIPMENT FOR TESTING

4.3 WATER AND AIR FOR TESTING

- A. Water for performing all tests shall be furnished and disposed of by the Contractor, at his expense. If the water for filling and testing is obtained from an existing waterline a meter shall be installed to measure the quantity of water used for these purposes. No water shall be obtained from an existing waterline unless the Contractor first obtains the consent of the Owner or agency having jurisdiction over the existing main. Existing conditions may restrict the amount and rate of water that can be obtained from the existing line and the Contractor shall comply with the directions of the Owner or Agency of jurisdiction.
- B. When filling of the new line is achieved by accepting water from an existing waterline, the Contractor shall, as a minimum, furnish and install apparatus such as a double check valve assembly or a reduced pressure zone (RPZ) back flow preventer at the source of the supply to protect against the back flow of water from the new line into the existing line. Water for these purposes shall be metered.
- C. Air for Testing: The Contractor shall provide an air compressor, air hose, fittings, gauges and other equipment necessary to perform the required air test.

END OF SECTION

SECTION 331416 - SITE WATER UTILITY DISTRIBUTION PIPING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Water pipe and fittings for site conveyance lines.
- B. Water Services
- C. Pressure and Leakage Testing

1.2 RELATED REQUIREMENTS

- A. Section 330110.58 - Disinfection of Water Utility Piping Systems: Disinfection of site service utility water piping.

1.3 REFERENCE STANDARDS

- A. ASTM D3035 - Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter; 2022.
- B. ASTM D3139 - Standard Specification for Joints for Plastic Pressure Pipes using Flexible Elastomeric Seals; 2019.
- C. ASTM F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe; 2014 (Reapproved 2021).
- D. ASTM F1960 - Standard Specification for Cold Expansion Fittings with PEX Reinforcing Rings for Use with Cross-Linked Polyethylene (PEX) and Polyethylene of Raised Temperature (PE-RT) Tubing; 2023b.
- E. AWWA C600 - Installation of Ductile-Iron Mains and Their Appurtenances; 2023.
- F. AWWA C605 - Underground Installation of Polyvinyl Chloride (PVC) and Molecularly Oriented Polyvinyl Chloride (PVCO) Pressure Pipe and Fittings; 2021.
- G. AWWA C800 - Underground Service Line Valves and Fittings; 2021.
- H. AWWA C900 - Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 In. through 60 In. (100 mm through 1500 mm); 2022.
- I. AWWA C904 - Cross-Linked Polyethylene (PEX) Pressure Tubing, ½ In. (13 mm) Through 3 In. (76 mm), for Water Service; 2016.
- J. AWWA M23 - PVC Pipe—Design and Installation; 2020.

1.4 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on pipe materials, pipe fittings, valves and accessories.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- D. Project Record Documents: Record actual locations of piping mains, valves, connections, thrust restraints, and invert elevations. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with Owner requirements.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. All materials must be protected from damage, contamination, and discoloration during delivery, storage, and handling.
- B. All pipe shall be shipped from the manufacturer with paper or plastic shipping caps/plugs on both ends to prevent debris from entering the pipe during transport and storage on the project site. Shipping caps/plugs shall be removed prior to pipe installation.
- C. Materials shall be inspected by the Engineer prior to installation. Any materials determined to be damaged will not be accepted.
- D. Interiors of pipe and accessories shall be kept free of any dirt and foreign materials.
- E. All pipe, including that with polyethylene encasement applied prior to installation, shall be unloaded and handled with padded slings or other appropriate equipment to prevent damage to pipe walls, coatings, and encasements.

PART 2 PRODUCTS

2.1 WATER PIPE

- A. Substitutions: See Section 016000 - Product Requirements.
- B. PVC Pipe: AWWA C900, DR-18, Class 150, Pressure Class (PC) 235, color Blue.
 - 1. Manufacturers:
 - a. IPEX Inc.
 - b. J.M. Eagle Pipe
 - c. National Pipe and Plastics, Inc.
 - d. Underground Solutions, Inc.
 - e. approved equal
 - 2. Push Joints: ASTM D3139 and ASTM F477 compression gasket ring.

