PROJECT MANUAL

VILLAGE OF TANNERSVILLE
GOOSEBERRY CREEK REVITALIZATION STRATEGY
IMPLEMENTATION PHASE II
RIP VAN WINKLE LAKE PARK
GREENE COUNTY, NEW YORK

JUNE 1, 2023

CONTRACT FOR GENERAL CONSTRUCTION

OWNER:

VILLAGE OF TANNERSVILLE
1 PARK LANE
PO BOX 967
TANNERSVILLE, NEW YORK 12485

LANDSCAPE ARCHITECT AND ENGINEER:

STUDIO A LANDSCAPE ARCHITECTURE AND ENGINEERING, D.P.C.
38 HIGH ROCK AVENUE, SUITE. 3
P.O. BOX 272
SARATOGA SPRINGS, NY 12866

DOS PROJECT NO: C1001671

NEW YORK STATE OF OPPORTUNITY. Department of State

This project uses funding provided by the
New York State Department of State under
Title 11 of the Environmental Protection Fund.

JUNE 1, 2023

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

DOCUMENT 000101 – PROJECT TITLE PAGE

VILLAGE OF TANNERSVILLE
GOOSEBERRY CREEK REVITALIZATION STRATEGY
IMPLEMENTATION PHASE II
RIP VAN WINKLE LAKE PARK
DOS PROJECT No. C1001671

CONTRACT FOR GENERAL CONSTRUCTION

VILLAGE BOARD

DAVID SCHNEIDER, MAYOR

DAVID KASHMAN, DEPUTY MAYOR
JOHN GALLAGHER, TRUSTEE
DYLAN LEGG, TRUSTEE
KIMBERLY THOMPSON, TRUSTEE

ROBIN DUMONT – CLERK-COLLECTOR

WILLIAM SIMON, ESQ. – VILLAGE ATTORNEY

LANDSCAPE ARCHITECT AND ENGINEER

STUDIO A LANDSCAPE ARCHITECTURE AND ENGINEERING, D.P.C.
38 HIGH ROCK AVENUE, STE. 3
P.O. BOX 272
SARATOGA SPRINGS, NY 12866
TEL. (518) 450-4030

TABLE OF CONTENTS

TECHNICAL SPECIFICATIONS

DIVISION 02 - EXISTING CONDITIONS

024001 – PROJECT SIGN
024115 – TEMPORARY EROSION AND SEDIMENT CONTROL
024116 – SITE CLEARING

DIVISION 26 – ELECTRICAL

260010 – ELECTRICAL WORK GENERAL
260190 – SUPPORTING DEVICES
260195 – ELECTICIAL IDENTIFICATION
260519 – WIRE & CABLE (600V AND BELOW)
260526 – GROUNDING
260533 – CONDUIT
260540 – BOXES
260541 – UNDERGROUND ENCLOSURES
262400 – DUCTBANKS POWER DISTRIBUTION
262726 – WIRING DEVICES
265010 – LIGHTING

DIVISION 31 – EARTHWORK

312000 – EARTHMOVING

DIVISION 32 – EXTERIOR IMPROVEMENTS

321330 – CONCRETE WALKS, PAVILION PADS, AND FOOTINGS
321331 – CAST-IN-PLACE OR MACHINE FORMED CONCRETE CURBS
321340 – STONE DUST SURFACED WALKS AND OTHER AREAS
323301 – KAYAK/CANOE LAUNCH
323302 – FISHING PIER
323303 – FLAGPOLE
323304 – PARK SIGN ON STONE WALL AT DROP-OFF CIRCLE
323305 – TRAFFIC SIGNS
323306 – SURFACE SPRAY AERATOR
323307 – BIRD HOUSES
323308 – BICYCLE RACKS
323309 – PICNIC TABLES
323310 – BBQ GRILLS
323311 – GOTHIC ARCH PAVILION
323312 – PLAYGROUND EQUIPMENT AND PLAY AREA SURFACE
329300 – LANDSCAPING

DIVISION 33 – SITE UTILITIES

331001 – STORM UTILITY DRAINAGE PIPING AND STRUCTURES
331002 – RAIN GARDENS

DOCUMENT 000115 - LIST OF DRAWING SHEETS

PART 1 - GENERAL

1.1 LIST OF DRAWINGS

A. Drawings: Drawings consist of the Contract Drawings and other drawings listed on the Table of Contents page of the separately bound drawing set titled Gooseberry Creek Revitalization Strategy Implementation Phase II, dated May 2022, as modified by subsequent Addenda and Contract modifications.

B. List of Drawings: Drawings consist of the following Contract Drawings and other drawings of type indicated:

L - 0.00	COVER SHEET
L - 0.10	MASTER NOTES SHEET
L - 0.20	EXISTING CONDITIONS
L - 0.30	DEMOLITION, EROSION & SEDIMENT CONTROL PLAN
L - 1.10	LAYOUT & MATERIALS PLAN (1:40 SCALE)
L - 1.20	LAYOUT & MATERIALS ENLARGEMENT PLAN (1:20 SCALE)
L - 1.30	PLAY AREA LAYOUT, MATERIALS AND GRADING PATH (1:10 SCALE)
L - 2.10	GRADING & DRAINAGE PLAN (I:40 SCALE)
L - 2.20	GRADING & DRAINAGE ENLARGEMENT PLAN (1:20 SCALE)
L - 4.10	PLANTING PLAN (I:40 SCALE)
L - 4.20	PLANTING & LIGHTING ENLARGEMENT PLAN (1:20 SCALE)
L - 4.30	PLANTING ENLARGEMENT PLAN (1:10 SCALE)
L - 5.10	DEMOLITION, EROSION & SEDIMENT CONTROL DETAILS
L - 5.20	CONSTRUCTION DETAILS
L - 5.30	CONSTRUCTION DETAILS
L - 5.40	CONSTRUCTION DETAILS
A - 1.10	GOTHIC ARCH PAVILION FLOOR PLAN, ELEVATION, AND
E - 0.10	DETAILS ELECTRICAL LEGEND AND SCHEDULES
E - 1.10	ELECTRICAL SITE PLAN
E - 5.10	ELECTRICAL DETAILS

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF DOCUMENT 000115

DOCUMENT 001113 - ADVERTISEMENT FOR BIDS

PART 1 - GENERAL

1.1 PROJECT INFORMATION

A. Notice to Bidders: Qualified bidders may submit bids for project construction as described in this Document. Submit bids according to the Instructions to Bidders. (Document 002113)

B. Project Identification: Gooseberry Creek Revitalization Strategy Implementation Phase II, Rip Van Winkle Lake Park

1. Project Location: 33 Upper Lake Road, Tannersville, NY 12485

C. Owner:
Village of Tannersville
Village Hall
1 Park Lane
P.O. Box 967
Tannersville, NY 12485
David Schneider, Mayor
(518)-589-5850 Ext. 1

D. Landscape Architect and Engineer (The “Architect”):
Studio A Landscape Architecture and Engineering, D.P.C.
P.O. Box 272
38 High Rock Avenue, Suite 3
Saratoga Springs, NY 12866
Kirsten Catellier, RLA
(518)-450-4030
kcatellier@studioadpc.com

E. Project Description:

Contract For General Construction for Rip Van Winkle Lake Park: includes all labor, tools, and equipment to construct site improvements for the park. Site development includes general excavation and grading, gravel driveways and parking areas, concrete and crusher dust surfaced walks, low natural stone walls, picnic pavilion, playground equipment, kayak launch, fishing pier, flagpole, signage, site lighting and electric lines, stormwater management practices, site amenities, and landscaping.

All work on the entrance driveway, from South Main Street to a point approximately 470 feet south of South Main Street (As identified on the drawings as “not in project”) will be performed by others including milling of the bituminous pavement surface, re-paving, grading, landscaping and signage. The contractor for the “General Construction” work may, however, use the entrance driveway for access, staging, and

parking of equipment and worker vehicles. Installation of the stabilized construction entrance, project construction sign, and gated access into the site at the entrance from South Main Street is, however, included in the “General Construction” scope of work.

In addition, the installation of finished bituminous paving from the +/- 470-foot mark, including the remainder of the entrance driveway and circular turn-around/parking area, will be performed by others. Installation of the gravel base and concrete curbs in this area is, however, included in the “General Construction” scope of work.

All of the above “Work by Others” will be scheduled to be performed following completion of the “General Construction” scope of work.

Other work items may also be performed by others as identified in the drawings, as follows:

- Demolition of certain existing improvements will be performed by the Owner prior to the start of the “General Construction” scope of work. As identified on Drawing L – 0.30, Demolition Erosion and Sediment Control Plan.

F. Construction Contract: Bids will be received for the following Work:

1. General Contract (all trades).

1.2 BID SUBMITTAL AND OPENING

A. Owner will receive sealed lump sum bids until the bid time and date at the location given below. Owner will consider bids prepared in compliance with the Instructions to Bidders issued by Owner, and delivered as follows:

1. Bid Date: July 6, 2023
2. Bid Time: 11:00 a.m. local time.
3. Location: Village of Tannersville, Village Hall
   1 Park Lane
   Tannersville, NY 12485
   Attn: Robin Dumont, Village Clerk

B. Bids will be thereafter publicly opened and read aloud.

1.3 BID SECURITY

A. Bid security shall be submitted with each bid in the amount of five (5) percent of the bid amount. No bids may be withdrawn for a period of sixty (60) days after opening of bids. Owner reserves the right to reject any and all bids and to waive informalities and irregularities.

1.4 PREBID MEETING

A. Prebid Meeting: See Document 002513 "Prebid Meeting".

B. Prebid Meeting Date: A prebid meeting for all bidders will be held "virtually" on June 20, 2023 at 10:00 am local time. Prospective prime bidders are requested to attend, but attendance is not mandatory.

C. Bidders' Questions: Landscape Architect/Engineer will provide responses to bidders' questions from the Prebid conference within three days following Prebid meeting. All potential bidders will be copied responses.

1.5 DOCUMENTS

A. Online Procurement of Contracting Documents: Digital (PDF) copies of the bidding documents can be obtained from the Village of Tannersville, Village Hall, Village Clerk (the issuing office) on Monday through Friday between the hours of 9:00 AM and 4:00 PM, local time upon request.

B. Viewing Procurement and Contracting Documents: Printed Bidding Documents can be viewed at the locations below:

1. Village of Tannersville Village Hall
   1 Park Lane
   Tannersville, NY 12485
   Monday to Friday
   10:00 AM to 4:00 PM

And

2. Studio A Landscape Architecture and Engineering, D.P.C.
38 High Rock Avenue, Suite 3
Saratoga Springs, NY 12866
Monday to Friday
10:00 AM to 4:00 PM

C. Printed Procurement and Contracting Documents: Printed copies of the Bidding Documents may be obtained from the Village of Tannersville Village Hall, Village Clerk, (the issuing office) on Monday through Friday between the hours of 9:00 AM and 4:00 PM, local time. Bidding documents will be provided to prime bidders only. Only complete sets of documents will be issued. Neither owner or Landscape Architect/Engineer will be responsible for full or partial sets of bidding documents, including addenda if any, obtained from sources other than the issuing office.
1. Deposit: $100.00 made payable to the Village of Tannersville
2. Shipping: Additional shipping charges of $50.00 will apply per set for handling and delivery.
3. Return of Bidding Documents and Deposit: Bidders who return full sets of the Bidding Documents in good condition (suitable for re-use) within 30 days after receipt of Bids will receive a full refund. Non-Bidders, and Bidders who obtain more than one set of the Biding Documents, will receive a refund of $100.00 for documents returned in good condition within the time limit indicated above.

1.6 TIME OF COMPLETION AND LIQUIDATED DAMAGES

A. Successful bidder shall begin the Work on receipt of the Notice to Proceed. All work shall be substantially completed by May 17, 2024 and fully completed by May 24, 2024..

B. Liquidated damages shall be assessed at five hundred dollars ($500) per calendar day for all work not completed.

1.7 BIDDER'S QUALIFICATIONS

A. Bidders must be properly licensed under the laws governing their respective trades and be able to obtain insurance and bonds required for the work.

B. Bidders are required to include Document 004113.3 “Statement of Contractors Qualifications” with Bid.

1.8 NOTIFICATIONS TO BIDDERS

A. This Advertisement for Bids document is issued by the Village of Tannersville, David Schneider, Mayor.

B. Attention of Bidders is particularly called to the requirements as to prevailing wage rates to be paid under the contract, equal employment opportunity, Minority and Women-Owned Enterprises (MWBE) participation, and all other federal, New York State and local requirements.

C. All laborers, workers and mechanics working on the site of this project must be certified as having successfully completed the OSHA 10-hour construction safety and health course.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF DOCUMENT 001113

DOCUMENT 002113 - INSTRUCTIONS TO BIDDERS

PART 1 - GENERAL

1.1 INSTRUCTIONS TO BIDDERS

A. AIA Document A701, "Instructions to Bidders," is hereby incorporated into the Procurement and Contracting Requirements by reference.

1. A copy of AIA Document A701, "Instructions to Bidders," is bound in this Project Manual.

1.2 ADDITIONAL INSTRUCTIONS TO BIDDERS

A. CERTIFICATE OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT: In accordance with the requirements of General Municipal Law §103-g, the bidder is required to include with its bid either (1) the “Certification with the Iran Divestment Act” or, in the case where the bidder is unable to make such certification, (2) the form titles “Declaration of Bidder’s Inability to Provide Certification of Compliance with the Iran Divestment Act”. This form is included in Document 004113 – Bidding Documents, Document 004113.6 “Certificate of Compliance with the Iran Divestment Act”.

B. SALES AND COMPENSATING USE TAXES: The Owner is exempt from paying sales and compensating use taxes of the State of New York and of cities, counties, and other subdivisions of the State on all materials sold to it pursuant to the provisions of this Contract. These taxes are not to be included in bids. This exemption shall apply to supplies and materials which are incorporated in such project. This exemption does not, however, apply to equipment rentals, small tools, and supplies for equipment such as supplies of gasoline used in operating trucks. The term "materials" as used in this article shall include supplies incorporated in this project. A Tax Exemption Certificate will be furnished to the Contractor by the Owner upon request.

C. LAWS AND REGULATIONS: All applicable State Laws, municipal ordinances, and the rules, regulations and ordinances of all authorities having jurisdiction over construction of the project shall apply to the Contract throughout, and they will be deemed to be included in the Contract the same as though herein written out in full.

D. AFFIRMATIVE ACTION PROVISION: During the performance of this Contract, each Contractor agrees that he will not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, age, or disability. Such action shall include, but not be limited to the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoffs or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Each Contractor agrees to include or require the inclusion of the above provision in any subcontract made pursuant to its contract with the Owner.

E. WAGE RATE REQUIREMENTS

1. Minimum prevailing rate of wages, health and welfare and pension fund contributions are as determined by the Industrial Commissioner of the State of New York. In accordance with the provisions of Section 220 the Labor Law of New York State.

2. It shall be the sole responsibility of each Contractor to pay wages at least equal to current and future Wage Rate Schedules which are applicable to this project throughout the entire duration of the Contract without claiming extra costs.

3. Current Wage Rate Schedules can be found at https:applications.labor.ny.gov/wpp/piblicviewproject.do?method=showit&id=1372559

F. MINORITY AND WOMAN OWNED BUSINESS ENTERPRISES (MWBE) PARTICIPATION: The Contractor, in addition to any other nondiscrimination provision of the Contract and at no additional cost to the New York State Department of State (the "Agency"), shall comply and cooperate with the Agency in the implementation of New York State Executive Law. Article 15-A to the best of their ability and provide a statement of the respondent's effort to comply with the State's Minority and Women Owned Business Enterprise (MABE) goals. These requirements include equal employment opportunities for minority group members and women ("EEO") and contracting opportunities for certified minority and women-owned business enterprises ("MWBEs"). Contractor's demonstration of "good faith efforts" pursuant to 5 NYCRR §142.8 shall be a part of these requirements. These provisions shall be deemed supplementary to, and not in lieu of the nondiscrimination provisions required by New York State Executive Law Article 15 (the "Human Rights Law") or other applicable federal, state, or local laws.

The Agency has established an overall goal of 30% for Minority and Women-Owned Business Enterprises ("MWBE") participation, 15% for Minority-Owned Business Enterprises ("MBE") participation and 15% for Women-Owned Business Enterprises ("WBE") participation (based on the current availability of qualified MBEs and WBEs). For purposes of providing meaningful participation by MWBEs on the Contract and achieving the Contract Goals, Contractor should reference the directory of New York State Certified MBWEs found at the following internet address: http://www.newnycontracts.com/FrontEnd/searchcertifieddirectory.asp.

Additionally, the Contractor is encouraged to contact the Division of Minority and Woman Business Development (518) 292-5250; or (212) 803-2414 to discuss additional methods of maximizing participation by MWBEs on the Contract.

The portion of a contract with an MWBE serving as a supplier that shall be deemed to represent the commercially useful function performed by the MWBE shall be 60 percent of the total value of the supplier’s contract. The portion of a contract with an MWBE serving as a broker that shall be deemed to represent the commercially useful function performed by the MWBE shall be monetary value for fees, or the markup percentage, charged by the MWBE.

Contractor must document and provide to the Village upon request "good faith efforts" pursuant to 5 NYCRR §142.8 to provide meaningful participation by MWBEs as subcontractors or suppliers in the performance of the Contract. In accordance with Section 316-a of Article 15-A and 5 NYCRR §142.13, the Contractor acknowledges that if Contractor Is found to have willfully and intentionally failed to make good faith efforts to meet the established MWBE participation goals set forth in the Contract, such a finding constitutes a breach of contract and the Contractor shall be liable to the Agency for liquidated or other appropriate damages, as determined by the Agency.

Contractor and subcontractor will be required to certify payments in the New York State contract System. Contractor shall submit an MWBE Utilization Plan either prior to, or at the time of, the execution of the contract, which shall be used for the performance of MWBEs on the Contract pursuant to the prescribed MWBE goals. Failure to submit and/or use such MWBE Utilization Plan shall constitute a material breach of the terms of the Contract.

Contractor and subcontractors must notify the Owner within 10 days if their New York State MWBE certification has lapsed or changed.

G. CERTIFICATES OF LIABILITY INSURANCE:

Insurance Requirements: The Contractor shall purchase and maintain Insurance of the following types of coverage and limitations of liability and attach them with Document 006000.5 – Certificates of Insurance with the Contract, Document 006000.1- Agreement. The Village of Tannersville is to be named as an insured in all of the following documents.

1. Commercial General Liability (CGL) with limits of Insurance not less than $1,000,000 each occurrence, $1,000,000 Personal Injury and Advertising Injury, $2,000,000 Products/Completed and $2,000,000 Annual General Aggregate.

    a. General contractor/the owner and all entities required in the general construction contract shall be included as an additional insured on the CGL. This insurance for the additional Agreement insured shall be as broad as the coverage provided for the named insured contractor. It shall apply as Primary and Non-Contributing Insurance before any other insurance or self-insurance, including any deductible, maintained by, or provided to, the additional insured.

    b. Contractor shall maintain CGL coverage for Itself and all additional insureds for the duration of the project and maintain Completed Operations coverage for itself and each additional insured for at least 3 years after completion of the work.

2. Automobile Liability

    a. Business Auto Liability with limits of at least $1,000,000 each accident.

    b. Business Auto coverage must include a liability arising out of all owned, leased, hired and non-owned automobiles. Automobile coverage shall apply as Primary and Non-Contributing Insurance before any other insurance or

self-Insurance, including any deductible, maintained by, or provided to, the additional insured.

3. Commercial Umbrella

    a. Umbrella Limits be at least $1,000,000

    b. Umbrella coverage must include as insureds all entities that are additional insureds on the CGL
    c. Umbrella coverage for such additional insureds shall apply as primary and non-contributing before any other insurance or self-Insurance, including any deductible, maintained by, or provided to, the additional insured other than the GL, Auto Liability and Employers Liability coverages maintained by the Subcontractor.

4. Workman's Compensation and Employers Liability

    a. Employers Liability Insurance limits of at least $1,000,000 each accident for bodily injury by accident and $1,000,000 each employee for Injury by disease.

    b. Where applicable, U.S. Longshore and Harbor Workers Compensation Act Endorsement shall be attached to the policy.

5. Special Note
    a. The Village of Tannersville is to be named as an insured in all of the above documents.

PRODUCT DATA SHEET 2 -

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF DOCUMENT 002113

DRAFT

AIA® Document A701™ – 2018

Instructions to Bidders

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

« »
« »
« »

THE OWNER:

« »« » Village of Tannersville, New York
« » 1 Park Lane
« » P.O. Box 967
« » Tannersville, New York 12485
« » Attn: David Schneider, Mayor

THE ARCHITECT:
(

« »« » Studio A Landscape Architecture and Engineering, D.P.C.
« » 38 High Rock Avenue, Suite 3
« » P.O. Box 272« » Saratoga Springs, NY 12866
« » Attn: Kirsten Catellier, ASLA

TABLE OF ARTICLES

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

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

FEDERAL, STATE, AND LOCAL LAWS MAY IMPOSE REQUIREMENTS ON PUBLIC PROCUREMENT CONTRACTS. CONSULT LOCAL AUTHORITIES OR AN ATTORNEY TO VERIFY REQUIREMENTS APPLICABLE TO THIS PROCUREMENT BEFORE COMPLETING THIS FORM.

It is intended that AIA Document G612™–2017, Owner's Instructions to the Architect, Parts A and B will be completed prior to using this document.

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ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents include the Bidding Requirements and the Proposed Contract Documents. The Bidding Requirements consist of the advertisement or invitation to bid, Instructions to Bidders, the bid form, and any other bidding forms. The Proposed Contract Documents consist of the unexecuted form of Agreement between the Owner and Contractor and that Agreement's Exhibits, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, all Addenda, and all other documents enumerated in Article 8 of these Instructions.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, or in other Proposed Contract Documents apply to the Bidding Documents.

§ 1.3 Addenda are written or graphic instruments issued by the Architect, which, by additions, deletions, clarifications, or corrections, modify or interpret the Bidding Documents.

§ 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

§ 1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents, to which Work may be added or deleted by sums stated in Alternate Bids.

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from, or that does not change, the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

§ 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, as described in the Bidding Documents.

§ 1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents.

§ 1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment, or labor for a portion of the Work.

ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 By submitting a Bid, the Bidder represents that:

- **.1** the Bidder has read and understands the Bidding Documents;
- **.2** the Bidder understands how the Bidding Documents relate to other portions of the Project, if any, being bid concurrently or presently under construction;
- **.3** the Bid complies with the Bidding Documents;
- **.4** the Bidder has visited the site, become familiar with local conditions under which the Work is to be performed, and has correlated the Bidder's observations with the requirements of the Proposed Contract Documents;
- **.5** the Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception; and
- **.6** the Bidder has read and understands the provisions for liquidated damages, if any, set forth in the form of Agreement between the Owner and Contractor.

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 Distribution

§ 3.1.1 Bidders shall obtain complete Bidding Documents, as indicated below, from the issuing office designated in the advertisement or invitation to bid, for the deposit sum, as , stated In Section 001113, "Advertisement for Bids" in this project manual.

(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall obtain Bidding Documents.)

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§ 3.1.2 Any required deposit shall be refunded to Bidders who return the paper Bidding Documents in good condition In compliance with Section 001113, "advertisement for Bonds,"after receipt of Bids. A Bidder receiving a Contract award may retain the paper Bidding Documents, and the Bidder's deposit will be refunded.

§ 3.1.3 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the advertisement or invitation to bid, or in supplementary instructions to bidders.

§ 3.1.4 Bidders shall use complete Bidding Documents in preparing Bids. Neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete Bidding Documents.

§ 3.1.5 The Bidding Documents will be available for the sole purpose of obtaining Bids on the Work. No license or grant of use is conferred by distribution of the Bidding Documents.

§ 3.2 Modification or Interpretation of Bidding Documents

§ 3.2.1 The Bidder shall carefully study the Bidding Documents, shall examine the site and local conditions, and shall notify the Architect of errors, inconsistencies, or ambiguities discovered and request clarification or interpretation pursuant to Section 3.2.2.

§ 3.2.2 Requests for clarification or interpretation of the Bidding Documents shall be submitted by the Bidder in writing and shall be received by the Architect at least seven days prior to the date for receipt of Bids by email to kcatellier@studioadpc.com.
(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall submit requests for clarification and interpretation.)

« »

§ 3.2.3 Modifications and interpretations of the Bidding Documents shall be made by Addendum. Modifications and interpretations of the Bidding Documents made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3 Substitutions

§ 3.3.1 The materials, products, and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitution.

§ 3.3.2 Substitution Process

§ 3.3.2.1 Written requests for substitutions shall be received by the Architect at least ten days prior to the date for receipt of Bids. Requests shall be submitted in the same manner as that established for submitting clarifications and interpretations in Section 3.2.2.

§ 3.3.2.2 Bidders shall submit substitution requests on a Substitution Request Form if one is provided in the Bidding Documents.

§ 3.3.2.3 If a Substitution Request Form is not provided, requests shall include (1) the name of the material or equipment specified in the Bidding Documents; (2) the reason for the requested substitution; (3) a complete description of the proposed substitution including the name of the material or equipment proposed as the substitute, performance and test data, and relevant drawings; and (4) any other information necessary for an evaluation. The request shall include a statement setting forth changes in other materials, equipment, or other portions of the Work, including changes in the work of other contracts or the impact on any Project Certifications (such as LEED), that will result from incorporation of the proposed substitution.