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- C. Crosslinked Polyethylene Tubing: AWWA C904.
 - 1. Fittings: AWWA C800, insert-stiffener type.
 - 2. Joints: Cold expansion fittings with PEX reinforcing rings, complying with ASTM F1960
- D. Marker Tape above : Magnetic detectable tape, color blue, three inches (3") wide, labeled "Caution: Potable Waterline Buried Below".
 - 1. Manufacturers:
 - a. Reef Industries, Inc.
 - b. C.H. Hanson Products
 - c. approved equal
 - d. Substitutions: See Section 016000 - Product Requirements.
- E. All pipes must be protected from contamination during transit.

2.2 BEDDING AND COVER MATERIALS

- A. Bedding: As specified in Section 312316.13 - Trenching.
- B. Cover: As specified in Section 312316.13 - Trenching.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that building service connection and municipal utility water main size, location, and invert are as indicated.

3.2 PREPARATION

- A. Cut pipe ends square, ream pipe and tube ends to full pipe diameter, remove burrs.
- B. Remove scale and dirt on inside and outside before assembly.
- C. Prepare pipe connections to equipment with flanges or unions.

3.3 TRENCHING

- A. See the applicable Division 31 sections for additional requirements.
- B. Hand trim excavation for accurate placement of pipe to elevations indicated.
- C. Form and place concrete for pipe thrust restraints at each change of pipe direction, if required. Place concrete to permit full access to pipe and pipe accessories. Refer to details on drawings for thrust restraint sizing.
- D. Backfill around sides and to top of pipe with cover fill, tamp in place and compact, then complete backfilling.

3.4 INSTALLATION - PIPE

- A. Maintain separation of water main from sewer piping in accordance with Department of Health code and "Recommended Standards for Waterworks".
- B. Establish elevations of buried piping to ensure not less than 4.0 feet of cover.
- C. Install polyvinylchloride (PVC) piping to AWWA M23 and AWWA C900.
- D. Install crosslinked polyethylene tubing and fittings to AWWA C904.
- E. Route pipe in straight line.
- F. PVC waterpipe shall not be deflected when changes in directions are required, mechanical joint fittings shall be used for this purpose.
- G. Install pipe to allow for expansion and contraction without stressing pipe or joints.
- H. Install access fittings to permit disinfection of water system performed under Section 330110.58.
- I. Install magnetic detectable marker tape above all PVC, PE, and PCCP water pipe installed by open cut directly above the pipe for the full length of the pipe and approximately 18 inches below the ground surface.
- J. Install pipe stands or concrete support piers as shown on the plans or as necessary to properly support exposed piping and valves but not interfere with maintenance and/or removal of the valves.

3.5 SERVICE CONNECTIONS

- A. Provide water service connections from the water main to the approximate highway boundary, back line of the permanent easement, or as required.

3.6 FIELD QUALITY CONTROL

- A. See Section 014000 - Quality Requirements, for additional requirements.
- B. Perform field inspection and testing in accordance with Section 014000.
- C. Clean interior of water pipeline of dirt and other superfluous material as work progresses and in accordance with Section 330110.54.
- D. Place plugs in the end of uncompleted pipeline at the end of each day or whenever work stops to prevent entry of animals, liquids, and entrance or insertion of deleterious materials into the pipe.

PART 4 PRESSURE & LEAKAGE TESTING

4.1 PROCEDURES AND EQUIPMENT

- A. Perform pressure and leakage testing in accordance with AWWA C600 for D.I.P.; AWWA C605 for PVC; AWWA C901 and AWWA C906 for PE; and AWWA M9 for PCCP.
- B. Prior to performing any work as described in this part, the Contractor shall submit to the Engineer for approval a flushing, testing and/or disinfection procedure. The procedure shall include when the work will be performed, source points for water, flush points for water, length and location of waterline to be included, and de-chlorination procedures.
- C. All testing equipment and materials required to perform all tests shall be provided by the Contractor and demonstrated as functional and accurate to the Engineer. Test equipment shall include, but not be limited to, pressure gauges, water meters, and backflow preventers (Reduced Pressure Zone (RPZ) attachments). Non-functional or inaccurate equipment, regardless of test results, will be grounds for test failure. If necessary, Contractor shall provide proper equipment and retest.
- D. If required, the Contractor shall submit documentation to the Engineer that all testing equipment has been satisfactorily tested, calibrated, and certified within one year of the date being used. Devices without proper certification may be considered inaccurate and/or defective and will not be allowed for use or for official testing documentation.
- E. Water Pressure Gauges: minimum 2½" diameter dial; minimum range of 0 to 200 psi; and markings at no greater than 2 psi increments to allow accurate readings.
- F. The Engineer is responsible for reading and recording gauge pressures and reserves the right to tap the pressure gauge at each reading to ensure that the needle is measuring pressure accurately.