§ 3.3.3 The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

§ 3.3.4 If the Architect approves a proposed substitution prior to receipt of Bids, such approval shall be set forth in an Addendum. Approvals made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3.5 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

§ 3.4 Addenda

§ 3.4.1 Addenda will be transmitted to Bidders known by the issuing office to have received complete Bidding Documents by email.

« »

§ 3.4.2 Addenda will be available where Bidding Documents are on file.

§ 3.4.3 Addenda will be issued no later than four days prior to the date for receipt of Bids, except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

§ 3.4.4 Prior to submitting a Bid, each Bidder shall ascertain that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.

ARTICLE 4 BIDDING PROCEDURES

§ 4.1 Preparation of Bids

§ 4.1.1 Bids shall be submitted on the forms included with or identified in the Bidding Documents.

§ 4.1.2 All blanks on the bid form shall be legibly executed. Paper bid forms shall be executed in a non-erasable medium.

§ 4.1.3 Sums shall be expressed in both words and numbers, unless noted otherwise on the bid form. In case of discrepancy, the amount entered in words shall govern.

§ 4.1.4 Edits to entries made on paper bid forms must be initialed by the signer of the Bid.

§ 4.1.5 All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change" or as required by the bid form.

§ 4.1.6 Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the bid security, state the Bidder's refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall neither make additional stipulations on the bid form nor qualify the Bid in any other manner.

§ 4.1.7 Each copy of the Bid shall state the legal name and legal status of the Bidder. As part of the documentation submitted with the Bid, the Bidder shall provide evidence of its legal authority to perform the Work in the jurisdiction where the Project is located. Each copy of the Bid shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further name the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached, certifying the agent's authority to bind the Bidder.

§ 4.1.8 A Bidder shall incur all costs associated with the preparation of its Bid.

§ 4.2 Bid Security

§ 4.2.1 Each Bid shall be accompanied by the following bid security:

« » Bid Bond From in Section 004113.2 of this Project Manual.

§ 4.2.2 The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and shall, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty. In the event the Owner fails to comply with Section 6.2, the amount of the bid security shall not be forfeited to the Owner.

§ 4.2.3 A surety bond is required as bid security it shall be written on Document 004113.2, Bid Bond, as otherwise provided in the Bidding Documents. The attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of an acceptable power of attorney. The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 4.2.4 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until (a) the Contract has been executed and bonds, if required, have been furnished; (b) the specified time has elapsed so that Bids may be withdrawn; or (c) all Bids have been rejected. However, if no Contract has been awarded or a Bidder has not been notified of the acceptance of its Bid, a Bidder may, beginning«60 »days after the opening of Bids, withdraw its Bid and request the return of its bid security.

§ 4.3 Submission of Bids

§ 4.3.1 A Bidder shall submit its Bid as indicated below:

« » In writing on Bid Forms supplied in Section 004113 of this Project Manual as per the Terms of the Advertisement for Bonds, Section 001113.

§ 4.3.2 Paper copies of the Bid, the bid security, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Project name, the Bidder's name and address, and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

§ 4.3.3 Bids shall be submitted by the date and time and at the place indicated in the invitation to bid. Bids submitted after the date and time for receipt of Bids, or at an incorrect place, will not be accepted.

§ 4.3.4 The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

§ 4.3.5 A Bid submitted by any method other than as provided in this Section 4.3 will not be accepted.

§ 4.4 Modification or Withdrawal of Bid

§ 4.4.1 Prior to the date and time designated for receipt of Bids, a Bidder may submit a new Bid to replace a Bid previously submitted, or withdraw its Bid entirely, by notice to the party designated to receive the Bids. Such notice shall be received and duly recorded by the receiving party on or before the date and time set for receipt of Bids. The receiving party shall verify that replaced or withdrawn Bids are removed from the other submitted Bids and not considered. Notice of submission of a replacement Bid or withdrawal of a Bid shall be worded so as not to reveal the amount of the original Bid.

§ 4.4.2 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids in the same format as that established in Section 4.3, provided they fully conform with these Instructions to Bidders. Bid security shall be in an amount sufficient for the Bid as resubmitted.

§ 4.4.3 After the date and time designated for receipt of Bids, a Bidder who discovers that it made a clerical error in its Bid shall notify the Architect of such error within two days, or pursuant to a timeframe specified by the law of the jurisdiction where the Project is located, requesting withdrawal of its Bid. Upon providing evidence of such error to the reasonable satisfaction of the Architect, the Bid shall be withdrawn and not resubmitted. If a Bid is withdrawn pursuant to this Section 4.4.3, the bid security will be returned as per Section 5.1.2.

« »

ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 Opening of Bids

If stipulated in an advertisement or invitation to bid, or when otherwise required by law, Bids properly identified and received within the specified time limits will be publicly opened and read aloud. A summary of the Bids may be made available to Bidders.

§ 5.2 Rejection of Bids

Unless otherwise prohibited by law, the Owner shall have the right to reject any or all Bids.

§ 5.3 Acceptance of Bid (Award)

§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest responsive and responsible Bidder, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents. Unless otherwise prohibited by law,

the Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's best interests.

§ 5.3.2 Unless otherwise prohibited by law, the Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the lowest responsive and responsible Bidder on the basis of the sum of the Base Bid and Alternates accepted.

ARTICLE 6 POST-BID INFORMATION

§ 6.1 Contractor's Qualification Statement

Bidders to whom award of a Contract is under consideration shall submit to the Architect, a properly executed Statement of Contractor's Qualifications, provided in Section 004113.3, required to be submitted with the Bid.

§ 6.2 Owner's Financial Capability

A Bidder to whom award of a Contract is under consideration may request in writing, fourteen days prior to the expiration of the time for withdrawal of Bids, that the Owner furnish to the Bidder reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. The Owner shall then furnish such reasonable evidence to the Bidder no later than seven days prior to the expiration of the time for withdrawal of Bids. Unless such reasonable evidence is furnished within the allotted time, the Bidder will not be required to execute the Agreement between the Owner and Contractor.

§ 6.3 Submittals

§ 6.3.1 After notification of selection for the award of the Contract, the Bidder shall, as soon as practicable or as stipulated in the Bidding Documents, submit in writing to the Owner through the Architect:

- **.1** a designation of the Work to be performed with the Bidder's own forces;
- **.2** names of the principal products and systems proposed for the Work and the manufacturers and suppliers of each; and
- **.3** names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

§ 6.3.2 The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

§ 6.3.3 Prior to the execution of the Contract, the Architect will notify the Bidder if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, withdraw the Bid or submit an acceptable substitute person or entity. The Bidder may also submit any required adjustment in the Base Bid or Alternate Bid to account for the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

§ 6.3.4 Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

§ 7.1 Bond Requirements

§ 7.1.1 If stipulated in the Bidding Documents, the Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder.

§ 7.1.2 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

§ 7.1.3 The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 7.1.4 Unless otherwise indicated below, the Penal Sum of the Payment and Performance Bonds shall be the amount of the Contract Sum.

« »

§ 7.2 Time of Delivery and Form of Bonds

§ 7.2.1 The Bidder shall deliver the required bonds to the Owner not later than three days following the date of execution of the Contract. If the Work is to commence sooner in response to a letter of intent, the Bidder shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished and delivered in accordance with this Section 7.2.1.

§ 7.2.2 Unless otherwise provided, the bonds shall be written on The, Performance Bond and Payment Bond form provided in Section 004113, Bidding Documents.

§ 7.2.3 The bonds shall be dated on or after the date of the Contract.

§ 7.2.4 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix to the bond a certified and current copy of the power of attorney.

ARTICLE 8 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS

§ 8.1 Copies of the proposed Contract Documents have been made available to the Bidder and consist of the following documents:

.1 **All Forms Insurance certificates and bonds required in Document 004113 – Bidding Documents and as required in Document 002113, Part 1 General, 1.2 Additional Instructions to Bidders.**

« »

.2 AIA Document A201-2017, "General Conditions of the Contract for Construction"

« »

.3 **Drawings as generated in Document 000115 – List if Drawing Sheets.**

« »

.4 Technical specifications including Division 02- Existing Conditions, Division 26 – Eletrical, Division 31 – Earthwork, Division 32 – Exterior Improvements and Division 33 - Site Utilities.

»

.5 Addenda: As Issued

DOCUMENT 002513 - PREBID MEETING

PART 1 - GENERAL

1.1 PREBID MEETING

A. Studio A Landscape Architecture and Engineering, D.P.C. staff will conduct a "virtual" Prebid meeting as indicated below:

1. Meeting Date: June 12, 2023
2. Meeting Time: 10:00 a.m., local time.
3. Virtual Meeting Link: Meeting I.D. 614 - 440 - 1330
   Passcode: ak0PDB

B. Attendance:

1. Prime Bidders: Attendance at Prebid meeting is recommended but is not mandatory.
2. Subcontractors: Attendance at Prebid meeting is recommended but is not mandatory.

C. Bidder Questions: Submit written questions to be addressed at Prebid Meeting minimum of three (3) business days prior to meeting.

D. Agenda: Prebid meeting agenda will include review of topics that may affect proper preparation and submittal of bids, including the following:

1. Procurement and Contracting Requirements:

   a. Advertisement for Bids.
   b. Instructions to Bidders.
   c. Bidder Qualifications.
   d. Bonding.
   e. Insurance.
   f. Bid Security.
   g. Bid Form and Attachments.
   h. Bid Submittal Requirements.
   i. Bid Submittal Checklist.
   j. Notice of Award.

2. Communication during Bidding Period:

   a. Obtaining documents.
   b. Access to Project Web site.
   c. Bidder's Requests for Information.
   d. Bidder's Substitution Request/Prior Approval Request.
   e. Addenda.

3. Contracting Requirements:

    a. Agreement.
    b. The General Conditions.
    c. The Supplementary Conditions. (If any)
    d. Other Owner requirements.

4. Construction Documents:

    a. Scope of Work.
    b. Temporary Facilities.
    c. Use of Site.
    d. Work Restrictions.
    e. Alternates, Allowances, and Unit Prices. (If any)
    f. Substitutions following award.

5. Separate Contracts:

    a. Work by Owner.
    b. Work of Other Contractors.

6. Schedule:

    a. Project Schedule.
    b. Contract Time.
    c. Liquidated Damages. (If any)
    d. Other Bidder Questions.

7. Site/facility visit or walkthrough.
8. Post-Meeting Addendum.

E. Minutes: Studio A Landscape Architecture and Engineering, D.P.C. staff will record and distribute meeting minutes to attendees. Minutes of meeting are issued as Available Information and do not constitute a modification to the Procurement and Contracting Documents. Modifications to the Procurement and Contracting Documents are issued by written Addendum only.

1. Sign-in Sheet: Minutes will include list of meeting attendees.
2. List of Plan holders: Minutes will include list of plan holders.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF DOCUMENT 002513

DOCUMENT 003132 - GEOTECHNICAL DATA

PART 1 - GENERAL

1.1 GEOTECHNICAL DATA

A. This Document with its referenced attachments is part of the Procurement and Contracting Requirements for the Project. They provide Owner's information for Bidders' convenience and are intended to supplement rather than serve in lieu of Bidders' own investigations. They are made available for Bidders' convenience and information. This Document and its attachments ARE NOT part of the Contract Documents.

B. Because subsurface conditions indicated by the soil test pits are a sampling in relation to the entire construction area, and for other reasons, the Owner, and the Landscape Architect-Engineer do not warranty the conditions below the depths of the test pits or that the strata logged from the test pits are necessarily typical of the entire site. Any party using the information described in the soil test pit logs and percolation tests shall accept full responsibility for its use.

C. Soil data for Project, obtained by Studio A Landscape Architecture and Engineering, D.P.C., witnessed by Matthew E. Huntington, P.E., dated March 8, 2022, is included on the Project Drawings, Drawing L-0.20, “Existing Conditions.”

D. The soil data obtained by Studio A Landscape Architecture and Engineering, D.P.C., dated March 8, 2022, is offered with the following qualifications:

1. The data included in the soil test pit logs are those observed in specific locations on the project site and may not be representative of overall site soil conditions.
2. Any party using information described in the test pit logs shall make additional tests and conduct other exploratory operations that may be required to determine the character of subsurface materials that may be encountered.

E. Related Requirements:

1. Document 002113 "Instructions to Bidders" for the Bidder's responsibilities for examination of Project site and existing conditions.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF DOCUMENT 003132

DOCUMENT 004113 – BIDDING DOCUMENTS

PART 1 - GENERAL

1.1 BIDDING DOCUMENTS

A. The following documents are to be completed and included with the Bid.
   1. Document 004113.1 Bid Form – Stipulated Sum (Single Prime Contract)
      a. 004113.1A Alternates Form
      b. 004113.1B Unit Prices Form
   2. Document 004113.2 Bid Bond
   3. Document 004113.3 Statement of Contract's Qualifications
   4. Document 004113.4 Non-Collusive Bidding Certification
   5. Document 004113.5 Performance Bond Information Form
   6. Document 004113.6 Certificate of Compliance with the Iran Divestment Act
   7. Document 004113.7 Notice of Award

B. Copies of the above forms are included in this Project Manual.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF DOCUMENT 004113

DOCUMENT 004113.1 - BID FORM - STIPULATED SUM (SINGLE-PRIME CONTRACT)

PART 1 - GENERAL

1.1 BID INFORMATION

A. Bidder: _____.

B. Project Name: Rip Van Winkle Lake Park.

C. Project Location: 33 Upper Lake Road, Tannersville, NY 12485.

D. Owner: Village of Tannersville, New York.

E. Landscape Architect and Engineer: Studio A Landscape Architecture and Engineering, D.P.C.

F. Architect Project Number: 21061

1.2 CERTIFICATIONS AND BASE BID

A. Base Bid, Single-Prime (All Trades) Contract: The undersigned Bidder, having carefully examined the Procurement and Contracting Requirements, Conditions of the Contract, Drawings, Specifications, and all subsequent Addenda, as prepared by Studio A Landscape Architecture and Engineering, D.P.C. having visited the site, and being familiar with all conditions and requirements of the Work, hereby agrees to furnish all material, labor, equipment and services, including all scheduled allowances, (if any), necessary to complete the construction of the above-named project, according to the requirements of the Procurement and Contracting Documents, for the stipulated sum of:

1. For the stipulated sum of: _____ Dollars ($_____).
2. The above amount may be modified by amounts indicated by the Bidder on the attached Document 004113.1A "Alternates Form" and Document 004113.1B "Unit Prices Form."

1.3 BID GUARANTEE

A. The undersigned Bidder agrees to execute a contract for this Work in the above amount and to furnish surety as specified within ten (10) days after a written Notice of Award, if offered within sixty (60) days after receipt of bids, and on failure to do so agrees to forfeit to Owner the attached cash, cashier's check, certified check, U.S. money order, or bid bond, as liquidated damages for such failure, in the following amount constituting five percent (5%) of the Base Bid amount above:

1. Bid Guarantee_____ Dollars ($_____).

B. In the event Owner does not offer Notice of Award within the time limits stated above, Owner will return to the undersigned the cash, cashier's check, certified check, U.S. money order, or bid bond as per the terms indicated in document 001113 – Advertisement for Bids.

1.4 SUBCONTRACTORS AND SUPPLIERS

A. The following companies shall execute subcontracts for the following portions of the Work:

1._____ 4._____

2._____ 5._____

3._____ 6._____

1.5 TIME OF COMPLETION

A. The undersigned Bidder proposes and agrees hereby to commence the Work of the Contract Documents on a date specified in a written Notice to Proceed to be issued by Studio A Landscape Architecture and Engineering, D.P.C., and shall achieve substantially completion by May 17, 2024 and fully complete the Work by May 24, 2024.

1.6 ACKNOWLEDGEMENT OF ADDENDA

A. The undersigned Bidder acknowledges receipt of and use of the following Addenda in the preparation of this Bid:

1. Addendum No. 1, dated _____.
2. Addendum No. 2, dated _____.
3. Addendum No. 3, dated _____.
4. Addendum No. 4, dated _____.

1.7 BID SUPPLEMENTS

A. The following supplements are a part of this Bid Form and are attached hereto.
1. All Forms identified in Document 004113, Bidding Documents, Including Documents 004113.2 Bid Bond, 004113.3 Statement of Contractor’s Qualifications, 004113.4 Non-Collusive Bidding Certification, 004113.5 Performance Bond Information Form 004113.6 Certificate of Compliance with the Iran Divestment Act and 004113.7 Notice of Award.

1.8 CONTRACTOR'S LICENSE

A. The undersigned further states that it is a duly licensed contractor, for the type of work proposed in New York State, and that all fees, permits, etc., pursuant to submitting this proposal have been paid in full.

1.9 SUBMISSION OF BID

A. Respectfully submitted this ____ day of _____, 2023.

B. Submitted By:_____(Name of bidding firm or corporation).

C. Authorized Signature:_____(Handwritten signature).

D. Signed By:_____(Type or print name).

E. Title:_____(Owner/Partner/President/Vice President).

F. Witnessed By:_____(Handwritten signature).

G. Attest:_____(Handwritten signature).

H. By:_____(Type or print name).

I. Title:_____(Corporate Secretary or Assistant Secretary).

J. Street Address:_____.

K. City, State, Zip:_____.

L. Phone:_____.

M. License No.:_____.

N. Federal ID No.:_____(Affix Corporate Seal Here).

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF DOCUMENT 004113.1

DOCUMENT 004113.1A - ALTERNATES FORM

PART 1 - GENERAL

1.1 BID INFORMATION

A. Bidder: _____.

B. Project Name: Rip Van Winkle Lake Park – General Construction

C. Project Location: 33 Upper Lake Road, Tannersville, NY 12485

D. Owner: Village of Tannersville, New York 12845

E. Architect: Studio A Landscape Architecture and Engineering, D.P.C.

F. Architect Project Number: 21061

1.2 BID FORM SUPPLEMENT

A. This form is required to be attached to the Bid Form, Document 004113.1

1.3 DESCRIPTION

A. The undersigned Bidder proposes the amount below be added to or deducted from the Base Bid if particular alternates are accepted by Owner. Amounts listed for each alternate include costs of related coordination, modification, or adjustment.

1. Stipulated Sum Contract: Alternate prices given below includes adjustment to Contractor's Fee.

B. If the alternate does not affect the Contract Sum, the Bidder shall indicate "NO CHANGE."

C. If the alternate does not affect the Work of this Contract, the Bidder shall indicate "NOT APPLICABLE."

D. The Bidder shall be responsible for determining from the Contract Documents the effects of each alternate on the Contract Time and the Contract Sum.

E. Owner reserves the right to accept or reject any alternate, in any order, and to award or amend the Contract accordingly within 30 days of the Notice of Award unless otherwise indicated in the Contract Documents.

F. Acceptance or non-acceptance of any alternates by the Owner shall have no effect on the Contract Time unless the "Schedule of Alternates" Article below provides a formatted space for the adjustment of the Contract Time.

1.4 SCHEDULE OF ALTERNATES

A. Alternate No. 1 – Fishing Pier (Specification Item 323302)

1. ADD

2. _____ Dollars

3. ADD__DEDUCT___NO CHANGE___ Calendar days to adjust the contract time for this alternate.

B. Alternate No. 2 – Kayak/Canoe Launch (Specification Item 323301)

1. DEDUCT

2. _____ Dollars

3. ADD__DEDUCT___NO CHANGE___ Calendar days to adjust the contract time for this alternate.

C. Alternate No. 3 – Lighting at Circular Drop-Off/Parking Area and Surface Spray Aerator (fountain in lake) - including all wiring circuitry and controls (All Division 26-Electircal work and Specifications Item 323306)

1. DEDUCT

2. _____ Dollars

3. ADD__DEDUCT___NO CHANGE___ Calendar days to adjust the contract time for this alternate.

D. Alternate No. 4 – Amphitheater Seating

1. DEDUCT

2. _____ Dollars

3. ADD__DEDUCT___NO CHANGE___ Calendar days to adjust the contract time for this alternate.

E. Alternate No. 5 – Stone Wall/Entry Sign at Circular Drop-off/Parking Area

1. DEDUCT

2. _____ Dollars

3. ADD__DEDUCT___NO CHANGE___ Calendar days to adjust the contract time for this alternate.

F. Alternate No. 6 – Bird Boxes (Specification Item 323307)

1. DEDUCT

2. _____ Dollars

3. ADD__DEDUCT___NO CHANGE___ Calendar days to adjust the contract time for this alternate.

G. Alternate No. 7 – Stabilized Lawn Overflow Parking Areas

1. DEDUCT

2. _____ Dollars

3. ADD__DEDUCT___NO CHANGE___ Calendar days to adjust the contract time for this alternate.

H. Alternate No. 8 – Stone Seat wall and Fire Pit at Picnic Pavilion

1. DEDUCT

2. _____ Dollars

3. ADD__DEDUCT___NO CHANGE___ Calendar days to adjust the contract time for this alternate.

1.5 SUBMISSION OF BID SUPPLEMENT

A. Respectfully submitted this ____ day of _____, 2023

B. Submitted By:_____(Insert name of bidding firm or corporation).

C. Authorized Signature:_____(Handwritten signature).

D. Signed By:_____(Type or print name).

E. Title:_____(Owner/Partner/President/Vice President).

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF DOCUMENT 004113.1A

DOCUMENT 004113.1B - UNIT PRICES FORM

PART 1 - GENERAL

1.1 BID INFORMATION

A. Bidder: _____.

B. Project Name: Rip Van Winkle Lake Park – General Construction

C. Project Location: 33 Upper Lake Road, Tannersville, NY 12485

D. Owner: Village of Tannersville, New York 12845

E. Architect: Studio A Landscape Architecture and Engineering, D.P.C.

F. Architect Project Number: 21061

1.2 BID FORM SUPPLEMENT

A. This form is required to be attached to the Bid Form, Document 004113.1

1.3 DESCRIPTION

A. The undersigned Bidder proposes the amounts below be added to or deducted from the Contract Sum on performance and measurement of the individual items of Work.

B. If the unit price does not affect the Work of this Contract, the Bidder shall indicate "NOT APPLICABLE."

1.4 UNIT PRICES

A. Unit-Price No. 1A: Picnic Tables (Specification Section 323309) (supply and deliver only)

1. ADD_____ dollars ($_____) each.

Unit-Price No. 1B: Handicap Accessible Picnic Tables (Specification Section 323309) (supply and deliver only)

2. ADD_____ dollars ($_____) each.

B. Unit-Price No. 2: B.B.Q. Grills (Specification Section 323310) (Supply, Deliver and Install in Locations Directed)

1. ADD_____ dollars ($_____) each.

C. Unit-Price No. 3: Additional boulder benches (detail #4, Drawing L - 5.30) (Note: 4 boulder benches are included in base bid.) (Supply, Deliver and Install in Locations Directed)

1. ADD_____ dollars ($_____) each

2. ADD_____ dollars ($_____) each

1.5 SUBMISSION OF BID SUPPLEMENT

A. Respectfully submitted this ____ day of _____, 2023.

B. Submitted By:_____(Insert name of bidding firm or corporation).

C. Authorized Signature:_____(Handwritten signature).

D. Signed By:_____(Type or print name).

E. Title:_____(Owner/Partner/President/Vice President).

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF DOCUMENT 004113.1B

DOCUMENT 004113.1C - REIMBURSABLE STORMWATER MANAGMENT PRACTICE FORMS

The Village of Tanners Ville is eligible for reimbursement from the Catskill Watershed Corporation (CWC) for implementing stormwater management practices related to the construction of this project. Contractors are requested to itemize the following costs for construction in order to allow the village to obtain CWC reimbursement. Identification of these costs WILL NOT BE USED to determine the successful bidder.

- All plantings in stormwater practices (bio-retention areas, etc.). These plants are identified, enumerated, on the planting plants. $
- All Plantings in the shoreline buffer area (50 Bayberry, 80 Rugosa Rose and "no mow" turf between the lakeshore and pedestrian path. $
- Stabilized lawn areas for overflow parking $
- All bio-retention pond construction including bio-pond mulch, pond liners, pond filter medium, pond gravel installed around bio-ponds for pretreatment gravel diagrams, etc. $
- All SWPP Practices (silt fence, concrete washout areas, stabilized construction entrance, SWPP mailbox, etc.) $
- Structural stormwater practices (installation & labor to construct the bio-retention system, 4-6 and 8" Hope, headwalls and miscellaneous stormwater structures, etc. $

Total Stormwater Management Practices $

END OF DOCUMENT 004113.1C

DOCUMENT 004113.2 - BID BOND

Any Singular reference to Bidder, Surety, Owner, or other party shall be considered plural where applicable.

BIDDER (Name and Address):

SURETY (Name, and Address of Principal Place of Business)

OWNER (Name and Address):

BID Rip Van Winkle Lake Park – General Construction
Bid Due Date: July 6, 2023
Description: Rip Van Winkle Lake Park - Village of Tannersville, New York 12845

BOND
Bond Number:
Date:
Penal Sum: _____ $_____
(Words) (Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth below, do each because this Bid Bond to be duly executed by an authorized officer, agent, or representative.