4.2 PRELIMINARY FLUSHING

- A. Each valved system of the newly installed piping system shall be flushed separately with potable water from the public supply.
- B. Water from flushing procedures shall not be discharged into a public roadway and shall not cause damage to any public or private property.
- C. When filling of the new line for flushing is achieved by accepting water from an existing water line, the Contractor shall, as a minimum, maintain an open outlet on the new work at all times so that the connection between the existing water line and the new work is open. After initial filling/flushing, the Contractor shall, as a minimum, furnish and install a reduced pressure zone (RPZ) backflow preventer at the source of the supply to protect against the backflow of water from the new line into the existing line. When water is obtained from existing waterlines for these purposes, the water shall be metered.

4.3 HYDROSTATIC TESTING

- A. Perform hydrostatic testing of completed conduit lines in accordance with the following:
1. Test No. 1 - Pressure Test:
 - a. Assumptions:
 - 1) AWWA requirement of hydrostatic test pressure to be based on the elevation of the lowest point in the line or section under test corrected to the elevation of the test gauge.
 - 2) Test pressure shall be minimum of 150 psi for DIP, PVC and PE up to 12-inch diameter.
 - b. The maximum length of pipeline to be tested at any one time shall not exceed 6,000 lineal feet or valve to valve, whichever is less.
 2. Test No. 2 - Leakage Test:
 - a. The hydrostatic pressure shall be the same as determined for Test No. 1 Pressure Test.
 - b. The leakage test may be conducted concurrently with the pressure test.
 - c. The maximum length of pipeline to be tested at any one time shall not exceed 6,000 lineal feet or valve to valve, whichever is less.
 - d. The leakage under the conditions of the test for water pipe shall be determined by the following:
 - 1) For Ductile Iron and push joint PVC pipe: according to AWWA C600 and AWWA C605 and the following formula: $L=NDP/K$.
 3. When making repairs, connections of the approved water main to the existing system, or when specified or determined in the field by the Engineer, all joints, fittings, and portions of pipe lines not able to be tested by conventional methods as specified herein, shall be left exposed and shall be carefully examined for visible leakage while under existing water system line pressure. Those portions of the pipeline covered by backfill shall be observed for leakage appearing on the ground surface. Any leaks discovered in the joints shall be corrected until tight. Any cracked or defective pipe, fittings, etc., discovered in consequence of this pressure test shall be removed and replaced by the Contractor with new material as previously specified and the test repeated until satisfactory to the Engineer.

4.4 TESTING DURATION

- A. The duration of the pressure test (Test No. 1) shall be a minimum of:
1. Four (4) hours for fusible PVC and PE pipe
- B. The duration of the leakage test (Test No. 2) shall be a minimum of:
1. Four (4) hours for fusible PVC and PE pipe
- C. The pressure test may be conducted concurrently with the leakage test.
- D. Pressure should not fluctuate by more than 5 psi during testing.

4.5 TESTING PROCEDURE

- A. The pipe shall be slowly filled with water and the specified test pressure, measured at the point of lowest elevation, shall be applied by means of a pump connected to the pipe in a satisfactory manner. The pump, pipe connections, all necessary apparatus, taps into the pipe, gauges, and measuring devices, will be furnished by the Contractor. All work shall be accomplished by the Contractor.
- B. When initial filling/flushing of the new line is achieved by accepting water from an existing water line, the Contractor shall, as a minimum, maintain an open outlet on the new work at all times so that the connection between the existing water line and the new work is open. After initial filling/flushing, the Contractor shall, as a minimum, furnish and install a reduced pressure zone (RPZ) backflow preventer at the source of supply to protect against the backflow of water from the new line into the existing line. When water is obtained from existing waterlines for these purposes, the water shall be metered.
- C. Testing shall be done as soon as practical after the main line and services are installed, after initial flushing, but prior to pigging, disinfection and secondary/final main line connections.