BIDDER	SURETY
_____ (Seal)	_____ (Seal)
Bidder's Name and Corporate Seal	Surety's Name and Corporate Seal
By: _____	By: _____
Signature	Signature (Attach Power of Attorney)
_____	_____
Print Name	Print Name
_____	_____
Title	Title
Attest: _____	Attest: _____
Signature	Signature
_____	_____
Title	Title

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.

2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.

3. This obligation shall be null and void if:

   3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) and executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or

   3.2 All Bids are rejected by Owner, or

   3.3 Owner fails to issue a Notice of Award of Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by paragraph 5 hereof)

4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project, and including a statement of the amount due.

5. Surety waives notice of all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.

6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after the Bid due date.

7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in New York State.

8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their

respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.

9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.

10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.

11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

END OF DOCUMENT 004113.2

DOCUMENT 004113.3 - STATEMENT OF CONTRACTOR'S QUALIFICATIONS

This statement must be submitted by the Prime Contractor with their Bid. All questions must be answered, and the data given must be clear and comprehensive.

1. Name of Bidder _____

   Phone No. _____

2. Permanent main office address _____

   _____

3. When organized or began business _____

4. If a corporation, where incorporated _____

5. How many years has your present firm been engaged in the contracting business?

   _____ Under what name? _____

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

   If so, where, and why. _____

7. Will you upon request, submit a detailed financial statement and furnish the following information that may be requested by the owner? _____

   - Contracts on hand: (Indicate location, client, gross amount of each contract, approximate anticipated dates of completion, A/E name, address, and contact person).
   - List of contracts of a similar nature performed within the past two years with location, client, and gross amount, date of completion, E/A name, address, and contact person.
   - List of major equipment owned and available within 10 days of award of this contract.
   - Background and experience of the principal members of your personnel, including officers.
   - Credit available (written evidence).
   - Such statements, if required, shall be notarized, and delivered to the owner within three (3) days of written or verbal request.

8. The undersigned hereby authorizes and requests any person, firm, or corporation to furnish any information requested by the Owner in certification of the recitals comprising this Statement of Contractor's Qualifications.

Dated at _____this _____day of _____, _____

_____

NAME OF CONTRACTOR

_____

BY (signature)

_____

TITLE

END OF DOCUMENT 004113.3

DOCUMENT 004113.4 – NON-COLLUSIVE BIDDING CERTIFICATION

(Required by Section 103-d of the New York State General Municipal Law)

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

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

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

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

_____

(Print or type name of Bidder)

By: _____
(Signature) (Individuals name & title)

Subscribed and sworn to before me

This _____day of _____

_____

(Signature of Notary Public) (Notary Stamp)

END OF DOCUMENT 004113.4

DOCUMENT 004113.5 – PERFORMANCE BOND INFORMATION FORM

(To be completed and submitted with Bid Forms by all Bidders for Contracts exceeding $50,000.)

Project Location: _____Village of Tannersville_____

Construction Contract Number: _____General Construction_____

Name of Contract: _____Rip Van Winkle Lake Park – General Construction_____

Name of Contractor: _____

Address: _____

_____ Phone No: _____

Bond Company or Person Issuing Security Bond: _____

_____

Address: _____

_____ Phone No: _____

Bond Company Agent: _____

_____

Address: _____

_____ Phone No: _____

Amount of Bond: * ____Contract Price as Awarded_____

Duration of Bond: * ____ One Year After Date of Final Payment_____

Identification Number of Bond: ___Assigned When Bond is Furnished _____

END OF DOCUMENT 004113.5

DOCUMENT 004113.6 – CERTIFICATE OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT

As a result of the Iran Divestment Act of 2012 (the "Act"), Chapter 1 of the 2012 Laws of New York, a new provision has been added to State Finance Law (SFL), §165-a and General Municipal Law §103-g, both effective April 12, 2012. Under the Act, the Commissioner of the New York State Office of General Services ("OGS") will be developing a list of "persons" who are engaged in "investment activities in Iran" (both are defined terms in the law) (the "Prohibited Entities List"). Pursuant to SFL § 165-a(3)(b), the initial list is expected to be issued no later than 120 days after the Act's effective date at which time will be posted on the OGS website.

By submitting a bid in response to this solicitation or by assuming the responsibility of a Contract awarded hereunder, each Bidder/Contractor, any person signing on behalf of any Bidder/Contractor and any assignee or subcontractor and, in the case of a joint bid, each party thereto, certifies, under penalty of perjury, that once the Prohibited Entities List is posted on the OGS website, that to the best of its knowledge and belief, that each Bidder/Contractor and any subcontractor or assignee is not identified on the Prohibited Entities List created pursuant to SFL §165-a(3)(b).

Additionally, Bidder/Contractor is advised that once the Prohibited Entities List is posted on the OGS Website, any Bidder/Contractor seeking to renew or extend a Contract or assume the responsibility of a Contract awarded in response to this solicitation must certify at the time the Contract is renewed, extended, or assigned that is not included on the Prohibited Entities List.

During the term of the Contract, should the Village receive information that a Bidder/Contractor is in violation of the above-referenced certifications, the Village will offer the person or entity an opportunity to respond. If the person or entity fails to demonstrate that he/she/it has ceased engagement in the investment which is in violation of the Act within ninety (90) days after the determination of such violation, then the Village shall take such action as may be appropriate including, but not limited to, imposing sanctions, seeking compliance, recovering damages, or declaring the Bidder/Contractor in default. The Village reserves the right to reject any bid, or request for assignment for a Bidder/Contractor that appears on the Prohibited Entities List prior to the award or execution of a contract or any renewal thereof, as applicable, and to pursue a responsibility review with respect to any Bidder/Contractor that is awarded a contract and subsequently appears on the Prohibited Entities List.

I, _____, being duly sworn, deposes and says that he/she

is the _____ of the _____ corporation and that neither the Bidder/Contractor nor any proposed subcontractor is identifies on the Prohibited Entities List.

Signed: _____

SWORN to before me this _____ day of _____ 2023___

Notary Public: _____

OR

DECLARATION OF BIDDER'S INABILITY TO PROVIDE CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT

Bidders shall complete this form if they cannot certify that the bidder/contractor or any proposed subcontractor is not identified on the Prohibited Entities List. The Village reserves the right to undertake any investigation into the information provided herein or to request additional information from the bidder.

Name of the Bidder: _____

Address of the Bidder: _____

Has Bidder been involved in investment activities in Iran? _____

Describe the type of activities including but not limited to the amounts and the nature of the investments (e.g. banking, energy, real estate): _____

_____

_____

If so, when did the first investment activity occur? _____

Have the investment activities ended? _____

If so, what was the date of the last investment activity? _____

Has the Bidder adopted, publicized, or implemented a formal plan to cease the investment activities in Iran and to refrain from engaging in any investments in Iran? _____

If so, provide the date of the adoption of the plan by the Bidder and proof of the adopted resolution, if anu and a copy of the formal plan. _____

In detail, state the reasons why the Bidder cannot provide the Certification of Compliance with the Iran Divestment Act below (additional pages may be attached): _____

_____

_____

I, _____being duly sworn, deposes and says that he/she is the _____ of the _____ corporation and the foregoing is true and accurate.

_____
Signed

SWORN to before me this _____ day of _____ 2023___

Notary Public: _____

END OF DOCUMENT 004113.6

DOCUMENT 004113.7 – NOTICE OF AWARD

Date of Issuance:

Owner: Village of Tannersville Owner's Contract No.: General Construction

Landscape Architect/ Engineer: Studio A Landscape Architecture and Engineering D.P.C

Landscape Architect/ Engineer Project No.: 21061

Project: Rip Van Winkle Lake Park Contract Name: Rip Van Winkle Lake Park-General Construction

Bidder:

Bidder's Address:

TO BIDDER:

You are notified that Owner has accepted your Bid dated _____, 2023 for the above Contract, and that you are the Successful Bidder and are awarded a Contract for:

Village of Tannersville, Rip Van Winkle Lake Park Project – Contract for General Construction

The Contract Price of the awarded Contract is: $_____

6 unexecuted counterparts of the Agreement accompany this Notice of Award, and one copy of the Contract Documents accompanies this Notice of Award or has been transmitted or made available to Bidder electronically.

- A Set of the Drawings will be delivered separately from the other contract Documents.

You must comply with the following conditions precedent within 10 days of the date of this Notice of Award:

1. Deliver to Owner 6 counterparts of the Agreement, fully executed by Bidder.
2. Deliver with the executed Agreement(s) the Contract security [e.g., performance and payment bonds} and insurance documentation as specified in the Instructions to Bidders.
3. Other conditions precedent (if any):

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Agreement, together with any additional copies of the Contract Documents as indicated in Paragraph 2.02 of the General Conditions.

Owner: _____
Authorized Signature

By: David Schneider
Title: Mayor – Village of Tannersville

Copy: Studio A Landscape Architecture and Engineering D.P.C

END OF DOCUMENT 004113.7

DOCUMENT 006000 – CONTRACTING DOCUMENTS

PART 1 - GENERAL

1.1 CONTRACTING DOCUMENTS

A. The following documents are to be completed and included in the Contract for Construction.
   1. Document 006000.1 Agreement
   2. Document 006000.2 Performance Bond
   3. Document 006000.3 Payment Bond
   4. Document 006000.4 Certificates of Owner’s Attorney
   5. Document 006000.5 Supplements to Bond Forms
   6. Document 006000.6 Certificates of Insurance
   7. Document 006000.7 Notice to Proceed

B. Copies of the above forms are included in the Project Manual.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF DOCUMENT 006000

DOCUMENT 006000.1 – AGREEMENT

PART 1 – GENERAL

1.1 Agreement

A. AIA Document A104-2017 “Standard Abbreviated Form of Agreement Between Owner and Contractor” is hereby incorporated into the procurement and contract documents by reference.
    1. A draft copy of AIA Document A104-2017 “Standard Form of Agreement Between Owner and Contractor” is included in this project manual.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF DOCUMENT 006000.1

DRAFT

AIA® Document A104™ – 2017

Standard Abbreviated Form of Agreement Between Owner and Contractor

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

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

« »« » Village of Tannersville
« » 1 Park Lane
« » PO Box 967
« » Tannersville, New York, 12485

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

« »« »
« »
« »
« »

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

« »Gooseberry Creek Revitalization strategy phase II
« » Rip Van Winkle Lake Park Contract for General Construction
« » DOS Project No. C1001671

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

« »« » Studio A Landscape Architecture and Engineering, D.P.C.
« » 38 High Rock Avenue, Suite 3
« » P.O. Box 272
« » Saratoga Springs, NY 12866Attn: Kirsten Catellier, ASLA

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

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

TABLE OF ARTICLES

ARTICLE 1 THE WORK OF THIS CONTRACT

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

ARTICLE 2 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 2.1 The date of commencement of the Work shall be:
(Check one of the following boxes.)

[« »] The date of this Agreement.

[« X»] A date set forth in a notice to proceed issued by the Owner.

[« X»] Established as follows:
(Insert a date or a means to determine the date of commencement of the Work.)

« The contractor has been determined to satisfy the required minority and Women Owned Business Enterprise (M/WBE) requirements »

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

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

§ 2.3 Substantial Completion

§ 2.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:
(Check the appropriate box and complete the necessary information.)

[« »] Not later than « » (« ») calendar days from the date of commencement of the Work.

[« X »] By the following date: « May 17, 2024 »

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

Portion of Work	Substantial Completion Date
N/A	

§ 2.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 2.3, liquidated damages, if any, shall be assessed as set forth in Section 3.5.

ARTICLE 3 CONTRACT SUM

§ 3.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be one of the following:
(Check the appropriate box.)

[« X »] Stipulated Sum, in accordance with Section 3.2 below

[« »] Cost of the Work plus the Contractor's Fee, in accordance with Section 3.3 below

[« »] Cost of the Work plus the Contractor's Fee with a Guaranteed Maximum Price, in accordance with Section 3.4 below

(Based on the selection above, complete Section 3.2, 3.3 or 3.4 below.)

§ 3.2 The Stipulated Sum shall be « » ($ « »), subject to additions and deductions as provided in the Contract Documents.

§ 3.2.1 The Stipulated Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:
(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

« »

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

Item	Units and Limitations	Price per Unit ($0.00)

§ 3.2.3 Allowances, if any, included in the stipulated sum:
(Identify each allowance.)

Item	Price

§ 3.3 Cost of the Work Plus Contractor's Fee
§ 3.3.1 The Cost of the Work is as defined in Exhibit A, Determination of the Cost of the Work.

§ 3.3.2 The Contractor's Fee:
(State a lump sum, percentage of Cost of the Work or other provision for determining the Contractor's Fee and the method of adjustment to the Fee for changes in the Work.)

« » N/A

§ 3.4 Cost of the Work Plus Contractor's Fee With a Guaranteed Maximum Price
§ 3.4.1 The Cost of the Work is as defined in Exhibit A, Determination of the Cost of the Work.

§ 3.4.2 The Contractor's Fee:
(State a lump sum, percentage of Cost of the Work or other provision for determining the Contractor's Fee and the method of adjustment to the Fee for changes in the Work.)

« »

§ 3.4.3 Guaranteed Maximum Price
§ 3.4.3.1 The sum of the Cost of the Work and the Contractor's Fee is guaranteed by the Contractor not to exceed « » ($ « »), subject to additions and deductions by changes in the Work as provided in the Contract Documents. This maximum sum is referred to in the Contract Documents as the Guaranteed Maximum Price. Costs which would cause the Guaranteed Maximum Price to be exceeded shall be paid by the Contractor without reimbursement by the Owner.
(Insert specific provisions if the Contractor is to participate in any savings.)

« » N/A

§ 3.4.3.2 The Guaranteed Maximum Price is based on the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:
(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

« »

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

Item	Units and Limitations	Price per Unit ($0.00)

§ 3.4.3.4 Allowances, if any, included in the Guaranteed Maximum Price:
(Identify each allowance.)

Item	Price

§ 3.4.3.5 Assumptions, if any, on which the Guaranteed Maximum Price is based:

« »

§ 3.4.3.6 To the extent that the Contract Documents are anticipated to require further development, the Guaranteed Maximum Price includes the costs attributable to such further development consistent with the Contract Documents and reasonably inferable therefrom. Such further development does not include changes in scope, systems, kinds and quality of materials, finishes or equipment, all of which, if required, shall be incorporated by Change Order.

§ 3.4.3.7 The Owner shall authorize preparation of revisions to the Contract Documents that incorporate the agreed-upon assumptions contained in Section 3.4.3.5. The Owner shall promptly furnish such revised Contract Documents to the Contractor. The Contractor shall notify the Owner and Architect of any inconsistencies between the agreed-upon assumptions contained in Section 3.4.3.5 and the revised Contract Documents.

§ 3.5 Liquidated damages, if any:
(Insert terms and conditions for liquidated damages, if any.)

« » Five hundred dollars ($500) per calendar day after September 15, 2023

ARTICLE 4 PAYMENT

§ 4.1 Progress Payments

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

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

« »

§ 4.1.3 Provided that an Application for Payment is received by the Architect not later than the « » day of a month, the Owner shall make payment of the certified amount to the Contractor not later than the « » day of the « » month. If an Application for Payment is received by the Architect after the date fixed above, payment shall be made by the Owner not later than « » (« ») days after the Architect receives the Application for Payment.
(Federal, state or local laws may require payment within a certain period of time.)

§ 4.1.4 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold retainage from the payment otherwise due as follows:
(Insert a percentage or amount to be withheld as retainage from each Application for Payment and any terms for reduction of retainage during the course of the Work. The amount of retainage may be limited by governing law.)

« »

§ 4.1.5 Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.
(Insert rate of interest agreed upon, if any.)

« » % « »

§ 4.2 Final Payment

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

.1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 18.2, and to satisfy other requirements, if any, which extend beyond final payment;

.2 the Contractor has submitted a final accounting for the Cost of the Work, where payment is on the basis of the Cost of the Work with or without a Guaranteed Maximum Price; and

.3 a final Certificate for Payment has been issued by the Architect in accordance with Section 15.7.1.

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

« »

ARTICLE 5 DISPUTE RESOLUTION

§ 5.1 Binding Dispute Resolution

For any claim subject to, but not resolved by, mediation pursuant to Section 21.5, the method of binding dispute resolution shall be as follows:
(Check the appropriate box.)

[« »] Arbitration pursuant to Section 21.6 of this Agreement

[« »] Litigation in a court of competent jurisdiction

[« »] Other *(Specify)*

« »

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

ARTICLE 6 ENUMERATION OF CONTRACT DOCUMENTS

§ 6.1 The Contract Documents are defined in Article 7 and, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 6.1.1 The Agreement is this executed AIA Document A104™–2017, Standard Abbreviated Form of Agreement Between Owner and Contractor.

§ 6.1.2 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:
(Insert the date of the E203–2013 incorporated into this Agreement.)

« »N/A

§ 6.1.3 The Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
Division 00	Procurement and contacting Documents	August 2022	001113, 002113, 002513, 003132, 004113
Division 01	General Requirements	August 2022	011000, 011010, 011020, 011030, 011040

§ 6.1.4 The Specifications:
(Either list the Specifications here or refer to an exhibit attached to this Agreement.)

« »

Section	Title	Date	Pages
Division 02	Existing Conditions	August 2022	024115, 024116
Division 26	Electrical	August 2022	
Division 31	Earthwork	August 2022	312000
Division 32	Exterior Improvements	August 2022	321330, 321331, 321340, 323301-12,

Division 33	Site Utilities	August 2022	324300 331001, 331002

§ 6.1.5 The Drawings:
(Either list the Drawings here or refer to an exhibit attached to this Agreement.)

« »

Number	Title	Date
Document 000115	List of Drawings	August 2022

§ 6.1.6 The Addenda, if any:

Number	Date	Pages

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are enumerated in this Article 6.

§ 6.1.7 Additional documents, if any, forming part of the Contract Documents:

.1 Other Exhibits:
(Check all boxes that apply.)

[« »] Exhibit A, Determination of the Cost of the Work.

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

« »

[« »] The Sustainability Plan:

Title	Date	Pages

[« »] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

.2 Other documents, if any, listed below:
(List here any additional documents that are intended to form part of the Contract Documents.)

« »

ARTICLE 7 GENERAL PROVISIONS

§ 7.1 The Contract Documents

The Contract Documents are enumerated in Article 6 and consist of this Agreement (including, if applicable, Supplementary and other Conditions of the Contract), Drawings, Specifications, Addenda issued prior to the execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 7.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind between any persons or entities other than the Owner and the Contractor.

§ 7.3 The Work

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

§ 7.4 Instruments of Service

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

§ 7.5 Ownership and use of Drawings, Specifications and Other Instruments of Service

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

§ 7.5.2 The Contractor, Subcontractors, Sub-subcontractors and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to the protocols established pursuant to Sections 7.6 and 7.7, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.

§ 7.6 Digital Data Use and Transmission

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

§ 7.7 Building Information Models Use and Reliance

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

§ 7.8 Severability

The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 7.9 Notice

§ 7.9.1 Except as otherwise provided in Section 7.9.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier,

or by electronic transmission in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:
(If other than in accordance with AIA Document E203–2013, insert requirements for delivering Notice in electronic format such as name, title and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

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

§ 7.10 Relationship of the Parties

Where the Contract is based on the Cost of the Work plus the Contractor's Fee, with or without a Guaranteed Maximum Price, the Contractor accepts the relationship of trust and confidence established by this Agreement and covenants with the Owner to cooperate with the Architect and exercise the Contractor's skill and judgment in furthering the interests of the Owner; to furnish efficient business administration and supervision; to furnish at all times an adequate supply of workers and materials; and to perform the Work in an expeditious and economical manner consistent with the Owner's interests. The Owner agrees to furnish and approve, in a timely manner, information required by the Contractor and to make payments to the Contractor in accordance with the requirements of the Contract Documents.

ARTICLE 8 OWNER

§ 8.1 Information and Services Required of the Owner

§ 8.1.1 Prior to commencement of the Work, at the written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 8.1.1, the Contract Time shall be extended appropriately.

§ 8.1.2 The Owner shall furnish all necessary surveys and a legal description of the site.

§ 8.1.3 The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 8.1.4 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 9.6.1, the Owner shall secure and pay for other necessary approvals, easements, assessments, and charges required for the construction, use, or occupancy of permanent structures or for permanent changes in existing facilities.

§ 8.2 Owner's Right to Stop the Work

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

§ 8.3 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents, and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to any other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 15.4.3, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including the Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 21.

ARTICLE 9 CONTRACTOR

§ 9.1 Review of Contract Documents and Field Conditions by Contractor

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

§ 9.1.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 8.1.2, shall take field measurements of any existing conditions related to that portion of the Work and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies, or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional unless otherwise specifically provided in the Contract Documents.

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

§ 9.2 Supervision and Construction Procedures

§ 9.2.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters.

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

§ 9.3 Labor and Materials

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

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

§ 9.3.3 The Contractor may make a substitution only with the consent of the Owner, after evaluation by the Architect and in accordance with a Modification.

§ 9.4 Warranty

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation or normal wear and tear under normal usage. All other warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 15.6.3.

§ 9.5 Taxes

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

§ 9.6 Permits, Fees, Notices, and Compliance with Laws

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

§ 9.6.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work. If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 9.7 Allowances

The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. The Owner shall select materials and equipment under allowances with reasonable promptness. Allowance amounts shall include the costs to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts. Contractor's costs for unloading and handling at the site, labor, installation, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowance.

§ 9.8 Contractor's Construction Schedules

§ 9.8.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

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

§ 9.9 Submittals

§ 9.9.1 The Contractor shall review for compliance with the Contract Documents and submit to the Architect Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents in coordination with the Contractor's construction schedule and in such sequence as to allow the Architect reasonable time for review. By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them; (2) determined and verified materials, field measurements, and field construction criteria related thereto, or will do so; and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents. The Work shall be in accordance with approved submittals.

§ 9.9.2 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents.

§ 9.9.3 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents or unless the Contractor needs to provide such services in order to carry out the Contractor's own responsibilities. If professional design services or certifications by a design professional are specifically required, the Owner and the Architect will specify the performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional. If no criteria are specified, the design shall comply with applicable codes and ordinances. Each Party shall be entitled to rely upon the information provided by the other Party. The Architect will review and approve or take other appropriate action on submittals for the limited purpose of checking for conformance with information provided and the design concept expressed in the Contract Documents. The Architect's review of Shop Drawings, Product Data, Samples, and similar submittals shall be for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. In performing such review, the Architect will approve, or take other appropriate action upon, the Contractor's Shop Drawings, Product Data, Samples, and similar submittals.

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

§ 9.11 Cutting and Patching
The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly.

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

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

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

§ 9.15 Indemnification
§ 9.15.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Section 9.15.1.

§ 9.15.2 In claims against any person or entity indemnified under this Section 9.15 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 9.15.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

ARTICLE 10 ARCHITECT
§ 10.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction, until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified in writing in accordance with other provisions of the Contract.

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

§ 10.3 The Architect will visit the site at intervals appropriate to the stage of the construction to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general, if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with

the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

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

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

§ 10.6 The Architect has authority to reject Work that does not conform to the Contract Documents and to require inspection or testing of the Work.

§ 10.7 The Architect will review and approve or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 10.8 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect will make initial decisions on all claims, disputes, and other matters in question between the Owner and Contractor but will not be liable for results of any interpretations or decisions rendered in good faith.

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

ARTICLE 11 SUBCONTRACTORS

§ 11.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site.

§ 11.2 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the Subcontractors or suppliers proposed for each of the principal portions of the Work. The Contractor shall not contract with any Subcontractor or supplier to whom the Owner or Architect has made reasonable written objection within ten days after receipt of the Contractor's list of Subcontractors and suppliers. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 11.3 Contracts between the Contractor and Subcontractors shall (1) require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by the terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by the Contract Documents, assumes toward the Owner and Architect, and (2) allow the Subcontractor the benefit of all rights, remedies and redress against the Contractor that the Contractor, by these Contract Documents, has against the Owner.

ARTICLE 12 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

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

those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

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

§ 12.3 The Owner shall be reimbursed by the Contractor for costs incurred by the Owner which are payable to a Separate Contractor because of delays, improperly timed activities, or defective construction of the Contractor. The Owner shall be responsible to the Contractor for costs incurred by the Contractor because of delays, improperly timed activities, damage to the Work, or defective construction of a Separate Contractor.

ARTICLE 13 CHANGES IN THE WORK

§ 13.1 By appropriate Modification, changes in the Work may be accomplished after execution of the Contract. The Owner, without invalidating the Contract, may order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, with the Contract Sum and Contract Time being adjusted accordingly. Such changes in the Work shall be authorized by written Change Order signed by the Owner, Contractor, and Architect, or by written Construction Change Directive signed by the Owner and Architect. Upon issuance of the Change Order or Construction Change Directive, the Contractor shall proceed promptly with such changes in the Work, unless otherwise provided in the Change Order or Construction Change Directive.

§ 13.2 Adjustments in the Contract Sum and Contract Time resulting from a change in the Work shall be determined by mutual agreement of the parties or, in the case of a Construction Change Directive signed only by the Owner and Architect, by the Contractor's cost of labor, material, equipment, and reasonable overhead and profit, unless the parties agree on another method for determining the cost or credit. Pending final determination of the total cost of a Construction Change Directive, the Contractor may request payment for Work completed pursuant to the Construction Change Directive. The Architect will make an interim determination of the amount of payment due for purposes of certifying the Contractor's monthly Application for Payment. When the Owner and Contractor agree on adjustments to the Contract Sum and Contract Time arising from a Construction Change Directive, the Architect will prepare a Change Order.

§ 13.3 The Architect will have authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be effected by written order and shall be binding on the Owner and Contractor. The Contractor shall carry out such written orders promptly. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work.

§ 13.4 If concealed or unknown physical conditions are encountered at the site that differ materially from those indicated in the Contract Documents or from those conditions ordinarily found to exist, the Contract Sum and Contract Time shall be equitably adjusted as mutually agreed between the Owner and Contractor; provided that the Contractor provides notice to the Owner and Architect promptly and before conditions are disturbed.

ARTICLE 14 TIME

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

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

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

§ 14.4 The date of Substantial Completion is the date certified by the Architect in accordance with Section 15.6.3.

§ 14.5 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) changes ordered in the Work; (2) by labor disputes, fire, unusual delay in deliveries, abnormal adverse weather conditions not reasonably anticipatable, unavoidable casualties, or any causes beyond the Contractor's control; or (3) by other causes that the

Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine, subject to the provisions of Article 21.

ARTICLE 15 PAYMENTS AND COMPLETION

§ 15.1 Schedule of Values

§ 15.1.1 Where the Contract is based on a Stipulated Sum or the Cost of the Work with a Guaranteed Maximum Price pursuant to Section 3.2 or 3.4, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Stipulated Sum or Guaranteed Maximum Price to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy required by the Architect. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 15.1.2 The allocation of the Stipulated Sum or Guaranteed Maximum Price under this Section 15.1 shall not constitute a separate stipulated sum or guaranteed maximum price for each individual line item in the schedule of values.

§ 15.2 Control Estimate

§ 15.2.1 Where the Contract Sum is the Cost of the Work, plus the Contractor's Fee without a Guaranteed Maximum Price pursuant to Section 3.3, the Contractor shall prepare and submit to the Owner a Control Estimate within 14 days of executing this Agreement. The Control Estimate shall include the estimated Cost of the Work plus the Contractor's Fee.

§ 15.2.2 The Control Estimate shall include:

- **.1** the documents enumerated in Article 6, including all Modifications thereto;
- **.2** a list of the assumptions made by the Contractor in the preparation of the Control Estimate to supplement the information provided by the Owner and contained in the Contract Documents;
- **.3** a statement of the estimated Cost of the Work organized by trade categories or systems and the Contractor's Fee;
- **.4** a project schedule upon which the Control Estimate is based, indicating proposed Subcontractors, activity sequences and durations, milestone dates for receipt and approval of pertinent information, schedule of shop drawings and samples, procurement and delivery of materials or equipment the Owner's occupancy requirements, and the date of Substantial Completion; and
- **.5** a list of any contingency amounts included in the Control Estimate for further development of design and construction.

§ 15.2.3 When the Control Estimate is acceptable to the Owner and Architect, the Owner shall acknowledge it in writing. The Owner's acceptance of the Control Estimate does not imply that the Control Estimate constitutes a Guaranteed Maximum Price.

§ 15.2.4 The Contractor shall develop and implement a detailed system of cost control that will provide the Owner and Architect with timely information as to the anticipated total Cost of the Work. The cost control system shall compare the Control Estimate with the actual cost for activities in progress and estimates for uncompleted tasks and proposed changes. This information shall be reported to the Owner, in writing, no later than the Contractor's first Application for Payment and shall be revised and submitted with each Application for Payment.

§ 15.2.5 The Owner shall authorize preparation of revisions to the Contract Documents that incorporate the agreed-upon assumptions contained in the Control Estimate. The Owner shall promptly furnish such revised Contract Documents to the Contractor. The Contractor shall notify the Owner and Architect of any inconsistencies between the Control Estimate and the revised Contract Documents.

§ 15.3 Applications for Payment

§ 15.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 15.1, for completed portions of the Work. The application shall be notarized, if required; be supported by all data substantiating the Contractor's right to payment that the Owner or Architect require; shall reflect retainage if provided for in the Contract Documents; and include any revised cost control information required by Section 15.2.4. Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor

does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 15.3.2 With each Application for Payment where the Contract Sum is based upon the Cost of the Work, or the Cost of the Work with a Guaranteed Maximum Price, the Contractor shall submit payrolls, petty cash accounts, receipted invoices or invoices with check vouchers attached, and any other evidence required by the Owner to demonstrate that cash disbursements already made by the Contractor on account of the Cost of the Work equal or exceed progress payments already received by the Contractor plus payrolls for the period covered by the present Application for Payment, less that portion of the progress payments attributable to the Contractor's Fee.

§ 15.3.3 Payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment stored, and protected from damage, off the site at a location agreed upon in writing.

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

§ 15.4 Certificates for Payment

§ 15.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner of the Architect's reasons for withholding certification in whole or in part as provided in Section 15.4.3.

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

§ 15.4.3 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 15.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 15.4.1. If the Contractor and the Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 9.2.2, because of

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

.7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 15.4.4 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 15.4.3, in whole or in part, that party may submit a Claim in accordance with Article 21.

§ 15.5 Progress Payments

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

§ 15.5.2 Neither the Owner nor Architect shall have an obligation to pay or see to the payment of money to a Subcontractor or supplier except as may otherwise be required by law.

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

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

§ 15.6 Substantial Completion

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

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

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

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

§ 15.7 Final Completion and Final Payment

§ 15.7.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions stated in Section 15.7.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 15.7.2 Final payment shall not become due until the Contractor has delivered to the Owner a complete release of all liens arising out of this Contract or receipts in full covering all labor, materials and equipment for which a lien could be filed, or a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including costs and reasonable attorneys' fees.

§ 15.7.3 The making of final payment shall constitute a waiver of claims by the Owner except those arising from

- **.1** liens, claims, security interests or encumbrances arising out of the Contract and unsettled;
- **.2** failure of the Work to comply with the requirements of the Contract Documents;
- **.3** terms of special warranties required by the Contract Documents; or
- **.4** audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 15.7.4 Acceptance of final payment by the Contractor, a Subcontractor or supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of the final Application for Payment.

ARTICLE 16 PROTECTION OF PERSONS AND PROPERTY

§ 16.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- **.1** employees on the Work and other persons who may be affected thereby;
- **.2** the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- **.3** other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation, or replacement in the course of construction.

The Contractor shall comply with, and give notices required by, applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons and property and their protection from damage, injury, or loss. The Contractor shall promptly remedy damage and loss to property caused in whole or in part by the Contractor, a Subcontractor, a sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 16.1.2 and 16.1.3. The Contractor may make a claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 9.15.

§ 16.2 Hazardous Materials and Substances

§ 16.2.1 The Contractor is responsible for compliance with the requirements of the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents, and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 16.2.2 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area, if in fact, the material or substance presents the risk of bodily injury or death as described in Section 16.2.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 16.2.3 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

ARTICLE 17 INSURANCE AND BONDS

§ 17.1 Contractor's Insurance

§ 17.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in this Section 17.1 or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the insurance required by this Agreement from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 18.4, unless a different duration is stated below:

« » Required Insurances are to be provided and maintained as specified in Document 02113 – Instructions to Bidders, Section 1.2,G.

§ 17.1.2 Commercial General Liability insurance for the Project written on an occurrence form with policy limits of not less than « » ($ « ») each occurrence, « » ($ « ») general aggregate, and « » ($ « ») aggregate for products-completed operations hazard, providing coverage for claims including

.1 damages because of bodily injury, sickness or disease, including occupational sickness or disease, and death of any person;

.2 personal and advertising injury;

.3 damages because of physical damage to or destruction of tangible property, including the loss of use of such property;

.4 bodily injury or property damage arising out of completed operations; and

.5 the Contractor's indemnity obligations under Section 9.15.

§ 17.1.3 Automobile Liability covering vehicles owned by the Contractor and non-owned vehicles used by the Contractor, with policy limits of not less than « » ($ « ») per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance, and use of those motor vehicles along with any other statutorily required automobile coverage.

§ 17.1.4 The Contractor may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided such primary and excess or umbrella insurance policies result in the same or greater coverage as those required under Section 17.1.2 and 17.1.3, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers.

§ 17.1.5 Workers' Compensation at statutory limits.

§ 17.1.6 Employers' Liability with policy limits not less than « » ($ « ») each accident, « » ($ « ») each employee, and « » ($ « ») policy limit.

§ 17.1.7 If the Contractor is required to furnish professional services as part of the Work, the Contractor shall procure Professional Liability insurance covering performance of the professional services, with policy limits of not less than « » ($ « ») per claim and « » ($ « ») in the aggregate.

§ 17.1.8 If the Work involves the transport, dissemination, use, or release of pollutants, the Contractor shall procure Pollution Liability insurance, with policy limits of not less than « » ($ « ») per claim and « » ($ « ») in the aggregate.

§ 17.1.9 Coverage under Sections 17.1.7 and 17.1.8 may be procured through a Combined Professional Liability and Pollution Liability insurance policy, with combined policy limits of not less than « » ($ « ») per claim and « » ($ « ») in the aggregate.

§ 17.1.10 The Contractor shall provide certificates of insurance acceptable to the Owner evidencing compliance with the requirements in this Section 17.1 at the following times: (1) prior to commencement of the Work; (2) upon renewal

or replacement of each required policy of insurance; and (3) upon the Owner's written request. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment and thereafter upon renewal or replacement of such coverage until the expiration of the period required by Section 17.1.1. The certificates will show the Owner as an additional insured on the Contractor's Commercial General Liability and excess or umbrella liability policy.

§ 17.1.11 The Contractor shall disclose to the Owner any deductible or self- insured retentions applicable to any insurance required to be provided by the Contractor.

§ 17.1.12 To the fullest extent permitted by law, the Contractor shall cause the commercial liability coverage required by this Section 17.1 to include (1) the Owner, the Architect, and the Architect's Consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions for which loss occurs during completed operations. The additional insured coverage shall be primary and non-contributory to any of the Owner's general liability insurance policies and shall apply to both ongoing and completed operations. To the extent commercially available, the additional insured coverage shall be no less than that provided by Insurance Services Office, Inc. (ISO) forms CG 20 10 07 04, CG 20 37 07 04, and, with respect to the Architect and the Architect's Consultants, CG 20 32 07 04.

§ 17.1.13 Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by this Section 17.1, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 17.1.14 Other Insurance Provided by the Contractor
(List below any other insurance coverage to be provided by the Contractor and any applicable limits.)

Coverage	Limits

§ 17.2 Owner's Insurance
§ 17.2.1 Owner's Liability Insurance
The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

§ 17.2.2 Property Insurance
§ 17.2.2.1 The Owner shall purchase and maintain, from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located, property insurance written on a builder's risk "all-risks" completed value or equivalent policy form and sufficient to cover the total value of the entire Project on a replacement cost basis. The Owner's property insurance coverage shall be no less than the amount of the initial Contract Sum, plus the value of subsequent Modifications and labor performed or materials or equipment supplied by others. The property insurance shall be maintained until Substantial Completion and thereafter as provided in Section 17.2.2.2, unless otherwise provided in the Contract Documents or otherwise agreed in writing by the parties to this Agreement. This insurance shall include the interests of the Owner, Contractor, Subcontractors, and Sub-subcontractors in the Project as insureds. This insurance shall include the interests of mortgagees as loss payees.

§ 17.2.2.2 Unless the parties agree otherwise, upon Substantial Completion, the Owner shall continue the insurance required by Section 17.2.2.1 or, if necessary, replace the insurance policy required under Section 17.2.2.1 with property insurance written for the total value of the Project that shall remain in effect until expiration of the period for correction of the Work set forth in Section 18.4.

§ 17.2.2.3 If the insurance required by this Section 17.2.2 is subject to deductibles or self-insured retentions, the Owner shall be responsible for all loss not covered because of such deductibles or retentions.

§ 17.2.2.4 If the Work involves remodeling an existing structure or constructing an addition to an existing structure, the Owner shall purchase and maintain, until the expiration of the period for correction of Work as set forth in

Section 18.4, "all-risks" property insurance, on a replacement cost basis, protecting the existing structure against direct physical loss or damage, notwithstanding the undertaking of the Work. The Owner shall be responsible for all co-insurance penalties.

§ 17.2.2.5 Prior to commencement of the Work, the Owner shall secure the insurance, and provide evidence of the coverage, required under this Section 17.2.2 and, upon the Contractor's request, provide a copy of the property insurance policy or policies required by this Section 17.2.2. The copy of the policy or policies provided shall contain all applicable conditions, definitions, exclusions, and endorsements.

§ 17.2.2.6 Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any insurance required by this Section 17.2.2, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 17.2.2.7 Waiver of Subrogation

§ 17.2.2.7.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by this Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this Section 17.2.2.7 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 17.2.2.7.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 17.2.2.7.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 17.2.2.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements, written where legally required for validity, the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 17.2.3 Other Insurance Provided by the Owner

(List below any other insurance coverage to be provided by the Owner and any applicable limits.)

Coverage	Limits

§ 17.3 Performance Bond and Payment Bond

§ 17.3.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in the Contract Documents on the date of execution of the Contract.

§ 17.3.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

ARTICLE 18 CORRECTION OF WORK

§ 18.1 The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed, or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense, unless compensable under Section A.1.7.3 in Exhibit A, Determination of the Cost of the Work.

§ 18.2 In addition to the Contractor's obligations under Section 9.4, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 15.6.3, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty.

§ 18.3 If the Contractor fails to correct nonconforming Work within a reasonable time, the Owner may correct it in accordance with Section 8.3.

§ 18.4 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 18.5 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Article 18.

ARTICLE 19 MISCELLANEOUS PROVISIONS

§ 19.1 Assignment of Contract

Neither party to the Contract shall assign the Contract without written consent of the other, except that the Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

§ 19.2 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 21.6.

§ 19.3 Tests and Inspections

Tests, inspections, and approvals of portions of the Work required by the Contract Documents or by applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities shall be made at an appropriate time. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 19.4 The Owner's representative:
(Name, address, email address and other information)

« »

« »
« »
« »
« »
« »

§ 19.5 The Contractor's representative:
(Name, address, email address and other information)

« »
« »
« »
« »
« »
« »

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

ARTICLE 20 TERMINATION OF THE CONTRACT

§ 20.1 Termination by the Contractor

If the Architect fails to certify payment as provided in Section 15.4.1 for a period of 30 days through no fault of the Contractor, or if the Owner fails to make payment as provided in Section 4.1.3 for a period of 30 days, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.

§ 20.2 Termination by the Owner for Cause

§ 20.2.1 The Owner may terminate the Contract if the Contractor

- **.1** repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- **.2** fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- **.3** repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- **.4** otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 20.2.2 When any of the reasons described in Section 20.2.1 exists, the Owner, upon certification by the Architect that sufficient cause exists to justify such action, may, without prejudice to any other remedy the Owner may have and after giving the Contractor seven days' notice, terminate the Contract and take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor and may finish the Work by whatever reasonable method the Owner may deem expedient. Upon request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 20.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 20.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 20.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Architect, upon application, and this obligation for payment shall survive termination of the Contract.

§ 20.3 Termination by the Owner for Convenience

The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause. The Owner shall pay the Contractor for Work executed; and costs incurred by reason of such termination, including costs attributable to termination of Subcontracts; and a termination fee, if any, as follows:

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

« »

ARTICLE 21 CLAIMS AND DISPUTES

§ 21.1 Claims, disputes, and other matters in question arising out of or relating to this Contract, including those alleging an error or omission by the Architect but excluding those arising under Section 16.2, shall be referred initially to the Architect for decision. Such matters, except those waived as provided for in Section 21.11 and Sections 15.7.3 and 15.7.4, shall, after initial decision by the Architect. If not resolved by the architects decision be governed by paragraph 21.7 herein.

§ 21.2 Notice of Claims

§ 21.2.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 18.2, shall be initiated by notice to the Architect within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 21.2.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 18.2, shall be initiated by notice to the other party.

§ 21.3 Time Limits on Claims

The Owner and Contractor shall commence all claims and causes of action against the other and arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in this Agreement whether in contract, tort, breach of warranty, or otherwise, within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 21.3.

§ 21.4 If a claim, dispute or other matter in question relates to or is the subject of a mechanic's lien, the party asserting such matter may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 21.5 The parties shall endeavor to resolve their disputes by mediation.

§ 21.6 If the parties agree in writing any claim, dispute or disagreement may be resolved by non-binding mediation.

§ 21.7 After the proceedings specified in Paragraph 21.1 have been completed or after the architect has rendered his/her decision, either party shall have the right to bring a civil lawsuit against the other or any other person or entity they think may be liable to them.

§ 21.8 Venue – The parties agree that this contract was and is to be performed in Greene County New York State, and for the convenience of the parties and witnesses, all lawsuits must be venued in a court of appropriate Jurisdiction within Green County.

§ 21.9 Jury Waiver – Each of the parties to this contract agree to waive a Jury in any action commenced concerning any matter contained in this agreement.

§ 21.10 Continuing Contract Performance

Pending final resolution of a Claim, except as otherwise agreed in writing, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 21.11 Waiver of Claims for Consequential Damages

The Contractor and Owner waive claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

.1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

.2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 20. Nothing contained in this Section 21.11 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

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

OWNER *(Signature)*	**CONTRACTOR** *(Signature)*
« »« »David Schneider, Mayor Village of Tannersville, New York	« »« »
(Printed name and title)	*(Printed name and title)*

DOCUMENT 006000.2 – PERFORMANCE BOND

PART 1 – GENERAL

1.1 Performance Bond

A. AIA Document A312-2010 “Performance Bond” is hereby incorporated into the procurement and contract documents by reference.
   1. A draft copy of AIA Document A101-2010 “Performance Bond” is included in this project manual.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF DOCUMENT 006000.2

DRAFT

AIA® Document A312™ – 2010

Performance Bond

CONTRACTOR:
(Name, legal status and address)

« »« »
« »

SURETY:
(Name, legal status and principal place of business)

« »« »
« »

OWNER:
(Name, legal status and address)

« »« » Village of Tannersville
« » 1 Park Lane
P.O.Box 967
Tannersville, New York

CONSTRUCTION CONTRACT
Date: « »
Amount: $ « »
Description:

« » Gooseberry Creek Revitalization Strategy Phase II
« » RIP Van Winkle Lake Park
Contract for General Construction
DOS Project NO. C1001671

BOND
Date:
(Not earlier than Construction Contract Date)
« »
Amount: $ « »
Modifications to this Bond: [« X »] None [« »] See Section 16

CONTRACTOR AS PRINCIPAL		**SURETY**	
Company:	*(Corporate Seal)*	Company:	*(Corporate Seal)*
Signature:		Signature:	
Name and Title:	« »« »	Name and Title:	« »« »

(Any additional signatures appear on the last page of this Performance Bond.)

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or **BROKER:**

« »
« »
« »

OWNER'S REPRESENTATIVE:
(Architect, Engineer or other party:)

« » Studio A Landscape Architecture and Engineering, D.P.C.
« »38 High Rock Avenue, Suite 3
« » P.O. Box 272
« » Saratoga Springs, NY 12866
« » Attn: Kirsten Catellier, ASLA
« »

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

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§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after

.1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;

.2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

.3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

§ 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

§ 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the

Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

.2 additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and

.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

§ 9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

§ 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

§ 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 14 Definitions

§ 14.1 Balance of the Contract Price. The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

§ 14.2 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 Contractor Default. Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 14.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 Modifications to this bond are as follows:

« »

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL		**SURETY**	
Company:	*(Corporate Seal)*	Company:	*(Corporate Seal)*
Signature:		Signature:	
Name and Title:	« »« »	Name and Title:	« »« »
Address:	« »	Address:	« »

DOCUMENT 006000.3 – PAYMENT BOND

PART 1 – GENERAL

1.1 Agreement

A. AIA Document A312-2010, “Payment Bond,” is hereby incorporated into the procurement and contract documents by reference.
   1. A draft copy of AIA Document A312-2010, “Payment Bond,” is included in this project manual.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF DOCUMENT 006000.3

DRAFT

AIA® Document A312™ – 2010

Payment Bond

CONTRACTOR:
(Name, legal status and address)

« »« »
« »

SURETY:
(Name, legal status and principal place of business)

« »« »
« »

OWNER:
(Name, legal status and address)

« »« » Village of Tannersville
« »1 Park Lane
P.O.Box 967
Tannersville, New York

CONSTRUCTION CONTRACT
Date: « »
Amount: $ « »
Description:
(Name and location)

« » Gooseberry Creek Revitalization Strategy Phase II
« » RIP Van Winkle Lake Park
Contract for General Construction
DOS Project NO. C1001671

BOND
Date:
(Not earlier than Construction Contract Date)
« »
Amount: $ « »
Modifications to this Bond: « X » None « » See Section 18

CONTRACTOR AS PRINCIPAL
Company: *(Corporate Seal)*

Signature: _____
Name and Title: « »« »

SURETY
Company: *(Corporate Seal)*

Signature: _____
Name and Title: « »« »

(Any additional signatures appear on the last page of this Payment Bond.)

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or **BROKER:**

« »
« »
« »

OWNER'S REPRESENTATIVE:
(Architect, Engineer or other party:)

« » Studio A Landscape Architecture and Engineering, D.P.C.« » 38 High Rock Avenue, Suite 3
« » P.O. Box 272
« » Saratoga Springs, NY 12866
« » Attn: Kirsten Catellier, ASLA
« »

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

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§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.

§ 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

§ 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:

§ 5.1 Claimants, who do not have a direct contract with the Contractor,

- **.1** have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
- **.2** have sent a Claim to the Surety (at the address described in Section 13).

§ 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).

§ 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.

§ 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

§ 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

§ 7.2 Pay or arrange for payment of any undisputed amounts.

§ 7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

§ 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

§ 10 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

§ 11 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

§ 14 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

§ 16 Definitions

§ 16.1 Claim. A written statement by the Claimant including at a minimum:

- **.1** the name of the Claimant;
- **.2** the name of the person for whom the labor was done, or materials or equipment furnished;
- **.3** a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- **.4** a brief description of the labor, materials or equipment furnished;
- **.5** the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- **.6** the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- **.7** the total amount of previous payments received by the Claimant; and
- **.8** the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

§ 16.2 Claimant. An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

§ 16.3 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

§ 16.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 16.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

§ 17 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 18 Modifications to this bond are as follows:

« »

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL		**SURETY**	
Company:	*(Corporate Seal)*	Company:	*(Corporate Seal)*
Signature:		Signature:	
Name and Title:	« »« »	Name and Title:	« »« »
Address:	« »	Address:	« »

DOCUMENT 0060000.4 – CERTIFICATES OF OWNER'S ATTORNEY

I, the undersigned, _____ the duly authorized and acting legal representative of the Village of Tannersville, do hereby certify as follows

I have examined the attached contract(s) and performance and payment bond(s) and the manner of execution thereof, and I am of the option that each of the aforesaid agreements are adequate and have been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority to execute said agreements on behalf of the respective parties names thereon; and that the foregoing agreements constitute valid and legally binding obligations upon the parties executing the same in accordance with terms, conditions, and provisions thereof.

END OF DOCUMENT 006000.4

DOCUMENT 006000.5 – SUPPLEMENTS TO BOND FORMS

IN WITNESS WHEREOF, this instrument is executed in a number of counterparts equal to the number of executed Agreements, each counterpart of which shall be deemed an original, and dated as of the _____ day of _____ in the year 2023 (must be same or later than date of Agreement).

PRINCIPAL: _____
(Print or type company name)

BY: _____ _____
(signature) (print individual's name & title)

Attest (witness):

_____
(signature)

_____
(name & title) (Corporate Seal)

Address of Principal: _____

_____

If Contractor (PRINCIPAL) is a partnership, all partners must sign.

If Contractor (PRINCIPAL) is a corporation, a duly authorized officer, agent, or attorney-in-fact must sign.

If Contractor (PRINCIPAL) is a joint venture, each joint venture must sign.

SURETY: _____
(Print or type company name)

BY: _____ _____
(signature) (print individual's name & title)

Attest (witness):

_____
(signature)

_____
(name & title) (Corporate Seal)

Address of Surety: _____

_____

Surety Company must be licensed to conduct business in the State where the Project is located and must appear on the Treasury Department's most current list (Circular 570 as amended), all in accordance with Article 5 of the General Conditions.

Each executed bond shall be accomplished by the following:

1. Appropriate acknowledgments of the respective parties (see next several pages).

2. Surety Company data as listed on the last page of this section, and to be attached thereto.

CERTIFICATE OF ACKNOWLEDGEMENT – CONTRACTOR

INDIVIDUAL

State of _____

SS:

County of _____

On this _____ day of _____, 2023, before me personally appears _____, to me known, who being duly sworn by me, deposes, and says that (he/she) is the person described in and who executed the foregoing instrucment, and acknowledges to me that (he/she) executed the same.

_____

(signature of Notary Public) (Notary Stamp)

CERTIFICATE OF ACKNOWLEDGEMENT – CONTRACTOR

PARTNERSHIP

State of _____

SS:

County of _____

On this _____ day of _____, 2023, before me personally appears _____, to me known, who being duly sworn by me, deposes, and says that (he/she) is the person described in and who executed the foregoing instrument, and acknowledges to me that (he/she) executed the same.