4.6 EXPELLING AIR

- A. Before applying the specified test pressure, all air shall be expelled from the pipe.
- B. To accomplish this, taps shall be made, if necessary, at various locations and elevations in the test section including the points of highest elevation in the test section.
- C. After satisfactory test results, the blow-off tubing and corporation stop shall be removed and replaced with a plug unless the tap will be used for an individual water service connection.

4.7 EXAMINATION UNDER PRESSURE (TEST NO. 1)

- A. All exposed pipes, joints and fittings which are exposed when the test is conducted, shall be carefully examined for visible leakage. Those portions of the pipeline covered by backfill shall be walked to observe leakage appearing on the ground surface. Any leaks discovered in the joints shall be corrected until tight. Any cracked or defective pipe, fittings, etc., discovered in consequence of this pressure test shall be removed and replaced by the Contractor with new material as previously specified and the test repeated until satisfactory to the Engineer.
- B. If the pressure drop is greater than 5 psi in 2 hours, or if the Engineer believes the line is suspect, the Contractor shall explore for the cause of the excessive leakage and after repairs have been made, the line shall be retested. This procedure shall be repeated until the pressure loss is less than the maximum allowable and the Engineer is satisfied.

4.8 PERMISSIBLE LEAKAGE (TEST NO. 2)

- A. Suitable means (acceptable to the Engineer) shall be provided by the Contractor for determining the quantity of water loss by leakage under the specified test pressure. No pipe installation will be acceptable until, or unless, this leakage is less than that specified in this Section, at the test

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pressure specified.

- B. Should any test of pipe laid disclose leakage greater than that specified in this section, the Contractor shall, at his own expense, locate and repair the defective joints or pipe until the leakage is within the specified allowable.

4.9 LEAKAGE DEFINED

- A. Leakage is defined as the quantity of water to be supplied into the newly laid pipe necessary to maintain the specified leakage test pressure after the pipe has been filled with water and the air expelled.
- B. At the end of each test, the pressure shall be increased to the starting pressure so leakage test data may be acquired.

4.10 WATER FOR TESTING

- A. Water for performing all tests shall be furnished and disposed of by the Contractor, at his expense. If the water for filling and testing is obtained from an existing municipal waterline a meter shall be installed to measure the quantity of water used for these purposes.
- B. No water shall be obtained from an existing water line unless the Contractor first obtains the consent of the Owner or agency having jurisdiction over the existing main. Existing conditions may restrict the amount and rate of water that can be obtained from the existing line and the Contractor shall comply with the directions of the Owner or agency of jurisdiction.
- C. When filling of the new line is achieved by accepting water from an existing water line, the Contractor shall, as a minimum, furnish and install a reduced pressure zone (RPZ) backflow preventer at the source of the supply to protect against the backflow of water from the new line into the existing line. When water is obtained from existing waterlines for these purposes, the water shall be metered.

END OF SECTION

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SECTION 334100 - SUBDRAINAGE

PART 1 GENERAL

1.1 REFERENCE STANDARDS

- A. ASTM D2729 - Standard Specification for Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings; 2021.

PART 2 PRODUCTS

2.1 PIPE MATERIALS

- A. Polyvinyl Chloride Pipe: ASTM D2729; plain end, 4 inch inside diameter; with required fittings.

PART 3 EXECUTION

END OF SECTION

SECTION 334211 - STORMWATER GRAVITY PIPING

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. Work Included
 - 1. Furnish all labor, material and equipment necessary to complete all site drainage as shown and specified.
- B. Stormwater pipe accessories.

1.2 RELATED REQUIREMENTS

- A. Section 013300 - Submittal Procedures: Submittal Procedures
- B. Section 312316 - Excavation: Excavating of trenches.
- C. Section 312323 - Fill: Bedding and backfilling.

1.3 REFERENCE STANDARDS

- A. AASHTO M 252 - Standard Specification for Corrugated Polyethylene Pipe, 75- to 250-mm (3- to 10-in.) Diameter; 2024.
- B. ASTM C443 - Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets; 2021.
- C. ASTM D3034 - Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings; 2023.

1.4 SUBMITTALS

- A. See Section 013300 - Submittal Procedures, for submittal procedures.
- B. Product Data: Provide data indicating pipe, pipe accessories.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- D. Manufacturer's Installation Instructions: Indicate special procedures required to install Products specified.

1.5 CODES AND REGULATIONS

- A. Conform with all State and local rules, regulations, and laws which pertain to storm drainage systems.