_____

(signature of Notary Public) (Notary Stamp)

CERTIFICATE OF ACKNOWLEDGEMENT – CONTRACTOR

CORPORATION

State of _____

SS:

County of _____

On this _____ day of _____, 2023, before me personally appears _____, to me known, who being duly sworn by me, deposes, and says that (he/she) resides in

_____

(City/Town/Village, County, State)

That (he/she) is the _____ of _____, the Corporation described in and which executed the foregoing instrument; that (he/she) knows the seal of said Corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said Corporation; and the (he/she) executed the said instrument on behalf of said Corporation by like order.

_____

(signature of Notary Public)

(Notary Stamp)

CERTIFICATE OF ACKNOWLEDGEMENT – CONTRACTOR

JOINT VENTURE

State of _____

SS:

County of _____

On this _____ day of _____, 2023, before me personally appears the following:

_____ _____
(name) (residing in City/Town/Village, County, State)

_____ _____

_____ _____

_____ _____

To me known, who being duly sworn by me, deposes and say that they reside at the locations indicated above; that they are the

Parties to the Joint Venture of _____

_____

That they are the parties described in and who executed the foregoing instrument, and acknowledge to me that they executed the same on behalf of said Joint Venture.

_____
(signature of Notary Public) (Notary Stamp)

CERTIFICATE OF ACKNOWLEDGEMENT – SURETY COMPANY

State of _____

SS:

County of _____

On this _____ day of _____, 2023, before me personally appears _____, to me known, who being duly sworn by me, deposes, and says that (he/she) resides in

_____

(City/Town/Village, County, State)

That (he/she) is the _____ of _____, the Company described in and which executed the foregoing instrument; that (he/she) knows the seal of said Company; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said Company; and the (he/she) executed by said Company and dated _____, which said power has never been revoiked, and is still in force and effect, and that the said Company has received from the

_____

(title of official)

Of the State of _____, a certificate of solvency and of its sufficiency as surety of guarantor under the laws of said State, and that such certificate has not been revoked.

_____

(signature of Notary Public)

(Notary Stamp)

SURETY COMPANY DATA

Attach here the following:

1. POWER OF ATTORNEY – duly certified copy of Power of Attorney or other certificate of authority when bond is executed by agent, officer, or other representative of Surety.

2. POWER OF ATTORNEY AUTHORIZATION – duly certified extract from by-laws of resolutions of Surety under which Power of Attorney or other certificate of authority of its agent, officer, or other representative was issued.

3. FINANCIAL STATEMENT – certified copy of latest published financial statement of assets and liabilities of Surety.

END OF DOCUMENT 006000.5

DOCUMENT 006000.6 – CERTIFICATES OF INSURANCE

Attach Insurance Certificates Here

END OF DOCUMENT 006000.6

DOCUMENT 006000.7 – NOTICE TO PROCEED

Owner:	Owner's Contract No.:
Contractor:	Contractor's Project No.:
Engineer:	Engineer's Project No.: 21061
Project:	Contract Name:
	Effective Date of Contract:

TO CONTRACTOR:

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on _____, 2023.

On that date, Contractor shall start performing its obligations under the Contract Documents. No work shall be done at the Site prior to such date. In accordance with the Agreement. The date of substantial completion is October 23, 2023 and final completion is November 6, 2023.

Before starting any Work at the Site, Contractor must comply with the following:

(Note any access limitations, security procedures, or other restrictions)

_____

Owner:

Authorized Signature

By: _____

Title: _____

Date Issued: _____

Copy: Landscape Architect/Engineer

END OF DOCMENT 006000.7

DIVISION 01 – GENERAL REQUIREMENTS

DOCUMENT 011000 – GENERAL CONDITIONS

PART 1

1.1 SUMMARY

A. This Section Includes a summary of the Work of the Contract, including a description of the scope of the Work and general requirements governing the execution of the Work such as responsibilities for project meetings, scheduling of work, field surveying, testing and inspections, submittals, RFI procedures, project closeout and cutting and patching.

1.2 Work Covered by Contract Documents

A. Project Identification: Project consists of all labor, materials, equipment, appliances, services, and incidentals necessary for layout, Installing, and performing the Village of Tannersville Gooseberry Creek Revitalization Strategy: Implementation Phase II, Rip Van Winkle Lake Park, 33 Upper Lake Road, Tannersville, NY, 12485 as shown in the drawings and described in the Specifications.

B. Landscape Architect and Engineer Identification: The Contract Documents were prepared for the Project by Studio A Landscape Architecture + Engineering, DPC who shall act as Owner's Representative during the Project.

C. Owner Identification: The Owner is the Village of Tannersville, Greene County, NY

1.3 Contracts

A. The Work of this Project will be one (1) Contract

    1. Contract For General Construction Work

B. Responsibilities assigned to the Prime Contractor and the scope of the Work included in the contract is clearly identified in the Drawings and Specifications.

C. One set of Documents is issued covering all components of the project. The Prime Contractor shall review all drawings and specifications for complete understanding and knowledge of the Work.

1.4 Scope Of Work – One Prime Contract

A. The Prime Contractor is responsible for all of Procurement and Contracting requirements (Division 00), General Requirements (Division 01), and all work specifically indicated, including the following:

    1. General Construction Work: Division 02, Division 26, and Division 31 through 33 except where specifically noted “by others”, and as specifically required to complete the work of the general construction.

1.5 Work Not Included

A. The following items are not included in the Work covered by the Contract:

    1. Any items marked “NIC” or “Not in Project” on drawings.
    2. Any item marked “By Owner” on Drawings

1.6 Alternates – As Accepted and Included in Contract

1.7 Unit Prices – As Accepted and Included in Contract

1.8 Work Schedule

A. Project Schedule: It is the intent of the Owner to award the Contracts for the Work on or about two weeks after receipt of bids. Immediately upon receipt of Notice of Award of Contract from Owner, Contractors shall begin preparing required bonds, insurance certificates and other required submittals. Work may be performed at the site only upon receipt of written authorization (Notice to Proceed) from Owner and after the approval of the required submissions. All work to be substantially completed by October 23, 2023 with final completion by November 6, 2023.

B. Construction Schedule: Contractor shall prepare a schedule for the Work that fits into the overall project schedule. Schedule shall indicate milestone dates for completion of each portion of the Work. Submit this schedule to the Landscape Architect and Engineer at the pre-construction conference.

    1. Construction schedule shall be in accordance with the project schedule identified in 1.8 A. above and show start, duration, and end of work elements and arrivals of long-lead items.

1.9 Phasing – No Project Phasing Proposed

1.10 Payment Procedures

A. Comply with requirements contained in Agreement Between the Owner and Contractor for payment preparation and submittal.

B. Payment Applications shall be on AIA Form G702

C. Schedule of Values: Prepare and submit a Schedule of Values allocating portions of the Contract Sum to various portions of the Work which will be used as the basis for reviewing Contractor's Applications for Payment.

1. Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.

2. Submit the Schedule of Values to Landscape Architect - Engineer at pre-construction conference.

3. Use the Project Manual table of contents as a guide to establish line Items for the Schedule of Values. Provide at least one line Item for each Specification Section.

4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide several line items for principal subcontract amounts, where appropriate.

1.11 Submittals Schedule

A. Preparation: Concurrent with preparation of Contractor's Construction Schedule, prepare and submit a complete Schedule of Submittals. arranged in chronological order by time frames required by construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.

1. Coordinate Submittals Schedule with Schedule of Values and Construction Schedule.

2. Submit complete Schedule of Submittals at preconstruction meeting, concurrent with Construction Schedule.

1.12 Project Meetings

A. Project progress meetings will be held at the project site at intervals as deemed necessary by the Landscape Architect - Engineer. Contractor shall attend all such meetings. Studio A Staff shall take the minutes and distribute them to all parties involved in the Work

B. Pre-Construction Meeting: The first job meeting will be scheduled at the issuance of the Notice to Proceed (NTP) This will be a kick-off meeting at the site and shall be attended by Contractor, Landscape Architect - Engineer, and Owner.

1. Contractor shall provide the proposed Schedule of Values to the Landscape Architect - Engineer at the Project Kick-Off meeting (first job meeting) along with a list of suppliers and subcontractors.

1.13 Use Of Site

A. Limits: Confine constructions operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work Is indicated.

B. Driveways and Entrances: Keep driveways and entrances serving premises adjacent to the area of work clear and available to adjacent landowners, the public, and emergency vehicles at all times.

C. Maintain access to buildings along South Main Street during normal working hours at all times.

D. Comply with Village ordinances at all times.

E. Provide traffic control personnel and facilities as required to maintain South Street in an open condition for traffic flow in both directions at all times. Contractor employee parking is not allowed on South Main Street or any adjacent village street.

F. Damages: Promptly repair damages caused to existing buildings or adjacent facilities by work of the Contract to a good-as-new condition acceptable to the Owner.

G. Coordinate all utility shutdowns and crossovers with the Owner, schedule during off-hours only.

1.14 Occupancy Requirements

A. Comply with Owner's standards for construction projects as follows:

1. Interaction with Town employees and the public is strictly forbidden.

2. Use of offensive or inappropriate language is strictly forbidden.

3. The use of radios, tape and CD players Is prohibited on the site.

4. Smoking and consumption of alcoholic beverages is prohibited on the site.

1.15 Administrative and Supervisory Personnel

A. Contractor shall provide all administrative and supervisory personnel as may be required for the efficient progress of the work.

B. Contractor shall provide full-time Field Supervisor for the Work who is qualified and empowered to make field changes as they become necessary in the execution of the Work.

1.16 Submittals

A. Submittals include samples, shop drawings, and product data. Shop drawings and product data shall be submitted as electronic pdf files, samples shall be submitted in physical samples.

B. Landscape Architect - Engineer will review each submittal, make marks to indicate corrections or modifications required, and return it. Landscape Architect - Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows

1. Contractor may proceed with fabrication on "NO EXCEPTION TAKEN" or "MAKE CORRECTIONS NOTED" on shop drawings provided that the Contractor adheres to the corrections noted.

2. Contractor may not proceed with fabrication on shop drawings noted "REVISE AND RESUBMIT" or "REJECTED" until "NO EXCEPTION TAKEN" or "MAKE CORRECTIONS NOTED" stamp is received on resubmitted drawing.

C. Number of Copies Required: Submit one copy of electronic submittals and three sets of samples. Landscape Architect - Engineer will return annotated electronic file. Landscape Architect - Engineer will keep one set of samples and return one set to Contractor and one set to Owner's Rep. Maintain one copy or set of each approved submittal on site. Submit package of all approved submittals at project close-out.

D. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment. Mark each copy of each submittal to show which products and options are applicable. Strike extraneous information prior to submittal.

E. Shop Drawings: Prepare Project-specific Information, drawn accurately to scale. Do not base Shop Drawings on reproductions of standard printed data. Standard Information prepared without specific reference to the Project is not considered a Shop Drawing.

1. Field Measurements: Verify field measurements prior to preparation of Shop Drawings. Indicate dimensions established by field measurement.

2. Wiring Diagrams: Show Field-Installed wiring, including power, signal, and control wiring. Differentiate between manufacturer-Installed and field-installed wiring.

F. 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, as appropriate.

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. 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.

4. Disposition: Maintain sets of approved samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

1.17 Requests For Information (RFI's)

A. General: All requests for Information or clarification shall be submitted to the Landscape Architect - Engineer in writing on the form provided by the Landscape Architect - Engineer. Contractor shall maintain a log of the status of each request and shall be prepared to discuss outstanding items at each progress meeting.

B. Procedure: Immediately on discovery of the need for Interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI In the form specified.

1. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with no response.

2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

C. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:

1. Names of Trade/Specialty Contractors affected and coordinated with.

2. Field dimensions and conditions, as appropriate.

3. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.

4. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.

D. Landscape Architect -Engineer's Action: Landscape Architect -Engineers will review each RFI, determine action required, and return it. Allow five working days minimum for Landscape Architect -Engineer’s response for each RFI.

1. Landscape Architect -Engineer’s action may include a request for additional information, in which case Landscape Architect -Engineer’s time for response will start again.

E. On receipt of Landscape Architect -Engineer’s action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Landscape Architect -Engineer within two days if Contractor disagrees with response.

F. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log at weekly job meetings.

1.18 Change in the work

A. Comply with requirements outlined in the General Conditions

B. Utilize Landscape Architect -Engineer’s standard forms, as follows, which are attached to this section.

1. Work Changes Bulletin Form (Document 011010)

2. Construction Change Directive Form (Document 011020)

3. Change Order Form (Document 011030)

1.19 Tests and Inspections

A. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor’s responsibility. Perform tests and inspections required of Contractor by authorities having jurisdiction, whether specified or not.

1. Where services are indicated as Contractor’s responsibility, engage a qualified testing agency to perform these quality - control services.

a. Contractor shall not employ the same entity engaged by Owner, unless agreed to in writing by Owner.

b. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility

2. Submit a certified written report, in duplicate, of each test and inspection service.

3. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct

B. Professional Engineer Qualifications: Where the services of a professional engineer are required by the Contract Documents, such services shall be performed by a professional engineer who is licensed and 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 to those indicated for this Project in material, design, and extent. 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 548; and with additional qualifications specified in Individual Sections; and where required by authorities having jurisdiction, that Is acceptable to authorities.

1.20 Construction Layout, Field Engineering and Surveying

A. Construction Layout: Engage a land surveyor to lay out the Work using accepted surveying practices.

1. Establish benchmarks and control points to set lines and levels of construction and elsewhere as needed to locate each element of Project.

2. Inform installers of lines and levels to which they must comply.

3. Check the location, level and plumb, of every major element as the Work progresses.

4. Locate and lay out site Improvements and control lines and levels for structures, and building foundations, including those required for electrical work.

5. Maintain a log of layout control work.

B. Field Engineering:

1. 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. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.

2. Final Property Survey: Engage a land surveyor to prepare a final property survey showing significant features (real property), including structures, site improvements and utilities, for Project. Include on the survey a certification, signed by land surveyor, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.

    a. Recording: At Substantial Completion, have the final property survey recorded by or with authorities having jurisdiction as the official "property survey."

C. Land Surveyor Qualifications: Where the services of a land surveyor are required by the Contract Documents, such services shall be performed by a professional land surveyor who is legally qualified to practice in New York State and who is experienced in providing land-surveying services of the kind indicated.

1.21 Temporary Facilities and Controls

A. Availability of Utilities on Site:

1. Water is available on site and may be used by Contractor at no charge. Provide hoses to connect into water hose bib if required for the Work.

2. Electricity is available on site and may be used by Contractor at no charge. Do not overload circuits. Provide extension cords if required for the Work. Provide portable generator if power above and beyond that available is required for the Work. Provide supplementary plug-in task lighting and special lighting necessary to perform the Work.

B. Parking and Staging Area: Contractor to limit worker parking, storage trailers, project trailers, portable toilets and material/equipment staging area to park site proper and Upper Lake Road. Upper Lake Road at intersection with South Main Street to be barricaded to allow for construction access only and signed to prohibit public entry.

C. Fire Extinguishers: Provide hand carried, portable, UL rated fire extinguishers with class and extinguishing agent as recommended by NFPA for exposures.

D. Self-Contained Toilet Units: General contractor shall provide single-occupant units of chemical, aerated recirculation, or combustion type; vented; fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material, one for men and one for women.

E. Trash Removal: Contractor and subcontractors shall provide their own dumpster; locate in staging area or other location acceptable with the Owner. Remove and dispose of all packaging materials, scrap, debris and construction waste generated on a weekly basis. Dispose of all materials legally, according to regulations

F. Storage/Staging: Contractor may provide a storage trailer in the staging area for temporary storage of materials, equipment and tools. Contractor is responsible for the security of his own tools, supplies and equipment.

G. Dewatering: Provide dewatering facilities for excavations.

H. Comply with general safety and security standards for construction projects as follows:

1. Store all construction materials in a safe and secure manner.

2. Comply with all OSHA rules and regulations for on-site safety.

I. Field Office: A temporary field office large enough to hold project meetings shall be provided by the General Contractor. Provide furnishings adequate to accommodate the project meetings. Locate in the staging area.

J. Project Sign: Fabricate and install project identification sign at South Main Street and Upper Lake Road in a location visible from South Main Street. Sign content, and design and size specific in Section 011040, “Project Sign.”

1.22 Cutting and Patching

A. Cut existing 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. Employ skilled workers to perform cutting and patching, minimize cutting and patching of work to greatest extent possible.

B. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations least likely to damage elements retained or adjoining construction. 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 possible. Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible. Restore exposed finishes of patched areas and extend finish restoration Into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

1.23 Project Closeout

A. Preliminary Procedures for Substantial Completion: Before requesting Inspection for determining Substantial Completion, complete the following. List items below that are incomplete in request.

1. Written summary of periodic site visits including photo-documentation (pre-consruction, during construction, and once the project is completed) and identification of any problems that need to be addressed. Punch list and construction completion estimates.

2. Prepare and submit Project Record Documents, operation and maintenance manuals and similar final record Information.

3. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.

4. Deliver salvaged materials to location designated by Owner. Submit inventory list of all such salvaged materials, if any.

5. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.

6. Submit changeover Information related to Owner's occupancy, use, operation, and maintenance.

7. Complete final cleaning requirements of the site and surrounding building surfaces.

8. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects. Correct improperly fitted components requiring adjustments. Advise Owner of pending insurance changeover requirements.

9. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.

10. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.

11. Prepare and submit damage or settlement surveys, if needed.

B. Inspection for Substantial Completion: Submit a written request for Inspection for Substantial Completion. Landscape Architect – Engineer will proceed with Inspection and will notify Contractor of Items that must be completed or corrected before certificate for Substantial Completion will be issued.

C. Preliminary Procedures for Final Completion: Before requesting final Inspection for determining date of Final Completion, complete the following:

1. Submit copy of Landscape Architect – Engineer 's Substantial Completion Inspection list of Items to be completed or corrected (punch list); state that each item has been completed or otherwise resolved for acceptance.

2. Submit evidence of final, continuing Insurance coverage complying with Insurance requirements.

3. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.

4. Submit the following AIA Documents fully filled out and executed:

    a. Contractor's Affidavit of Payment of Debts and Claims -AIA Document G706.

    b. Contractor's Affidavit of Release of Liens - AIA Document G706A.

    c. Waiver of Liens from all Subcontractors, materialmen, and suppliers.

    d. Consent of Surety to Final Payment - AIA Document C707.

5. Submit final request for payment with appropriate retainage, as specified in the Agreement Between the Owner and Contractor, and accounting of Change Orders. Submit Contractor's general one (1) year warranty covering all labor and materials.

6. Submit copies of all test results.

7. Submit copies of incident and insurance reports.

D. Inspection for Final Completion: Submit a written request for final inspection for acceptance. Landscape Architect – Engineer will either proceed with Inspection or notify Contractor of unfulfilled requirements. Landscape Architect – Engineer will prepare a final Certificate for Payment after inspection and concurrence by DOS that the work is complete or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

E. Project Record Documents:

1. Record Drawings: Maintain and submit one set of blue- or black-line white prints and one electronic copy of Contract Drawings and Shop Drawings marked up to show the actual installation where installation varies from that shown originally.

2. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications. Mark copy to indicate the actual product Installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

3. Record Product Data: Submit one copy of each Product Data submittal. Mark one set to Indicate the actual product Installation where installation varies substantially from that indicated in Product Data.

F. Warranties: Submit two complete sets of warranties as specified in Technical Specifications.

G. Final Cleaning: Clean Project site, yard, and grounds, in areas disturbed by construction activities of rubbish, waste material, litter, and other foreign substances. Clean exposed exterior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Remove debris and surface dust from limited access spaces, including roofs, and similar spaces. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Rake grounds. Leave Project area broom clean. Any errant grease or oil shall be thoroughly cleaned. Any marred surfaces repaired. Contractor shall be responsible for the items installed by him or items installed by others, fouled by their work. Facility should be fully ready for use in all regards.

1.24 Special Project Conditions

A. Daily Log: Contractor shall maintain a daily log on his own form, neatly executed and readable, indicating work done, work rejected, visitors, subs on site, incidents, difficulties encountered or delays, extra work and who authorized It, and any other information of interest to the Owner or Landscape Architect – Engineer.

B. Safety/Emergency Provisions: Contractor shall maintain on site all postings required by law. Contractor's Site Superintendent shall have a cell phone and the number will be given to the Owner and the Landscape Architect – Engineer. Contractors shall provide 24-hour emergency phone#, fax#, Email addresses, and other contact data to Owner and Landscape Architect – Engineer. The 24-hour emergency # must be manned 24 x 7 by somebody who can initiate a response to the site. Contractors shall provide any furniture, copiers, faxes, phones, or computers needed for the work

1. In the event of an accident call 911. Forward copies if incident and accident reports and insurance reports to Owner within 1 week of event, or upon their being generated.

C. Dig Safe: Contractors are responsible for verifying the locations of any underground services or utilities before digging and shall notify Utilities, Owner and Landscape Architect- Engineer prior to starting work on site.

1.25 Minority and women-owned Business Enterprises (MWBE) Participation

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

B. The Agency has established an overall goal of 30% for Minority and Women-Owned Business Enterprises ("MWBE") participation, 15% for Minority-Owned Business Enterprises ("MBE") participation and 15% for Women-Owned Business Enterprises ("WBE") participation (based on the current availability of qualified MBEs and WBEs).

C. For purposes of providing meaningful participation by MWBEs on the Contract and achieving the Contract Goals, Contractor should reference the directory of New York State Certified MBWEs Found at the following Internet address: http://www.esd.ny.gov/mwbe.html Additionally, Contractor is encouraged to contact the Division of Minority and Woman Business Development (518) 292-5250; or (212) 803-2414 to discuss additional methods of maximizing participation by MWBEs on the Contract.

D. Contractor must document and provide to the Village upon request "good faith efforts" pursuant to 5 NYCRR §142.8 to provide meaningful participation by MWBEs as subcontractors or suppliers in the performance of the Contract. In accordance with Section 316-a of Article 15-A and 5 NYCRR §142.13, the Contractor acknowledges that if Contractor is found to have willfully and intentionally failed to make good faith efforts to meet the established MWBE participation goals set forth In the Contract, such a finding constitutes a breach of contract and the Contractor shall be liable to the Agency for liquidated or other appropriate damages, as determined by the Agency.

E. Contractor shall be required to file Workforce Employment Utilization Reports ("Workforce Report") as required by the Agency. Contractor shall submit an MWBE Utilization Plan either prior to, or at the time of, the execution of the contract, which shall be used for the performance of MWBEs on the Contract pursuant to the prescribed MWBE goals. Failure to submit and/or use such MWBE Utilization Plan shall constitute a material breach of the terms of the Contract.

1.26 Payment/Accounting and Employment Requirements

A. Contractors shall comply with the latest NYSDOL requirements.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF DOCUMENT 011000

DOCUMENT 011010 – WORK CHANGES BULLETIN

WORK CHANGES BULLETIN

Gooseberry Creek Revitalization Strategy Implementation Phase II:

Rip Van Winkle Lake Park

Village of Tannersville, NY

Description:

Attachments:

Note: This is not a change order. A construction change directive or a direction to proceed with the work described in the proposed modifications will be issued by the Landscape Architect–Engineer as appropriate. One of the aforementioned shall be issued prior to any work proceeding or changes being made to the contract documents.

Issued by: _____

Signature: _____ Date: _____

DOCUMENT 011020 – CONSTRUCTION CHANGE DIRECTIVE

CONSTRUCTION CHANGE DIRECTIVE

Gooseberry Creek Revitalization Strategy Implementation Phase II:

Rip Van Winkle Lake Park

Village of Tannersville, NY

TO: DIRECTIVE#:

CONTRACT FOR: GENERAL CONSTRUCTION DATE:

CONTRACT DATE:

YOU ARE HEREBY DIRECTED TO:

- ☐ Promptly proceed with the work and submit an estimated price within seven (7) days
- ☐ Promptly submit an estimated price and schedule only within seven (7) days
- ☐ Promptly proceed with the work. This is for information only and has no impact on price or schedule
- ☐ Other

DESCRIPTION:

Purpose of work directive:

☐ Attachments:

Note: if a claim is made that the above changes(s) affect Contact Price or Contact Time, any claim for a change order based thereon will involve one of the following methods of determining the effect of the change(s) in accordance with the Contract Documents

Method of determining change in contract price:

- ☐ Time and Materials
- ☐ Unit Prices
- ☐ Cost of Work Plus Fixed Fee Lump Sum
- ☐ Other: _____

Method of determining change in contract time:

- ☐ Trade Contractor's Records
- ☐ Engineers Records
- ☐ Construction Manager's Records
- ☐ No Days Added to Master Schedule
- ☐ Other: _____

Estimated increase or decrease in Contact Price:

_____

If the change involves an increase, the estimated amount is not to be exceeded without further authorization with Contract Documents and Architect and/or Construction Manager approval.

Estimated increase or decrease in Contact Time:

_____

If the change involves an increase, the estimated time is not to be exceeded without further authorization. Time to be determined in accordance with Contract Documents and Architect and/or Construction Manager approval.

Response by: _____

Signature: _____ Date: _____

DOCUMENT 011030 – CHANGE ORDER FORM

CHANGE ORDER FORM

Gooseberry Creek Revitalization Strategy Implementation Phase II:

Rip Van Winkle Lake Park

Village of Tannersville, NY

TO: CHANGE ORDER #:

CONTRACT FOR: GENERAL CONSTRUCTION DATE:

CONTRACT DATE:

THE CONTRACT IS CHANGED AS FOLLOWS
DESCRIPTION OF CHANGE ORDER:

☐ Attachments: _____

Original Contract Sum: _____

Amount Contract Sum Will Be Increased by This Change Order: _____

The Contract Time Will Be Increased By _____ Days.

Note: This change order does not include changes in the Contract Sum, Contract Time or Guaranteed Maximum Price that have been authorized by Construction Change Directive until the cost and time have been agreed upon by both the Owner and Contractor, in which case a Change Order is excluded to supersede the Conclusion Change Directive.

Not VALID UNTIL SIGNED BY THE ARCHITECT, CONTRACTOR, AND OWNER.

Landscape Architect - Engineer:	Contractor:	Owner:
Studio A Landscape Architect - Engineer:	_____ Contractor	_____ Owner
38 High Rock Avenue – Suite 3 Saratoga Springs, NY 12866 Address	_____ Address	_____ Address
Studio A Signature	_____ Signature	_____ Signature
_____ Printed Name	_____ Printed Name	_____ Printed Name
_____ Date	_____ Date	_____ Date

SECTION 024001 – PROJECT SIGN

PART 1 - GENERAL

1.1 SUMMARY AND RELATED REQUIREMENTS

A. Drawings and general provisions of Contract, including Division 01 – General Requirements, apply to work of this section.

B. Refer to other sections of the specifications, drawings, and details to determine type and extent of work there is affecting the work of this section, whether or not such work is specifically mentioned in this section. It is the intent of this specification to include all labor and material required to complete this section whether or not it is clearly or explicitly shown.

C. Extent of Project Sign installation work is shown on the drawings and in this specification and includes, but is not limited to the following:

1. Project Identification and credits sign

D. Related Requirements:

1. Section 321330 – Concrete Walks, Pavilion Pads and Footings

PART 2 – PRODUCTS

2.1 PROJECT SIGN

A. The project sign will be provided to the contractor by the owner. The sign is printed on a 2’ X 4’ aluminum sign blank. The printing is silk screened on an adhesive vinyl, which is sealed to the blank. (Sample Sign Design Attached).

PART 3 – EXECUTION

3.1 INSTALLATION

A. Prior to the start of construction, the contractor shall install the sign in a prominent location as shown on the drawings (at the park entrance road at the intersection of South Main Street and Upper Lake Road). The sign shall remain in place for the duration of construction at this location.

B. Contractor may install the sign on the temporary chain link construction fence or on 4’ X 4’ freestanding posts (2).

C. Following completion of construction, contractor shall relocate the sign to a location proximate to the circular drop-off area and mount it on 4’ X 4’ free-standing posts as directed by the landscape architect.

D. The sign will remain in this location for the useful life of the improvements undertaken.

END OF SECTION 024001

DIVISION 02 – EXISTING CONDITIONS

SECTION 024115 – TEMPORARY EROSION AND SEDIMENT CONTROL

PART 1 – GENERAL

1.1 SUMMARY AND RELATED REQUIREMENTS

A. Drawings and general provisions of Contract, including Division 01 – General Requirements, apply to work of this section.

B. Refer to other sections of the specifications, drawings, and details to determine type and extent of work there is affecting the work of this section, whether or not such work is specifically mentioned in this section. It is the intent of this specification to include all labor and material required to complete this section whether or not it is clearly or explicitly shown.

C. Section Includes:

1. Prevention of erosion due to construction activities.

2. Prevention of sedimentation of waterways, open drainage ways, and storm and sanitary sewers due to construction activities.

3. Restoration of areas eroded due to insufficient preventive measures.

4. Compensation of owner for fines leveled by authorities having jurisdiction due to non-compliance by Contractor.

D. Related Requirements:

1. Section 024116 – Site Clearing

2. Section 312000 – Earth Moving

1.2 REFERENCE STANDARDS

A. New York Standards and Specifications for Erosion and Sediment Control, April 2005 by the New York State Department of Environmental Conservation

B. EPA (NPDES) – National Pollutant Discharge Elimination System (NPDES), Construction General Permit; current edition.

1.3 PERFORMANCE REQUIREMENTS

A. Comply with all requirements of the U.S. Environmental Protection Agency for erosion and sedimentation control, as specified for the National Pollutant Discharge Elimination System (NPDES), Phase I and II, under requirements for the 2010 Construction General Permit (CGP), whether the project is required by law to comply or not.

B. Comply with all requirements of the NYS Department of Environmental Conservation – State Pollution Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity, Permit No. GP -0-10-001, and Standards and Specifications for Erosion and Sediment Control.

C. Do not begin clearing, grading, or other work involving disturbance of ground surface cover until applicable permits have been obtained.

D. Timing: Put preventive measures in place as soon as possible after disturbance of surface cover and before precipitation occurs.

E. Storm Water Runoff: Control increased stormwater runoff due to disturbance of surface cover due to construction activities for this project.

1. Prevent runoff into storm and sanitary sewer systems, including open drainage channels, in excess of actual capacity or the amount allowed by authorities having jurisdiction, whichever or less.

2. Anticipate runoff volume due to the most extreme short-term and 24-hour rainfall events that might occur in 25 years.

F. Erosion on Site: Minimize wind, water, and vehicular erosion of soil on project site due to construction activities for this project.

1. Control movement of sediment and soil from temporary stockpiles of soil.

2. Prevent development of ruts due to equipment and vehicular traffic.

3. If erosion occurs due to non-compliance with these requirements, restore eroded areas at no cost to the Owner.

G. Erosion Off-Site: Prevent erosion of soil and deposition of sediment on other properties caused by water leaving the project site due to construction activities for this project.

1. Prevent windblown soil from leaving the project site.

2. Prevent tracking of mud onto public roads outside site.

3. Prevent mud and sediment from flowing onto sidewalks and pavements.

4. If erosion occurs due to non-compliance with these requirements, restore eroded areas at no cost to Owner.

H. Sedimentation of Waterways on Site: Prevent sedimentation of waterways on the project site, including rivers, streams, lakes, ponds, open drainage ways, storm sewers, and sanitary sewers.

1. If sedimentation occurs, Install or correct preventive measures immediately at no cost to Owner; remove deposited sediments; comply with requirements of authorities having jurisdiction.

2. If sediment basins are used as temporary preventive measures, pump dry and remove deposited sediment after each storm.

I. Sedimentation of Waterways Off-site; Prevent sedimentation of waterways of the project site including rivers, streams, lakes, ponds, open drainage ways, storm sewers, and sanitary sewers.

1. If sedimentation occurs, install or correct preventive measures immediately at no cost to Owner; remove deposited sediments; comply with requirements of authorities having jurisdiction.

J. Open Water: Prevent standing water that could become stagnant.

K. Maintenance: Maintain temporary preventive measures until permanent measures have been established.

1.4 SUBMITTALS

A. Certificate: Mill certificate for silt fence fabric attesting that fabric and factory seams comply with specified requirements, signed by legally authorized official of manufacturer; indicate actual minimum average roll values; identify fabric by roll identification numbers.

PART 2 PRODUCTS

2.1 MATERIALS

A. Mulch: All material should be reasonably free of undesirable seeds & coarse material, weeds, and other deleterious material. Use one of the following:

1. Straw

2. Wood waste, chips, or bark.

3. Wood fiber hydro-mulch or other sprayable products approved for erosion control.

4. Erosion control matting or netting.

B. Grass Seed For Temporary Cover:

1. Spring, summer, or early fall: Seed the area with ryegrass (annual and/or perennial) at 30 lbs. per acre (Approx. 0.7 lb./1000 SF).

2. Late fall or early winter: Seed certifies ‘Aroostook’ winter rye (cereal rye) at 100 lbs. per acre (2.5 lbs./1000 SF).

3. Sod where slope is 3:1 or greater as shown on grading and erosion control plans.

C. Silt Fence Fabric: Polypropylene geotextile resistant to common soil chemicals, mildew, and insects; non-biodegradable; in longest lengths possible; fabric including seams with the following minimum average roll lengths:

1. Average Opening Size: 30 U.S. Std. Sleeve, maximum, when tested in accordance with ASTM D 4751.

2. Permittivity: 0.05 sec^-1, minimum, when tested in accordance with ASTM D 4491.

3. Ultraviolet Resistance: Retaining at least 70 percent of tensile strength, when tested in accordance with AST D 4355 after 500 hours exposure.

4. Tensile Strength: 100 lb-f, minimum, in cross-machine direction; 124 lb-f, minimum, in machine direction, when tested in accordance with ASTM D 4632.

5. Elongation: 15 to 30 percent, when tested in accordance with ASTM D 4632.

6. Tear Strength: 55 lb-f, minimum, when tested in accordance with ASTM D 4533.

7. Color: Manufacturer's standard, with embedment and fastener lines preprinted.

8. Manufacturers:

a. TenCate; Mirafi 100x: www.tencate.com.

b. Or approved equal.

D. Silt Fence Posts: Minimum 3 feet long
1. Hardwood, 2 X 2 inches in cross-section

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine site and identify existing features that contribute to erosion resistance; maintain such existing features to the greatest extent possible

3.2 PREPARATION

A. Schedule work so that soil surfaces are left exposed for the minimum amount of time.

3.3 SCOPE OF PREVENTATIVE MEASURES

A. Construction Entrances: Traffic-bearing aggregate surface.

1. Width: as required; 12 feet, minimum, 24’ if single entrance to site.

2. Length: 50 feet minimum.

3. Provide at each construction entrance from public right-of-way.

4. Where necessary to prevent tracking of mud onto right-of-way, provide wheel washing area out of direct traffic lane, with a drain into sediment trap or basin.

B. Linear Sediment Barriers: Made of silt fences.

1. Provide linear sediment barriers:
    a. Along downhill perimeter edge of disturbed areas, Including soil stockpiles.

    b. Along the top of the slope or top bank of drainage channels and swales that traverse disturbed areas.

    c. Along the toe of cut slopes and fill slopes.

2. Space sediment barriers with the following maximum slope length upslope from barrier:
    a. Slope of Less Than 2 Percent: 100 feet.

    b. Slope Between 2 and 5 Percent: 75 feet.

    c. Slope Between 5 and 10 Percent: 50 feet.

    d. Slope Between 10 and 20 Percent: 25 feet.

    e. Slope Over 20 Percent: 15 feet.

C. Place inlet protection on all open drainage structures which receive or potentially could receive runoff from the project area.

D. Storm Drain Drop Inlet Sediment Traps: As detailed on drawings.

E. Temporary Splash Pads: Stone aggregate over filter fabric; size to suit application; provide at downspout outlets and stormwater outlets.

F. Soil Stockpiles: Protect using one of the following measures of the Erosion and Sediment Control Plan, as applicable:

1. Cover with polyethylene film, secured by placing soil on outer edges.

2. Cover with mulch at least 4 Inches thickness of pine needles, sawdust, bark, wood chips, or shredded leaves, or 6 inches of straw.

3. If soil is to be stockpiled for longer than 14 days, the stockpile shall be mulched and seeded.

G. Mulching: Use only for areas that may be subjected to erosion for less than 6 months.

1. Wood Waste: Use only on slopes 3:1 or flatter; no anchoring required.

H. Temporary Seeding: Use where temporary vegetated cover is required.

1. Any seeding method may be used that will provide uniform application of seed to the area and result in relatively good soil to seed contact.

2. Mulch the area with straw at 2 tons/acre (approx. 90 lbs./1,000 SF or 2 bales). Mulch anchoring will be required where wind or areas of concentrated water are of concern. Wood fiber hydro-mulch or other sprayable products approved for erosion control (nylon web or mesh) may be used if applied according to manufacturers' specifications. Caution Is advised when using nylon or other synthetic products. They may be difficult to remove prior to final seeding.

3.4 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 1–4-inch diameter stone or reclaimed or recycled concrete equivalent.

B. Silt Fences:

1. Store and handle fabric in accordance with ASTM D 4873.

2. Where slope gradient is less than 3:1 or barriers will be in place less than 6 months, use nominal 16-inch-high barriers with minimum 36-inch-long posts spaced at 6 feet maximum, with fabric embedded at least 4 inches in the ground.

3. Where the slope gradient Is steeper than 3:1 or barriers will be in place over 6 months, use nominal 28-inch-high barriers, minimum 48-inch-long posts spaced at 6 feet maximum, with fabric embedded at least 6 Inches in the ground.

4. Where slope gradient Is steeper than 3:1 and vertical height of slope between barriers is more than 20 feet, use nominal 32-inch-high barriers with woven wire reinforcement and steel posts spaced at 4 feet maximum, with fabric embedded at least 6 inches in the ground.

5. Install with top of fabric at nominal height and embedment as specified.

6. Embed bottom of fabric in a trench on the upslope side of fence, with 4 inches of fabric laid flat on bottom of trench facing upslope; backfill trench and compact.

7. Do not splice fabric width; minimize splices in fabric length; splice at post only, overlapping at least 18 inches, with extra post.

8. Fasten fabric to wood posts using one of the following:

    1. Four 3/4 Inch diameter, 1 inch long, 14 gage nails.

    2. Five 17-gage staples with 3/4-inch-wide crown and 1/2-inch legs.

9. Wherever runoff will flow around end of barrier or over the top, provide temporary splash pad or other outlet protection; at such outlets in the run of the barrier, make barrier not more than 12 inches high with post spacing not more than 4 feet.

C. Mulching Over Large Areas:

1. Dry Straw: Apply 2-1/2 tons per acre; anchor sufficiently.

2. Wood Waste: Apply 6 to 9 tons per acre; anchor sufficiently.

3. Erosion Control Matting: Comply with manufacturer's instructions.

D. Mulching Over Small and Medium Areas:

1. Dry Straw: Apply 4 to 6 inches depth.

2. Wood Waste: Apply 2 to 3 inches depth.

3. Erosion Control Matting: Comply with manufacturer's instructions.

E. Temporary Seeding:

1. When hydraulic seeder is used, seedbed preparation Is not required.

2. When surface soil has been sealed by rainfall or consists of smooth undisturbed cut slopes, and conventional or manual seeding is to be used, prepare seedbed by scarifying sufficiently to allow seed to lodge and germinate.

3. If temporary mulching was used on planting area but not removed, apply nitrogen fertilizer at 1 pound per 1,000 sq ft.

4. On soils of very low fertility, apply 10-10-10 fertilizer at rate of 12 to 16 pounds per 1,000 sq ft.

5. Incorporate fertilizer into soil before seeding.

6. Apply seed uniformly, if using drill or cultipacker seeders place seed 1 /2 to 1 inch deep.

7. Mulch the area with straw at 2 tons/acre (approx. 90 lbs./1,000 SF or 2 bales). Mulch anchoring will be required where wind or areas of concentrated water are of concern. Wood fiber hydro-mulch or other sprayable products approved for erosion control (nylon web or mesh) may be used if applied according to manufacturers' specifications. Caution is advised when using nylon or other synthetic products. They may be difficult to remove prior to final seeding.

8. Irrigate as required to thoroughly wet soil to depth that will ensure germination, without causing runoff or erosion.

9. Repeat Irrigation as required until grass is established.

3.5 MAINTENANCE

A. Inspect preventive measures weekly, and 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.

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 or when "bulges" develop in the silt fence.

3. Repair fences that are undercut by runoff or otherwise damaged, whether by runoff or other causes.

D. Clean out temporary sediment control structures weekly and relocate soil on site.

E. Place sediment in appropriate locations on-site; do not remove from site.

3.6 CLEAN UP

A. Remove temporary measures after permanent measures have been installed, unless permitted to remain by Landscape Architect- Engineer. Coordinate with Landscape Architect- Engineer prior to removal.

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 024115

SECTION 024116 - SITE CLEARING

PART 1 - GENERAL

1.1 SUMMARY AND RELATED REQUIREMENTS

A. Drawings and general provisions of Contract, including Division 01 – General Requirements, apply to work of this section.

B. Refer to other sections of the specifications, drawings, and details to determine type and extent of work there is affecting the work of this section, whether or not such work is specifically mentioned in this section. It is the intent of this specification to include all labor and material required to complete this section whether or not it is clearly or explicitly shown.

1. Section Includes: Clearing and removal of pavements, removal of topsoil, other such site improvements.

C. Related Requirements:

1. Section 024115 – Temporary Erosion and Sediment Control

2. Section 312000 – Earth Moving

1.2 DEFINITIONS

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

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

C. Topsoil: Top layer of the soil profile consists of existing native surface topsoil or existing in-places surface soil; the zone where plant roots grow. Its appearance is generally friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects larger than 1 inch in diameter; and free of weeds, roots, toxic materials, or other non-soil materials.

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

E. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction and indicated on Drawings.

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

1.3 MATERIAL OWNERSHIP

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

1.4 PROJECT CONDITIONS

A. Traffic

1. Conduct site clearing operations to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Do not close or obstruct streets, walks, or other occupied or used facilities without permission from authorities having jurisdiction.

B. Protection of Existing Improvements

1. Provide protection necessary to prevent damage to existing improvements indicated to remain in place.

2. Protect improvements on adjoining properties and on Owner's property.

3. Restore damaged improvements to their original condition, as acceptable to property owners.

C. Protection of Existing Trees and Vegetation

1. Protect existing trees and other vegetation indicated to remain in place against unnecessary cutting, breaking, or skinning of roots, skinning or bruising of bark, smothering of trees by stockpiling construction materials or excavated materials within drip line. Provide temporary guards to protect trees and vegetation to be left standing (if any) as shown on the drawings or as otherwise necessary.

D. Wetland Area

1. All wetland areas shall be survey-staked and silt fenced prior to any work on the site. No work shall be performed within the wetland areas. Any impacts to wetlands shall be at the contractor's responsibility. All reclamation including fines shall be the responsibility of the Contractor at no cost to the owner.

E. Utilities

1. Coordinate work with and coordinate clearance from utility companies. Notify the Underground Facilities Protective Organization 72 HOURS before start of any work. Phone (800)962-7962.

2. Unless they are shown to be removed, protect active utility lines shown on Contract Drawings or otherwise made known to Contractor prior to excavating. If damaged, repair or replace such utility lines at no additional cost to the Owner.

3. If active utility lines are encountered and are not shown on the Contract Drawings or otherwise made known to Contractor, take necessary steps promptly to assure that services will not be interrupted. If a service is interrupted by work performed under this Section, immediately restore service by restoring damaged utility at no additional cost to the Owner.

F. Protection of Persons and Property

1. Barricade open depressions and holes, which occur in the performance of this work. Post warning lights on property adjacent to, or with public access to the work site.

2. Operate warning lights during hours from dusk to dawn each day and as otherwise required.

3. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, staining, and other hazards created by operations under this Section.

G. De-Watering

1. Remove all water, including rainwater, encountered during performance of work under this Section to an approved location by pumps, drains and other approved methods.

H. Dust Control

1. Control dust on and near work, and on and near off site areas.

I. Temporary Erosion and Sedimentation Control

1. Do not commence site clearing operations until temporary erosion and sedimentation control and plant-protection measures are in place as specified in Section 024115 – Temporary Erosion and Sediments Control.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Mirafi 100X or approved equal silt fence.

PART 3 – EXECUTION

3.1 GENERAL

A. All work shall be performed in accordance with the approved Erosion and Sediment Control Plans as indicated on the Drawings.

B. Remove trees, shrubs, grass and other vegetation, improvements, or obstructions as required to permit installation of new construction. Remove similar items elsewhere on site or premises as specifically indicated. “Removal” includes digging out and off-site disposing of all such materials.

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

D. The Contractor shall place silt fence or orange construction fencing around the entire limits of all wetland areas to remain.

3.2 EXECUTION

A. Temporary Erosion and Sedimentation Control

1. Provide temporary erosion and sedimentation-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to erosion-and sedimentation-control Drawings and requirements of authorities having jurisdiction as specified in Section 024115 – Temporary Erosion and Sediment Control.

B. Existing Utilities

1. Locate, identify, disconnect, and seal or cap utilities indicated to be removed or abandoned in place. Arrange with utility companies to shut off indicated utilities.

2. Locate, identify, and disconnect utilities indicated to be abandoned in place.

3. Interrupting Existing Utilities. Do not interrupt utilities serving facilities occupied by Owner or others, unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated. Do not proceed with utility interruptions without Civil Engineer or Landscape Architect’s written permission.

C. Cleating and Grubbing

1. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.

2. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.

3. Completely grind down stumps and remove roots larger than 6” in diameter, obstructions, and debris to a depth of 18 inches below exposed subgrade.

4. Use only hand methods or air spade for grubbing within protection zones.

5. Chip removed tree branches and dispose of off-site.

6. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.

7. Place fill material in horizontal layers not exceeding a loose depth of 6 inches and compact each layer to a density equal to adjacent original ground.

D. Topsoil Stripping

1. Remove sod and grass before stripping topsoil.

2. Strip topsoil to whatever depths encountered in a manner to prevent intermingling with underlying subsoil or other waste materials.

3. Remove subsoil and nonsoil materials from topsoil, including clay lumps, gravel, and other objects larger than ½ inches in diameter; trash, debris, weeds, roots, and other waste materials.

4. Stockpile topsoil away from edge of excavation in location indicated on the Drawings without intermixing with subsoil or other materials. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust and erosion by water as shown on the drawings.

5. Do not stockpile topsoil within protection zones.

6. Dispose of surplus topsoil. Surplus topsoil is that which exceeds quantity indicated to be stockpiled or reused.

E. Removal of Improvements

1. Remove existing above-grade and below-grade improvements as indicated on the Drawings and as necessary to facilitate new construction.

2. Sawcut pavement at edges between pavement to remain and existing pavement to be demolished and removed, for utility lines and road curb cuts.

F. Diversion of Streams and Drainage Ways

1. If streams, drainage ways, or wet areas are observed, divert out of construction area. Also protect neighboring properties from outfall.

G. Disposal of Waste Materials

1. Burning is not permitted on Owner's property.

2. Remove indicated improvements and waste material from Owner's property and dispose of in accordance with governing authorities. Excess soil shall remain on site and will be contoured to create berms as directed by Landscape Architect or returned to owner for use elsewhere.

END OF SECTION 024116

SECTION 260010 – ELECTRICAL WORK GENERAL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract including all General Conditions, Supplementary Conditions, Division 1 specification sections as well as Information to Bidders requirements that are included in the project documents, apply to the work of this Contract.

1.02 ALLOWANCES

A. Refer to Division 1 specifications for allowances, required as part of this Contract.

1.03 INTENT

A. The intent of the drawings and these specifications is to provide all systems complete and operative. Whether indicated on the drawings and/or included in the specification or not, provide all materials, equipment and labor usually furnished with such systems.

1.04 DEFINITIONS

As Called For	Materials, equipment including the execution specified/shown in the contract documents.
Code Requirements	Minimum requirements.
Concealed	Work installed in pipe and duct shafts, chases or recesses, inside walls, above ceilings, in slabs or below grade.
Design Make	Indicates minimum requirements for equipment.
ERL	Existing to be relocated. (see definition of relocate).
EXR	Existing to remain. Make connections to maintain circuit.
Exposed	Work not identified as concealed.
Acceptance	Owner acceptance of the project from Contractor upon certification by Owner's Representative.
Furnished by Others	Receive delivery at job site or where called for and install.
Inspection	Visual observations by Owner's site Representative.
Install	Mount or set equipment, device or fixture and make electric connections.
Labeled	Refers to classification by a standards agency.

Make	Refer to the article, BASIS OF DESIGN.
Provide	Furnish and install complete.
Relocate	Disassemble, disconnect, and transport equipment to new locations, then clean, test, and install ready for use.
Replace	Remove and provide new item.
Review	A general contractual conformance check of specified products.
Roughing	Pipe, duct, conduit, equipment layout and installation.
Satisfactory	As specified in contract documents.
Site Representative	Construction Manager or Owner's Inspector at the work site.

Refer to General Conditions of the Contract for additional definitions.

1.05 SCOPE OF WORK

A. In general, the scope of work includes, but is not necessarily limited to the following:

1. Excavation and backfill for electrical services.
2. Exterior lighting, wiring and conduits, controls, etc.
3. Power distribution: panelboards, feeders and conduits.
4. Grounding of all services, raceway systems, disconnects and devices, etc.
5. Power and convenience outlet branch circuits, devices, etc.

1.06 BASIS OF DESIGN

A. The contract documents are prepared on basis of one manufacturer as "design equipment," even though other manufacturers' names are listed as acceptable makes. If Contractor elects to use one of the listed makes other than "design equipment," submit detailed drawings, indicating proposed installation of equipment. Show maintenance clearances, service removal space required, and other pertinent revisions to the design arrangement. Make required changes in the work of other trades, at no increase in any contract. Provide larger electrical feeders, circuit breakers, equipment, additional control devices and other miscellaneous equipment required for proper operation, and assume responsibility for proper location of roughing and connections by other trades. Remove and replace door frames, access doors, walls ceilings or floors required to install other than design make equipment. If revised arrangement submittal is rejected, revise and resubmit specified "design equipment" item which conforms to contract documents.