1.6 VERIFICATION

- A. Check inverts of all existing storm structures and/or pipes to which new storm lines are to be attached and notify the Engineer of any discrepancy before commencing work.

PART 2 PRODUCTS

2.1 PIPE ACCESSORIES

- A. Flared End Sections:
 - 1. Material shall be galvanized steel conforming to AASHTO M 218 (ASTM A929) minimum 16 gauge.
- B. Service Connections (Inserta Tee):
 - 1. Manufacturer: ADS. or approved equal
 - 2. Materials:
 - a. Rubber sleeve and gasket, ASTM C443 .
 - b. PVC, SDR 35, ASTM D3034 , Hub adaptor.

2.2 UNDERDRAINS

- A. Rigid Polyethylene (PE) Pipe:
 - 1. 6" diameter, dual wall, soil tight, integral bell, perforated, rigid, corrugated polyethylene (PE) pipe with necessary fittings as manufactured by Hancor, Inc., ADS, or equal. Pipe to conform to AASHTO M 252 or ASTM F2648.
- B. Filter Material:
 - 1. Filter material shall comply with all requirements of NYSDOT Standard Specifications for Item 605.0901 underdrain filter Type I.
- C. Filter Fabric:
 - 1. Filter fabric shall be Mirafi 140N, Carthage Mills FX-45HS, CONTECH C-40NW, Propex GeoTex 401, or equal.

PART 3 EXECUTION

3.1 TRENCHING

- A. See Section 312316 - Excavation and Section 312323 - Fill for additional requirements.
- B. Backfill around sides and to top of pipe with cover fill, tamp in place and compact, then complete backfilling.

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3.2 BEDDING

- A. Construct as detailed. Excavate bell hole by hand. Do not lay pipe in wet trench. Do not permit water in trench until joints are set.
- B. Install pipe, fittings, and accessories in accordance with manufacturer's instructions. Seal watertight.
 - 1. Plastic Pipe: Also comply with ASTM D2321.

3.3 INSTALLATION - UNDERDRAINS

- A. Lay pipe true to line and grade on a 4" minimum bed of compacted filter material and backfill with filter material to subgrade in maximum of 6" lifts prior to compaction. Compaction shall be accomplished by two passes of an approved vibrating pad or drum type compactor. No compaction control tests will be required. Perforated underdrain pipe shall be placed holes down.

3.4 PROTECTION

- A. Protect pipe and bedding cover from damage or displacement until backfilling operation is in progress.

END OF SECTION

SECTION 334230 - STORMWATER DRAINS

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. Work Included
 - 1. Furnish all labor, material and equipment necessary to complete all site drainage as shown and specified.
- B. Frames and grates.

1.2 RELATED REQUIREMENTS

- A. Section 013000 - Administrative Requirements.
- B. Section 033000 - Cast-in-Place Concrete.
- C. Section 312316 - Excavation
- D. Section 312323 - Fill

1.3 REFERENCE STANDARDS

- A. AASHTO M 294 - Standard Specification for Corrugated Polyethylene Pipe, 300- to 1500-mm (12- to 60-in.) Diameter; 2021.
- B. ASTM C32 - Standard Specification for Sewer and Manhole Brick (Made From Clay or Shale); 2013 (Reapproved 2017).
- C. ASTM C62 - Standard Specification for Building Brick (Solid Masonry Units Made from Clay or Shale); 2023.
- D. ASTM C91/C91M - Standard Specification for Masonry Cement; 2023.
- E. ASTM C139 - Standard Specification for Concrete Masonry Units for Construction of Catch Basins and Manholes; 2017.
- F. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar; 2018.
- G. ASTM C150/C150M - Standard Specification for Portland Cement; 2022.
- H. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes; 2018.
- I. ASTM C270 - Standard Specification for Mortar for Unit Masonry; 2019a, with Editorial Revision.
- J. ASTM C478/C478M - Standard Specification for Circular Precast Reinforced Concrete Manhole Sections; 2020.

1.4 SUBMITTALS

- A. See Section 013300 - Submittal Procedures, for submittal procedures.
- B. Submissions - Certifications
 - 1. Shop Drawings
 - a. Precast concrete drainage structures.
 - b. Drainage structure castings.
 - 2. Manufacturer's Literature
 - a. For all standard manufactured products.
 - 3. Certification
 - a. For all materials specified to comply with reference materials, submit Certificate of Compliance.