1.07 QUALITY ASSURANCE

A. Manufactures of equipment shall be firms regularly engaged in the production of factory fabricated systems and equipment whose products have been in satisfactory use in similar service for not less than (3) years.

B. Suppliers of equipment must have factory trained and authorized personnel for the service of all equipment provided

1.08 LICENSING

A. Where required the contractor shall hold a license, issued or recognized by the authority having Jurisdiction, to perform electrical work.

1.09 INSPECTIONS

A. Provide rough in and final inspection by an electrical inspector certified by the AIAEI (the American International Association of Electrical Inspectors).

1.10 REMOVAL, DISPOSAL AND HAZARDOUS MATERIALS

A. All removed electrical equipment shall be removed from the site and properly disposed of.

B. All hazardous materials must be disposed of in compliance with ENCON and all other regulatory agencies.

C. The Owner may wish to keep certain equipment, therefore, check with Owner before removals to determine what may be salvageable.

1.11 CONTINUITY OF UTILITY SERVICES

A. It is of paramount importance that each utility service operate continuously and without interruption. Whenever this contractor plans to make changes or alterations to any existing utility service, such plans shall result in no or minimum service interruption or inconvenience to Owner. This contractor shall plan and schedule any change or alteration to an existing utility service with Architect and Owner. Such planning, timing, and/or scheduling shall be approved by both these parties.

1.12 CODES AND STANDARDS

A. National Electrical Code: All work covered under these Contract Documents shall conform to the latest issue of the National Electrical Code.

B. Standards: All equipment shall meet all the requirements of ANSI, NEMA, IES, and IEEE standards.

C. Listing: All equipment and devices for which Underwriters' Laboratory has a listing service, shall be UL listed and bear the UL listing label.

D. All materials and installation methods shall comply with:

1. 2020 New York State Building Code, including all applicable amendments supplements to the following:
   a. 2020 International Building Code.
   b. 2020 International Existing Building Code.
   c. 2020 International Fire Code.
   d. 2020 International Plumbing Code.
   e. 2020 International Mechanical Code.
   f. 2020 International Fuel Gas Code.
2. 2020 Supplement to the New York State Energy Conservation Construction Code, including all applicable amendments to the following:
   a. 2020 International Energy Conservation Code.
   b. 2013 ASHRAE 90.1
3. 2020 Uniform Code Supplement (May 12, 2020).
4. National Fire Protection Association (NFPA).
5. New York State Department of Labor Rules and Regulations.
6. The Americans with Disabilities Act.
7. Local Utilities.
8. New York State Department of Health.
9. FGI Guidelines.
10. Local Municipality/City Codes and Ordinances and the Authority Having Jurisdiction.
11. Local Fire Department.
12. Insurance Carrier.
13. New York State Department of Education.
14. National Electrical Contractors Association (NECA).
15. Occupational Safety and Health Administration (OSHA).

1.13 SUBMITTALS & SUBMISSION REQUIREMENTS

A. All submittals shall be in accordance with Division 1 requirements, the following requirements listed below, and also as indicated in each specification section. All submittals not complying with the listing above will be returned to the contractor without being reviewed. Rejection by Architect or Engineer of any items submitted shall require resubmittal of acceptable items.

1. Within (30) days after receiving signed contract or notice to proceed, submit to Architect for review complete descriptive dimensional data and ratings for equipment and materials proposed to be furnished and installed.

2. All materials submitted shall clearly state the job name and specification section(s) that it applies to.

3. Any package containing more than one piece of equipment or material shall also contain a schedule clearly listing all items in submittal. Schedule page (s) shall also indicate project name and building name.

4. All submittals must be clearly marked using nomenclature used in this specification for proper item identification, schedule of usages, model numbers, construction materials, performance, data, etc.

5. Projects involving multiple buildings must have the submittals separated by building. Submittals in which buildings are combined will not be accepted. (Exception: When specifically approved by engineer, basic materials may be submitted once.)

6. The Contractor shall insure that dimensions of equipment to be used conform to the space allocated for the equipment on the drawings.

7. Submittals traced or copied from contract drawings are not acceptable and will be returned without review.

8. In the event material and/or equipment is installed prior to obtaining approval of shop drawings, and in the sole opinion of the Owner's Representative, this material and/or equipment does not meet the specifications, the Contractor shall be liable for the removal and the replacement at no additional cost to the contract.

B. Samples: When requested by Engineer, provide samples of both specified equipment and proposed substitutions for review by the Owner's Representative. Such equipment shall be delivered to a location designated, or erected at the job site as directed. When neither is physically possible, arrange for the Owner's Representative to visit an acceptable site where the proposed equipment can be inspected.

C. Substitutions:

1. Submittals for equipment or materials other than as specified shall be accepted for review by the Owner's Representative.

2. Approval of substitute equipment shall be based on functional, physical and aesthetic compatibility to the equipment specified as determined by the Owner's Representative and approved by the engineer.

3. Where substitute equipment is approved, the contractor shall be responsible for, and bear the cost of any necessary changes by his trade or other trades to make the system complete and operable.

4. Contractor is fully responsible for providing coordination between all trades affected by equipment substitution.

5. When requested, contractor shall submit layout drawings indicating new dimensions and arrangements of substituted equipment. Layout drawings shall indicate all revisions necessary for all services affected by substitution.

1.14 FIELD INSPECTION

A. As there are various conditions at the site which do not show on the accompanying drawings, or which are at variance with the conditions indicated on the drawings, it is important that each bidder visit the site and acquaint himself with existing conditions, and take these conditions into consideration when preparing his proposal. Each bidder shall obtain information or make any measurement desired. Lack of knowledge relative to existing conditions will not be allowed as a basis for extra compensation.

B. This contractor and his subcontractors shall inspect existing equipment to remain prior to any of his new work in order to determine that all equipment is in good operating condition. If equipment is found to be lacking components, is inoperable, damaged, etc., contractor shall provide immediate written notice to the Owner. The Owner or his representative shall determine if any additional work is necessary and the method by which any work shall be performed.

1.15 PERMITS, CERTIFICATES AND FEES

A. This Contractor shall obtain and pay for permits, certificates, fees etc. listed below. Costs for permits, fees etc. shall be included in the base bid amount.

1. All required applications and permits to begin work.
2. Certificate of inspection including Third-Party Agency.
3. All municipal connection charges.
4. All local utility charges (power, telephone, cable, etc.).
5. Fees and charges shall be obtained directly from the respective authority having jurisdiction.

1.16 GUARANTEE

A. Contractor shall guarantee all work furnished through this contract including work performed by sub-contractors, for a period of (1) year (unless otherwise noted), from the date of final acceptance. Contractor agrees to repair or replace any defective work or materials at no additional cost to the Owner. Contractor shall also pay for any damage to other work resulting from repairs to defects. Contractor shall furnish written guarantees to the Owner’s Representative in accordance with the general conditions.

1.17 TESTING AND INSPECTION

A. Inspections required for any ordinances, regulations, instructions, laws, rules, standards and practices that require any work to be inspected or tested shall be performed. Contractor shall give Owner, Architect and Engineer timely notice of readiness of work for inspection or testing and the date fixed for said inspection or testing.

B. Third-Party Agency must inspect completed installation and present Owner with Certificate of Inspection showing approval.

C. Required local or municipal inspection. Process and present Owner with certificate indicating approval of such governing bodies.

D. Contractor shall submit a written report to Architect, copy to Engineer, on results of each inspection or test on system or equipment supplied. Report shall contain all pertinent information, recommendations, approvals, additional work required, etc.

E. Contractor is responsible to check rotation on all three-phase equipment prior to turning on equipment for temporary or permanent use.

F. Panelboard, Circuit Breaker, Transformer and Fuse Tests:

1. Energize all possible lighting and equipment loads for a period of not less than eight hours.

2. Check all fuses and circuit breakers for faulty tripping and excessive heat.

3. Tabulate phase current on all feeders.

4. Tabulate voltages at each panelboard (phase to phase and phase to neutral).

5. Reconnect branch circuits that vary over 5% between high and low current.

6. Reconnect transformer taps as required to adjust for high or low voltages.

7. All tabulation sheets shall be presented to the Architect for approval, make any corrections determined by the Architect.

1.18 RECORD DOCUMENTS

A. Contractor shall prepare and turn over to Owner's Representative record as-built documents. As-built drawings will include actual equipment location layout, service connections, etc.

B. Contractor shall provide record drawings of all underground equipment and service runs. As-built drawings for underground work will include dimensions to actual finish grade elevations, and actual invert to underground service runs.

1.19 PENETRATIONS THRU FIRE RATED CONSTRUCTION

A. All penetrations by this contract through rated construction shall be sealed fire safe by a UL listed approved method.

B. All penetrations from abandoned or removed electrical work shall be sealed fire safe by this contract.

C. All electrical penetrations through walls, floors, etc. shall be conduit sleeved.

D. All conduit penetrations through fire rated partitions, walls, floors, etc. shall be installed as follows; penetration shall be oversized 1/2" to 3/4" maximum. This Contractor shall pack with fireproofing insulation, type FS cerablanket. Outside of penetrations shall be caulked and sealed with flame stop V, as manufactured by Flame Stop, Inc.; or an approved equal. Flame stop sealant shall be troweled smooth for finishing as required.

E. Electric panels installed in one- or two-hour fire rated walls shall be wrapped in an approved endothermic mat rated to maintain the assembly. Design Make: 3M Fire Protection Products.

1.20 CONFINED SPACES

A. All work in pipe tunnels, mechanical pits, well manholes, etc. shall be performed by skilled tradesman and laborers with current certification for working in confined space. Contractor shall bear all costs to provide all safety equipment, ventilation, etc. as required by State and Federal Regulations and shall obtain all necessary permits for such work.

B. Contractor shall submit copy of current certifications and photo I.D. of all tradesman and laborers who will be working in confined spaces on this project.

1.21 INTENT OF DRAWINGS

A. The drawings are diagrammatic, unless detailed dimensioned drawings are included. Drawings show approximate locations of equipment, fixtures, panelboards, and wiring devices. Exact locations are subject to the approval of the Owner's Representative. The general run of electrical feeders, branch circuits, and conduits, indicated on the drawings, is not intended to be the exact routing. Circuit designations, in the form of "Home Runs" on branches, indicate the designation of the branch circuit, and the panelboard or interconnection box from which the branch circuit is served.

B. Drawings show general design and arrangement. Verify exact location and elevations at the job location. Do not scale plans and diagrams.

C. Drawings do not show all offsets, fittings, interferences, and elevation changes. Adjust installation of conduit, equipment location, etc. to accommodate work with the obstacles and interferences. Where a major and important rearrangement is necessary, report same to Architect for review. Obtain written approval for all major changes.

D. Prior to roughing in any back boxes for power or communications devices, thoroughly examine the architectural elevations, enlarged plans and details. Also examine vendor drawings and manufacturer instructions for equipment furnished by others or as part of this contract. Install back boxes in locations and at heights as indicated on these documents. If the locations are not detailed, issue an RFI to the Owner’s Representative to obtain them. Boxes that are roughed in without detailed location and heights will re-located at no additional cost to the contract by the electrical contractor.

E. Cooperate with all Contracts and Owners and determine the exact route of all raceway and location of all equipment.

PART 2 - PRODUCTS

2.01 MATERIALS

A. All materials, unless otherwise specified, shall be new and be the standard products of the manufacturer. Used equipment or damaged material will be rejected.

B. The listing of a manufacturer as “acceptable” does not indicate acceptance of a standard or catalogued item of equipment. All equipment and systems conform to the Specifications.

2.02 U.L. LISTING

A. Equipment shall bear the Underwriter’s Laboratories (UL), or other approved agency listing label. This listing requirement applies to the entire assembly. Any modifications to equipment to suit the intent of the specifications shall be performed in accordance with the National Electric Code and listed by U.L.

PART 3 - EXECUTION

3.01 ROUGHING

A. Obtain approved roughing diagrams and exact locations of equipment for items furnished under other Divisions of the specifications. Do not rough in without approved drawing.

B. Due to small scale of Drawings, it is not possible to indicate all offsets, fittings, changes in elevation, etc. Verify final locations for rough-ins with field measurements and with the equipment being connected. Verify exact location and elevations at work site prior to any rough in work. DO NOT SCALE PLANS. If field conditions, details, changes in equipment or shop drawing information require a significant change to the original documents, contact the owners’ representative for approval before proceeding.

C. All equipment locations shall be coordinated with other trades to eliminate interference with required clearances for equipment maintenance and inspections.

D. Coordinate work with other trades and determine exact routing of all duct, pipe, conduit, etc., before fabrication and installation. Coordinate with Site Drawings. Verify with Owner's Representative exact location of all equipment in finished areas, such as thermostat, fixture and switch mounting heights, and equipment mounting heights.

E. Before roughing for equipment furnished by Owner or in other contracts, obtain from Architect and other Contractors, approved roughing drawings giving exact location for each piece of equipment. Do not "rough in" services without final layout drawings approved for construction. Cooperate with other trades to insure proper location and size of connections to insure proper functioning of all systems and equipment. Obtain written authorization from the Owners representative or other contractor for any “rough ins” that, due to project schedule, are required before approved coordination drawings are available. Any work installed without written authorization or approved coordination drawings, causing a conflict will be relocated by the electrical contractor at no expense to the Owner.

F. For equipment and connections provided in this contract, prepare roughing drawings as follows:

1. Existing equipment being relocated: Measure the existing equipment and prepare drawings for installation in new location.

2. New equipment: Obtain equipment roughing drawings and dimensions, then prepare rough-in drawings.

3. Where more than one trade is involved in an area, space or chase, all shall cooperate and install their own work to utilize the space equally between them in proportion to their individual requirements. In general, ductwork shall be given preference except where grading of piping becomes a problem, followed by piping then electrical wiring. If, after installation of any equipment, piping, ducts, conduit, and boxes, it is determined that ample maintenance and passage space has not been provided, rearrange work and/or furnish other equipment as required for ample maintenance space. Any changes in the size or location of the material or equipment supplied, which may be necessary in order to meet field conditions or in order to avoid conflicts between trades, shall be brought to the immediate attention of the Owner's Representative and approval received before such alterations are made.

4. Provide easy, safe, and code mandated clearances at controllers, motor starters, valve access, and other equipment requiring maintenance and operation. Contractor shall relocate existing work in the way of new construction. VISIT SITE BEFORE BIDDING TO DETERMINE SCOPE OF WORK. Provide new materials, including new piping and insulation for relocated work.

3.02 CUTTING AND PATCHING

A. This contractor shall bear the cost of all cutting and patching required by and for the installation of this work. This contractor shall perform all cutting and patching unless otherwise indicated on drawings or if directed by the Architect.

B. Patching of fire rated floors, walls, partitions, etc. shall be made using new materials equal to the fire rating of the existing.

C. Should changes, omissions or errors in electrical work require cutting, patching or making alterations in any portion of new construction, such work will be performed by GC at contractor's expense.

D. Cutting and patching of roof surfaces and structures shall only be performed by a qualified contractor, as approved by the Architect. The work of this contract shall bear the cost of above mentioned cutting and patching. This contractor shall insure that existing roof warranties remain in force.

E. This contractor shall furnish lintels, sized to accommodate structure above opening, where cutting and patching is to be performed on load bearing walls. Contractor shall obtain written approval for all lintels prior to installation.

F. Cutting shall be done in a manner which will not adversely affect the strength of the building. Holes and openings shall be neatly cut so as to provide a finished appearance and shall be patched around the edge where required for a finished appearance. Provide temporary bracing, shoring, etc. as required.

G. Patching shall be structurally sound and match the existing materials and finish of adjacent materials. Patching is required in finished areas, wherever existing work is removed, at the sides of openings, etc. Patching shall include repairs, painting, etc.

H. At the completion of the work, all evidence of alteration will be as inconspicuous as possible.

3.03 OPENINGS, SLEEVES, AND CHASES

A. Certain chases, openings, and shafts will be provided as shown as part of General Construction Plans and Specifications.

B. Provide all other openings and sleeves for conduit etc. through floors, walls, partitions, ceilings, roofs, etc. for Division 26-E work.

C. Assume responsibility for correct and final location and size of such openings; furnish templates if required. Correct improperly located and sized or omitted chases and openings as required. Plug all abandoned sleeves left as part of this Contract.

3.04 SUPPORTS

A. Provide required supports for work of this Contract, including beams, angles, channel, hangers, rods, columns, plates, bases, braces, etc. to properly support all work.

B. Provide steel angles, channels and other materials necessary for the proper support and erection of motor starters, distribution panelboards, large disconnect switches, pendant-mounted lighting fixtures, etc.

C. Panelboards, cabinets, large pull boxes, cable support boxes and starters shall be secured to ceiling and floor slab and not supported from conduits. Small panelboards, etc., as approved by Owner's Representative, may be supported on walls. Racks for support of conduit and heavy electrical equipment shall be secured to building construction by substantial structural supports.

D. Provide concrete bases for all floor mounted equipment. Provide 3,000 lb. concrete, chamfer edges, trowel finish, securely bond to floor by roughening slab and coating with cement grout. Bases 2" high; shape and size to accommodate equipment. Set anchor bolts in sleeves before pouring and after anchoring and leveling, fill equipment bases with grout.

E. See Specification Section 260530 – Supporting Devices for additional requirements

3.05 CONCRETE EQUIPMENT PADS

A. Provide concrete equipment pads for all floor mounted electrical equipment, including: switchgear, distribution panels, transfer switches, and transformers.

3.06 CONCEALMENT

A. Unless otherwise specifically indicated, all work shall be concealed above ceiling space, in wall space, below slabs in crawl spaces, and elsewhere throughout the building.

B. In areas with no ceilings, install only after Architect reviews and comments on arrangement and appearance.

3.07 EQUIPMENT INSTALLATION

A. All installations shall comply with the following requirements:

1. Provide code required disconnects for all electrical equipment that is furnished or connected by the electrical contractor.

2. Coordinate electrical systems, equipment, and materials installation with other building components. Be responsible for any changes in openings and locations necessitated by the equipment installed.

3. The architect shall control the placement of all wall and ceiling mounted electrical equipment and devices in all rooms with the exception of mechanical and electrical equipment rooms. When drawing details are not available, consult with the Architects representative for actual location.

4. Verify all dimensions with field measurements.

5. Arrange for all chases, slots and openings in other building components that are not indicated on drawings, to allow for electrical installations.

6. Coordinate the installation of required supporting devices and sleeves to be set in poured-in-place concrete and other structural components, as they are constructed.

7. Coordinate ordering and installation of all equipment with long lead times or having a major impact on work by other trades so as not to delay the job or impact the construction schedule. Pay close attention to equipment that must be installed prior to building enclosure.

8. Where mounting heights are not detailed or dimensioned, install systems, materials and equipment to provide the maximum headroom possible.

9. Install systems, materials and equipment to conform with approved submittal data, including coordination drawings, to greatest extent possible. Conform to arrangements indicated by the Contract Documents, recognizing that portions of the work are shown only in diagrammatic form. Where coordination requirements conflict with individual system requirements, refer the conflict to the Architect.
10. Store Materials on dry base, at least 6" above-ground or floor. Store so as not to interfere with other work or obstruct access to buildings or facilities. Provide waterproof/windproof covering. Remove and provide special storage for items subject to moisture damage. Protect against theft or damage from any cause. Replace items stolen or damaged, at no cost to Owner.

11. Set all equipment to accurate line and grade, level all equipment and align all equipment components.

12. All tolerances in alignment and leveling, and the quality of workmanship for each stage of work shall be as required by the manufacturer and subject to approval by the owners representative.

13. All finished equipment surfaces damaged during construction shall be brought to “as new” condition by touch up or repainting. Any rust shall be removed and primed prior to repainting.

14. Workmanship shall be as called for in the “Standard of Installation” published by the National Electrical Contractors Association (NECA).

15. Provide all scaffolding, rigging, hoisting and services necessary for erection and delivery of equipment and apparatus furnished into the premises. These items shall be removed from premises when no longer required.

16. No electrical equipment shall be hidden or covered up prior to inspection by the owners’ representative. All work that is determined to be unsatisfactory shall be corrected immediately.

17. All electrical work shall be installed level and plumb, parallel and perpendicular to other building systems and components.

18. Conceal all contract work above ceilings and in walls, below slabs, and elsewhere throughout building. If concealment is impossible or impractical, notify Owner's Representative before starting that part of the work and install only after his approval. In areas with no ceilings, install only after Owner's Representative reviews and comments on arrangement and appearance.

19. Install access panel or door where units are concealed behind finished surfaces.

B. Provide complete power connections to all electrical equipment. Provide control connections to equipment where indicated on the drawings. Provide disconnect ahead of each piece of equipment. Ground all equipment in accordance with the latest version of the National Electrical Code.

C. Provide all power wiring, electric equipment, control wiring, switches, lights, receptacles, and connections as required for proper equipment operation of Owner-Furnished Equipment and Equipment furnished by other contracts,

D. Refer to Manufacturer's drawings/specifications for requirements of special equipment. Verify connection requirements before bidding and confirm prior to roughing.

E. This contractor shall coordinate scheduling and installation of work with other contractors, sub-contractors and other trades. The contractor is also required to coordinate all work with owner supplied materials, direct contracts, and normal building operations, if any.

F. All finished work shall be neat and workmanlike. All work of a special nature shall be performed by skilled and qualified workmen who can present credentials showing experience in said trade. New systems shall be delivered to Owner complete in perfect working order, tested and balanced in full accordance with plans and specifications. Existing systems shall function in same manner as before this work was performed. Any malfunctions which arise in existing systems as a result of demolition or alteration of parts of such systems shall be corrected.

G. Layout of equipment, accessories and electrical systems in plan is generally diagrammatic unless specifically dimensioned or detailed. Check project drawings and existing site conditions before installing work for interference's as governed by structural or other conditions. Owner reserves the right to make reasonable changes in location of equipment, accessories or electrical systems prior to "roughing-in" without involving additional expense. Exact dimensions shown upon plans will be subject to verification and confirmation of exact conditions at site at time of construction. "Plus or minus" dimensions are shown upon drawing as a guide only. Exact surrounding conditions are governed by final equipment selection and/or other like details.

H. Furnish all new equipment and materials as described herein. Any material, operation, method or device mentioned, listed or noted within this specification, if not specifically mentioned as furnished or installed by others, shall be furnished and installed by this contractor.

3.08 PAINTING

A. This Contract Includes the following :

1. Painting for all cut and patch work performed as part of Division 26 contract.
2. Painting required for touch-up of surfaces damaged due to the installation of electrical work.
3. Painting as required to repair finish of equipment furnished.
4. Painting of all surface mounted raceways in finished areas.

3.09 CLEANING

A. After all tests are made and installations completed satisfactorily:

B. Thoroughly clean entire installation, both exposed surfaces and interiors.

C. Remove all debris caused by work.

D. Remove tools, surplus, materials, when work is finally accepted.

3.10 CONTINUITY OF SERVICES

A. The building will be in use during construction operations. Maintain existing systems in operation within all rooms of building at all times. Refer to "General Conditions of the Contract for Construction" for temporary facilities for additional contract requirements. Schedules for various phases of contract work shall be coordinated with all other trades and with Owner's Representative. Provide, as part of contract, temporary mechanical and electrical connections and relocation as required to accomplish the above. Obtain approval in writing as to date, time, and location for shut-down of existing mechanical/electrical facilities or services.

3.11 START UP AND OWNER INSTRUCTIONS

A. Before acceptance of the work, furnish necessary skilled labor to operate all systems by seasons. Instruct the Owners designated personnel on the proper operation and maintenance of systems and equipment. Obtain written acknowledgment from person instructed prior to acceptance repeat the instructions if asked to do so. Contractor is fully responsible for systems until acceptance, even though operated by Owner's personnel, unless otherwise agreed in writing. Provide, operating, maintenance and starting precautions and procedures to be followed by the Owner for operating systems and equipment. Mount the instruction in clear plastic holder on or adjacent to the equipment.

B. Where supervision by a manufacturer is called for, provide manufacturer's certified technician or engineer to supervise the startup, testing and adjustment of the equipment or system. Where two or more manufacturers are involved (i.e., variable frequency drive and air handling unit) both manufacturer's shall be present at start up. The manufacturer shall provide a written report detailing the testing and start-up including problems that occurred and their method of resolution.

C. Training Session: A training session shall be held for each system and/or item listed below:

Item	Description	Training Hours For Each Bldg
1.	Electric Power Distribution	2
2.	Lighting Control System	2

D. The instruction shall include the following types of information:

1. System overview
2. Major component designation
3. System operation procedures
4. Maintenance scheduling and procedures
5. Provide a list of spare components each system would normally require

E. Services: Provide services required, for all equipment specified under this contract, for a period of (1) year after written acceptance by the Owner.

3.12 OPERATION AND MAINTENANCE MANUALS

A. Provide Operation and Maintenance Manuals. Include the following:

1. Equipment wiring diagrams.
2. Manufacturer's instructions.
3. Include typewritten instructions, describing equipment, starting/operating procedures, emergency operating instructions.
4. Recommended maintenance procedures.
5. Include name, address, and telephone number of supplier manufacturer.
6. Representative and service agency for all major equipment items.
7. Panel schedules in hard copy and word or excel format.
8. Bind above items in a three ring binder with name of project on the cover.
9. Provide CD or DVD with all data in word, pdf, or excel format.