1.5 CODES AND REGULATIONS

- A. Conform with all state and local rules, regulations and laws which pertain to storm drainage systems.

1.6 VERIFICATION

- A. Check inverts of all existing storm structures and/or pipes to which new storm lines are to be attached and notify Engineer of any discrepancy before commencing work.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Concrete
 - 1. As specified in Section 033000 - Cast-in-Place Concrete. Minimum compressive strength 3000 psi at 28 days.
- B. Reinforcing
 - 1. As specified in Section 033000 - Cast-in-Place Concrete.
- C. Masonry
 - 1. Manhole Brick - conform to ASTM C32, Grade MS.
 - 2. Concrete Block - conform to ASTM C139.
 - 3. Building (Common) Brick - conform to ASTM C62, Grade SW.
 - 4. Precast Concrete Pavers - conform to NYSDOT Standard Specification No. 704-13.
- D. Mortar Materials
 - 1. Cement - Portland Cement, standard American brand, ASTM C150/C150M, Type 1.
 - 2. Masonry Cement - comply with ASTM C91/C91M .
 - 3. Lime- hydrated lime ASTM C207, Type S.
 - 4. Sand - conform to ASTM C144 .

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- E. Mortar - To Comply with ASTM C270 for Type M Mortar
 - 1. 1 part cement, 1/4 part lime, and 3 parts sand, or:
 - 2. 1 part cement, 1 part masonry cement, and 5 parts sand (Contractor's option).
- F. Precast Concrete Manholes and Catch Basins
 - 1. Units shall be manufactured in accordance with ASTM C478/C478M, Specifications for Precast Reinforced Concrete Manhole Risers and Tops.
 - 2. Joints between units shall be made using flexible water-tight rubber gaskets, Portland Cement mortar or approved jointing compound, at Contractor's option and meet local regulations.
 - 3. Pipe penetrations shall be sealed with flexible water-tight boots and/or non-shrink grout material consisting of Portland Cement mortar or other approved compound as noted on the drawings.
 - 4. Include steps consisting of copolymer polypropylene plastic with 1/2" dia. grade 60 steel reinforcement, and traps where indicated, at all required access openings.
 - 5. Manufacturer's - Kistner Concrete Products, Lakelands Concrete Products, or equal.
- G. Drainage Structure Castings
 - 1. Manufacturers:
 - a. Catalog numbers specified on Drawings are generally those of East Jordan Iron Works/Syracuse Castings unless otherwise indicated.
 - b. Equivalent units by Neenah Foundry Company or equal will be accepted.
 - 2. Material:
 - a. Gray iron castings, ASTM A 48-76 Class 30B.
 - 3. Finish Coating:
 - a. One coat of high grade bituminous asphalt paint, Federal Spec. MIL-C-4508, on all castings except where field painting is indicated.
- H. Field Inlets
 - 1. Fabricated Tees
 - a. Diameter as indicated on plans or as determined in the field by the Engineer.
 - b. Tees must be fabricated from same material type as drainage pipe.
 - c. ADS, or equal, for AASHTO M 294 or ASTM F2648 material, e.g.:
 - 1) ADS #0836 ST for 8"x8"x6" Tee, or equal,
 - 2) ADS #0862 ST for 8"x8"x8" Tee, or equal, etc.
 - 2. Slotted Grade
 - a. Round structural foam polyethylene grate with U.V. inhibitors.
 - b. NDS or equal.

PART 3 EXECUTION

3.1 DRAINAGE STRUCTURES

- A. Manholes and Catch Basins
 - 1. Construct precast structures as detailed on the drawings.

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2. Connections between structures and pipes shall be made by completely filling the space around each pipe (between pipe and structure) with NYSDOT approved concrete grouting material or concrete repair material.
 - a. In the case of large specs around pipes, cast-in-place concrete (4000 psi) shall be used.
3. Rim adjustments are to be made with cast-in-place concrete or precast concrete adjustment elements manufactured in accordance with NYSDOT standards.
 - a. A maximum 1 1/2" thickness of nonmetallic, shrinkage-resistant grout (Five Star Grout or approved equal) shall be allowed and mixed per manufacturer recommendations.

END OF SECTION