B. Refer to specific specification electrical specification sections for additional requirements.

C. Deliver to Owner's Representative before request for acceptance.

3.13 ASBESTOS RECOGNITION AND PRECAUTIONS

A. The contractor shall be responsible for coordination of all required removal work, coring, cutting and patching with the owners asbestos management plan. Prior to performing such work identify areas containing asbestos. Notify the Owner so that they may make arrangements for abatement and/or containment prior to work proceeding. The contractor shall be responsible for cleaning all areas where asbestos is released due to the failure to coordinate with the asbestos management plan. Refer to Division 1 sections for further requirements.

B. The disturbance or dislocation of asbestos-containing materials causes asbestos fibers to be released into the building's atmosphere, thereby creating a health hazard to workmen and building occupants. Consistent with Industrial Code Rule 56 and the content of recognized asbestos-control work, the Contractor shall apprise all of his workers, supervisory personnel, subcontractors, Owner and Consultants who will be at the job site of the seriousness of the hazard and of proper safeguards and work procedures which must be followed, as described in New York State Department of Labor Industrial Code Rule 56.

END OF SECTION 260010

SECTION 260190 - SUPPORTING DEVICES

PART 1 -GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract including the General and Supplementary Conditions of Division 1 of the Specification Sections, apply to the work of this section.

1.02 SECTION INCLUDES

A. Conduit and equipment supports.

B. Anchors and fasteners.

1.03 REFERENCES

A. Refer to Division 1.

B. NECA Standard of Installation (National Electrical Contractors Association).

C. NFPA 70 - National Electrical Code.

1.04 REGULATORY REQUIREMENTS

A. Conform to requirements of NFPA 70.

B. Products: Listed and classified by Underwriters Laboratories, Inc. as suitable for the purpose specified and indicated.

PART 2 - PRODUCTS

2.01 ANCHORING DEVICES

A. Sleeve Anchors (FS FF-S-325 Group II, Type 3, Class 3): Molly/Emhart's Parasleeve Series, Phillips' Red Head AN, HN, FS Series, or Ramset's Dynabolt Series.

B. Wedge Anchors (FS FF-S-325 Group II, Type 4, Class 1): Hilti's Kwik Bolt Series, Molly/Emhart's Parabolt Series, Phillips' Red Head WS, or Ramset's Trubolt Series.

C. Self-Drilling Anchors (FS FF-S-325 Group III, Type 1): Phillips' Red Head Series S or Ramset's Ram Drill Series.

D. Non-Drilling Anchors (FS FF-S-325 Group VIII, Type 1): Hilti's Drop-In Anchor Series, Phillips' Red Head J Series, or Ramset's Dynaset Series.

E. Stud Anchors (FS FF-S-325 Group VIII, Type 2): Phillips' Red Head JS Series.

2.02 CAST-IN-PLACE CONCRETE INSERTS

A. Continuous Slotted Type Concrete Insert, Galvanized:

1. Load Rating 1300 lbs./ft.: Kindorf's D-986.
2. Load Rating 2400 lbs./ft.: Kindorf's D-980.
3. Load Rating 3000 lbs./ft.: Hohmann & Barnard Inc.'s Type CS-H.
4. Load Rating 4500 lbs./ft.: Hohmann & Barnard Inc.'s Type CS-HD.

B. Threaded Type Concrete Insert: Galvanized ferrous castings, internally threaded.

C. Wedge Type Concrete Insert: Galvanized box-type ferrous castings, designed to accept bolts having special wedge shaped heads.

2.03 MISCELLANEOUS FASTENERS

A. Except where shown otherwise on the Drawings, furnish type, size, and grade required for proper installation of the Work, selected from the following: Furnish galvanized fasteners for exterior use, or for items anchored to exterior walls, except where stainless steel is indicated.

1. Standard Bolts and Nuts: ASTM A 307, Grade A, regular hexagon head.
2. Lag Bolts: FS FF-B-561, square head type.
3. Machine Screws: FS FF-S-92, cadmium plated steel.
4. Machine Bolts: FS FF-B-584 heads; FF-N-836 nuts.
5. Wood Screws: FS FF-S-111 flat head carbon steel.
6. Plain Washers: FS FF-W-92, round, general assembly grade carbon steel.
7. Lock Washers: FS FF-W-84, helical spring type carbon steel.
8. Toggle Bolts: Tumble-wing type, FS FF-B-588, type, class and style as required to sustain load.

B. Stainless Steel Fasteners: Type 302 for interior Work; Type 316 for exterior Work; Phillips head screws and bolts for exposed Work unless otherwise specified.

2.04 HANGER RODS

A. Mid low carbon steel, unless otherwise specified; fully threaded or threaded each end, with nuts as required to position and lock rod in place. Unless galvanized or cadmium plated, provide a shop coat of red lead or zinc chromate primer paint.

2.05 "C" BEAM CLAMPS

A. With Conduit Hangers:

1. For 1 Inch Conduit Maximum: B-Line Systems Inc.'s BG-8, BP-8 Series, Caddy/Erico Products Inc.'s BC-8P and BC-8PSM Series, or GB Electrical Inc.'s HIT 110-412 Series.

2. For 3 Inch Conduit Maximum: Appleton Electric Co.'s BH-500 Series beam clamp with H50W/B Series hangers, Kindorf's 500 Series beam clamp with 6HO-B Series hanger, or OZ/Gedney Co.'s IS-500 Series beam clamp with H-OWB Series hanger.

3. For 4 Inch Conduit Maximum: Kindorf's E-231 beam clamp and E-234 anchor clip and C-149 series lay-in hanger; Unistrut Corp.'s P2676 beam clamp and P-1659A Series anchor clip with J1205 Series lay in hanger.

B. For Hanger Rods:

1. For 1/4 Inch Hanger Rods: B-Line Systems Inc.'s BC, Caddy/Erico Products Inc.'s BC, GB Electrical Inc.'s HIT 110, Kindorf's 500, 510, or Unistrut Corp.'s P1648S, P2398S, P2675, P2676.

2. For 3/8 Inch Hanger Rods: Caddy/Erico Products Inc.'s BC, Kindorf's 231-3/8, 502, or Unistrut Corp.'s P1649AS, P2401S, P2675, P2676.

3. For 1/2 Inch Rods: Appleton Electric Co. BH-500 Series, Kindorf's 500 Series, 231-1/2, OZ/Gedney Co.'s IS-500 Series, or Unistrut Corp.'s P1650AS, P2403S, P2676.

4. For 5/8 Inch Rods: Unistrut Corp.'s P1651AS beam clamp and P1656A Series anchor clip.

5. For 3/4 Inch Rods: Unistrut Corp.'s P1653S beam clamp and P1656A Series anchor clip.

2.06 CHANNEL SUPPORT SYSTEM

A. Channel Material: 12 gage steel.

B. Finishes:

1. Phosphate and baked green enamel/epoxy.
2. Pre-galvanized.
3. Hot dipped galvanized.
4. Polyvinyl chloride (PVC), minimum 15 mils thick.

C. Fittings: Same material and finish as channel.

D. UL Listed Systems:

1. B-line Systems Inc.'s B-22 (1-5/8 x 1-5/8 inches), B-12 (1-5/8 x 2-7/16 inches), B-11 (1-5/8 x 3-1/4 inches).

2. Grinnell Corp.'s Allied Power-Strut PS 200 (1-5/8 x 1-5/8 inches), PS 150 (1-5/8 x 2-7/16 inches), PS 100 (1-5/8 x 3-1/4 inches).

3. Kindorf's B-900 (1-1/2 x 1-1/2 inches), B-901 (1-1/2 x 1-7/8 inches), B-902 (1-1/2 x 3 inches).

4. Unistrut Corp.'s P-3000 (1-3/8 x 1-5/8 inches), P-5500 (1-5/8 x 2-7/16 inches), P-5000 (1-5/8 x 3-1/4 inches).

5. Versabar Corp.'s VA-1 (1-5/8 x 1-5/8 inches), VA-3 (1-5/8 x 2-1/2 inches).

2.07 MISCELLANEOUS FITTINGS

A. Side Beam Brackets: B-Line Systems Inc.'s B102, B103, B371-2, Kindorf's B-915, or Versabar Corp.'s VF-2305, VF-2507.

B. Pipe Straps:

1. Two Hole Steel Conduit Straps: B-Line Systems Inc.'s B-2100 Series, Kindorf's C-144 Series, or Unistrut Corp.'s P-2558 Series

2. One Hole Malleable Iron Clamps: Kindorf's HS-400 Series, or OZ/ Gedney Co.'s 14-G Series, 15-G Series (EMT).

C. Deck Clamps: Caddy/Erico Products Inc.'s DH-4-T1 Series.

D. Fixture Stud and Strap: OZ/Gedney Co.'s SL-134, or Steel City's FE-431.

E. Supporting Fittings for Pendent Mounted Industrial Type Fluorescent Fixtures on Exposed Conduit System:

1. Ball Hanger: Appleton Electric Co.'s AL Series, or Crouse-Hinds Co.'s AL Series.

2. Flexible Fixture Hanger: Appleton Electric Co.'s UNJ-50, UNJ-75, or Crouse-Hinds Co.'s UNJ115.

3. Flexible (Hook Type) Fixture Hanger: Appleton Electric Co.'s FHHF, or Crouse-Hinds Co.'s UNH-1.

4. Eyelet: Unistrut Corp.'s M2250.

5. Eyelet with Stud: Kindorf's H262, or Unistrut Corp.'s M2350.

6. Conduit Hook: Appleton Electric Co.'s FHSN, or Crouse-Hinds Co.'s UNH-13.

F. Supporting Fasteners (Metal Stud Construction): Metal stud supports, clips and accessories as produced by Caddy/Erico Products Inc.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Where specific fasteners are not specified or indicated for securing items to in-place construction, provide appropriate type, size, and number of fasteners for a secure, rigid installation.

B. Install anchoring devices and other fasteners in accordance with manufacturer's printed instructions.

C. Make attachments to structural steel wherever possible.

3.02 FASTENER SCHEDULE

A. Material:

1. Use cadmium or zinc coated anchors and fasteners in dry locations.

2. Use hot dipped galvanized or stainless steel anchors and fasteners in damp and wet locations.

3. For corrosive atmospheres or other extreme environmental conditions, use fasteners made of materials suitable for the conditions.

B. Types and Use: Unless otherwise specified or indicated use:

1. Cast-in-place concrete inserts in fresh concrete construction for direct pull-out loads such as shelf angles or fabricated metal items and supports attached to concrete slab ceilings.

2. Anchoring devices to fasten items to solid masonry and concrete when the anchor is not subjected to pull out loads, or vibration in shear loads.

3. Toggle bolts to fasten items to hollow masonry and stud partitions.

4. TPR fasteners to fasten items to plywood backed gypsum board ceilings.

5. Metallic fasteners installed with electrically operated or powder driven tools for approved applications, except:
   a. Do not use powder driven drive pins or expansion nails.

   b. Do not attach powder driven or welded studs to structural steel less than 3/16 inch thick.

   c. Do not support a load, in excess of 250 lbs from any single welded or powder driven stud.

   d. Do not use powder driven fasteners in precast concrete.

3.03 ATTACHMENT SCHEDULE

A. General: Make attachments to structural steel or steel bar joists wherever possible. Provide intermediate structural steel members where required by support spacing. Select steel members for use as intermediate supports based on a minimum safety factor of 5.

1. Make attachments to steel bar joists at panel points of joists.

2. Do not drill holes in main structural steel members.

3. Use "C" beam clamps for attachment to steel beams.

B. Where it is not possible to make attachments to structural steel or steel bar joists, use the following methods of attachment to suit type of construction unless otherwise specified or indicated on the drawings:

1. Attachment to Steel Roof Decking (No Concrete Fill):
   a. Decking With Hanger Tabs: Use deck clamps.

   b. Decking Without Hanger Tabs:
      (1) Before Roofing Has Been Applied: Use 3/8 inch threaded steel rod welded to a 4 x 4 x 1/4 inch steel plate and installed through 1/2 inch hole in roof deck.

      (2) After Roofing Has Been Applied: Use welding studs, or self-drilling/tapping fasteners. Exercise extreme care when installing fasteners to avoid damage to roofing.

2. Attachment to Concrete Filled Steel Decks (Total thickness, 2-1/2 inches or more):
   a. Before Fill Has Been Placed:
      (1) Use thru-bolts and fish plates.

      (2) Use welded studs. Do not support a load in excess of 250 pounds from a single welded stud.

   b. After Fill Has Been Placed: Use welded studs. Do not support a load in excess of 250 lbs from a single welded stud.

3. Attachment to Cast-In-Place Concrete:
   a. Fresh Concrete: Use cast-in-place concrete inserts.

   b. Existing Concrete: Use anchoring devices.

4. Attachment to Cored Precast Concrete Decks:
   a. New Construction: Use thru-bolts and fish plates before Construction Work Contractor has placed concrete fill over decks.

5. Attachment to Hollow Block or Tile Filled Concrete Deck:
   a. New Construction: Use cast-in-place concrete inserts by having Construction Work Contractor omitting blocks and pouring solid blocks with insert where required.

6. Attachment to Waffle Type Concrete Decks:
   a. New Construction:
      (1) Use cast-in-place concrete inserts in fresh concrete.

(2) If concrete fill has been applied over deck, thru-bolts and fish plates may be used where additional concrete or roofing is to be placed over the deck.

7. Attachment to Precast Concrete Planks: Use anchoring devices, except do not make attachments to precast concrete planks less than 2-3/4 inches thick.

8. Attachment to Precast Concrete Tee Construction:
   a. New Construction:
      (1) Use tee hanger inserts between adjacent flanges.

      (2) Use thru-bolts and fish plates, except at roof deck without concrete fill.

   b. Existing Construction:
      (1) Use anchoring devices installed in webs of tees. Install anchoring devices as high as possible in the webs.

   c. Do not use powder driven fasteners.

   d. Exercise extreme care in drilling holes to avoid damage to reinforcement.

9. Attachment to Wood Construction: Use side beam brackets fastened to the sides of wood members to make attachments for hangers.
   a. Under 15 lbs Load: Attach side beam brackets to wood members with 2 No. 18 x 1-1/2 inch long wood screws, or 2 No. 16 x 1-1/2 inch long drive screws.

   b. Over 15 lbs Load: Attach side beam brackets to wood members with bolts and nuts or lag bolts. Do not use lag bolts in wooden members having a nominal thickness (beam face) under 2 inches in size. Install bolts and nuts or lag bolts in the side of wood members at the mid-point or slightly above. Install plain washers under all nuts.

LOAD	LAG BOLT SIZE	BOLT DIA.
15 lbs. to 30 lbs.	3/8 x 1-3/4 inches	3/8 inch
31 lbs. to 50 lbs.	1/2 x 2 inches	1/2 inch
Over 50 lbs. to load limit of structure.	Use bolt & nut	5/8 inch

      (1) Bottom chord of wood trusses may be utilized as structural support, but method of attachment must be specifically approved.

      (2) Do not make attachments to the diagonal or vertical members of wood trusses.

(3) Do not make attachments to the nailing strips on top of steel beams.

10. Attachment to Metal Stud Construction: Use supporting fasteners manufactured specifically for the attachment of raceways and boxes to metal stud construction.
    a. Support and attach outlet boxes so that they cannot torque/twist. Either:
        (1) Use bar hanger assembly, or:

        (2) In addition to attachment to the stud, also provide far side box support.

3.04 CONDUIT SUPPORT SCHEDULE

A. Provide number of supports as required by National Electrical Code. Exception: Maximum support spacing allowed is 4'-0" for conduit sizes 3 inches and larger supported from wood trusses.

B. Use pipe straps and specified method of attachment where conduit is installed proximate to surface of wood or masonry construction.

1. Use hangers secured to surface with specified method of attachment where conduit is suspended from the surface.

C. Use "C" beam clamps and hangers where conduit is supported from steel beams.

D. Use deck clamps and hangers where conduit is supported from steel decking having hanger tabs.

1. Where conduit is supported from steel decking which does not have hanger tabs, use clamps and hangers secured to decking, utilizing specified method of attachment.

E. Use channel support system supported from structural steel for multiple parallel conduit runs.

F. Where conduits are installed above ceiling, do not rest conduit directly on runner bars, T-Bars, etc.

1. Conduit Sizes 2-1/2 Inches and Smaller: Support conduit from ceiling supports or from construction above ceiling.

2. Conduit Sizes Over 2-1/2 Inches: Support conduit from beams, joists, or trusses above ceiling.

3.05 CHANNEL SUPPORT SYSTEM SCHEDULE

A. Use channel support system where specified or indicated on the drawings.

B. Channel supports may be used, as approved, to accommodate mounting of equipment.

C. Material and Finish:

1. Dry Locations: Use 12 gage steel channel support system having any one of the specified finishes.

2. Damp Locations: Use 12 gage steel channel support system having any one of the specified finishes except green epoxy/enamel.

3. Wet Locations: Use 12 gage steel channel support system having hot dipped galvanized, or PVC finish.

END OF SECTION 260190

SECTION 260195 - ELECTRICAL IDENTIFICATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract including the General and Supplementary Conditions of Division 1 of the Specification Sections, apply to the work of this section.

1.02 SECTION INCLUDES

A. Nameplates and labels.

B. Underground Waring Tape.

C. Wire and cable markers.

D. Conduit markers.

1.03 REFERENCES

A. Refer to Division 1.

B. NFPA 70 - National Electrical Code.

1.04 REGULATORY REQUIREMENTS

A. Conform to requirements of NFPA 70.

B. Products: Listed and classified by Underwriters Laboratories, Inc. as suitable for the purpose specified and indicated.

PART 2 - PRODUCTS

2.01 NAMEPLATES AND LABELS

A. Nameplates: Engraved three-layer laminated plastic, black letters on white background

1. Locations:
   a. Outside of each electrical panel. Indicate panel name.
   b. Control equipment enclosure. Indicate equipment name and branch circuit.
   c. Disconnects Indicate equipment name and branch circuit.
   d. Distribution panel breakers. Indicate load served.

2. Letter Size:1/8 inch letters.

B. Labels: Circuit designation shall be indicated with clear adhesive tape, 3/16 inch black letters on clear background. Use only for identification of individual wall switches and receptacles and control device stations. Tape label shall be adhered to the faceplate of each device.

C. Provide flash protection label per NEC 110.16 for equipment furnished under this Contract including switchboards, panelboards, industrial control panels and motor control centers. Seton #M0547; or equal.

D. Provide labeling for 120/240V, 3-Phase, 4-Wire (Delta High Leg) Panelboards per NEC 408.3(F)(1) that reads, “Caution: B Phase has 208V to ground”.

2.02 WIRE MARKERS

A. Description: Tape type wire markers.
B. Locations: Each conductor at panelboard gutters and each load connection.
C. Legend: Branch circuit or feeder number indicated.

2.03 UNDERGROUND WARNING TAPE

A. Location:

1. Along length of each underground conduit buried 12" below finished grade.

2. Detectable tape, 5.0 Mil. Overall Thickness, 0.80 Mil. Polypropylene Film Thickness, 0.35 Mil. Solid Aluminum Foil Core, 3.75 Mil. Polyethylene Film Thickness, Reverse Printed Polypropylene Structure, Diagonally Striped Design, Acid, Alkali, Chemical and Oil Resistant for the following:
   a. ELECTRIC: Yellow with black lettering that reads - "CAUTION – UNDERGROUND ELECTRIC".

   b. TELECOMMUNICATIONS: Orange with black lettering that reads – “CAUTION – UNDERGROUND FIBER OPTIC CABLE”.

3. Design Make: Pro-Line Safety Products.

2.04 PANEL SCHEDULES

A. Provide complete type written directory for each panelboard listing room number, function, etc., for each circuit breaker.

B. Provide type written updated panelboard directories for existing panelboards affected by this work.

C. Panel directory must also include the up stream panel that services the panel. (i.e. "Fed from MDP Circuits 2,4,6")

D. Include a Microsoft word or excel file with all panel schedules as part of the close out submittals.

2.05 DEVICES

A. Provide a tape label on all receptacle and switch coverplates, power poles, etc. listing panel designation and circuit number. Tape shall be attached to outside of receptacle or switch coverplates.

B. In permanent marker write the panel and circuit number on the wall behind receptacle cover plate or inside receptacle back box.

2.06 JUNCTION AND PULL BOXES

A. Identify junction and pullboxes for particular service such as power, lighting, fire alarm, telephone, intercom, public address, nurse call, etc. using stencil lettering on cover.

2.07 CONDUIT

A. Provide adhesive marking labels for raceway and metal-clad cable. The labels shall indicate voltage and service, and be located above ceilings every 75 feet and on wall mounted conduit in mechanical and equipment rooms.

PART 3 - EXECUTION

3.01 PREPARATION

A. Degrease and clean surfaces to receive nameplates and labels.

3.02 INSTALLATION

A. Install nameplate and label parallel to equipment lines.

B. Secure nameplate to equipment front using adhesive.

C. Secure nameplate to inside surface of door on panelboard that is recessed in finished locations.

END OF SECTION 260195

SECTION 260519 - WIRE AND CABLE (600 V AND BELOW)

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract including the General and Supplementary Conditions of Division 1 of the Specification Sections, apply to the work of this section.

1.02 WORK INCLUDED

A. Conductors.

B. Terminations.

1.03 SUBMITTALS

A. Schedule of all wiring and cable usage.

B. Product data sheets for all wire and cable types.

PART 2 - PRODUCTS

2.01 CONDUCTORS

A. Feeder, branch circuit and control wiring:

1. Annealed Copper, 98% conductivity.

2. Minimum wire size:
   a. #12 AWG for branch circuits
   b. #14 AWG for control and signal circuits

3. #8 AWG Wire and above shall be stranded.

4. 600 volt insulation for all wiring above 50 volts.

5. 300 volt insulation permitted for all wiring below 50 volts.

6. Thermal plastic with PVC insulation with nylon jacket, suitable for wet or dry locations, THHN/THWN 90 degree Celsius.

7. 90 degree C maximum operating temperature rating.

8. UL 83 Listed

B. Lighting fixture wire

1. FREP/CPE coated stranded copper,
2. Flame retardant EPR Insulation and CPE jacket.
3. UL 44 listed

C. Flexible cords and cables shall be Type "SO" or "SJO.

D. Color Coding:

1. All circuits shall be color coded according to the following schedule:

Voltage	A PHASE	B PHASE	C PHASE	NEUTRAL
208Y/120V, 3 Phase	Black	Red	Blue	White
480Y/277V, 3 Phase	Brown	Orange	Yellow	Gray
120/240V, 1 Phase	Black	Red		White

*ALL GROUNDING CONDUCTORS SHALL BE GREEN

2. #6 AWG and smaller shall have insulation continuously colored as called for above.

3. #4 AWG and larger may by identified using a minimum 3" tape band.

4. Color code all conductors at all pullboxes, enclosures, and terminations.

5. Switched legs shall be identified with the same color insulation as the phase leg.

E. Acceptable manufacturers:

1. Cablec
2. Southwire
3. Okonite
4. Rome Cable
5. Pirelli

2.3 LOW VOLTAGE CONNECTORS AND TERMINATIONS

A. Straight Splices, #26 AWG To #10 AWG:

1. Nylon Insulated compression butt-splices.
2. 600 volt, 90 degree C rated.
3. Make: Burndy "Insulink", T&B "Sta-Kon", or approved equal

B. Straight Splices, #8 AWG and Larger:

1. Two way, long barrel, compression type, copper
2. Provide heat shrink tubing over splice.
3. 600 volt rated.

4. Make: Burndy "Hylink", T&N 54800 Series, or approved equal.

C. Pigtail Splices, #26 AWG to #10 AWG:

1. Twist type pressure connector.
2. 600 volt rated, 105 degree C.
3. Size as required for number and size of conductors used.
4. Make: T&B Scotchlock, or approved equal

D. Three Way Splices, #8 AWG and Larger:

1. Three way, long barrel, compression type, copper.
2. Provide tape or heat shrink tubing over splice.
3. 600 volt rated.
4. Make: Burndy "Hylink", T&B 54700 Series, or approved equal.

E. Lug Terminations for Control and Signal Wiring:

1. Nylon insulated fork with compression termination of #26 AWG to #10 AWG.
2. Nylon insulated ring with compression termination for #8 AWG and larger.
3. 300 volt rated.
4. Make: Burndy "Insulug", T&B "Sta-Kon", or approved equal.

F. Lug Terminations for Power Wiring:

1. Long barrel, compression type, copper body, on hole for #8 AWG to #2/0 AWG.
2. Long barrel, compression type, copper body, two hole, for #3/0 AWG and larger.
3. 600 volt rated.
4. Make:
   a. One-hole lug: Burndy "Hylug", T&B 54900 Series, or approved equal.
   b. Two-hole lug: Burndy "Hylug", T&B 54800 Series, or approved equal.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Route wire and cable as required to meet Project Conditions.

B. Install cable in accordance with the NECA "Standard of Installation."

C. Use stranded conductors for control circuits.

D. Use conductor not smaller than 12 AWG for power and lighting circuits.

E. Use conductor not smaller than 16 AWG for control circuits.

F. Use 10 AWG conductors for 20 ampere, 120 volt branch circuits longer than 100 feet.

G. Identify and color code wire and cable under provisions of this section. Identify each conductor with its circuit number or other designation indicated.

H. Install cables in raceway as called for after the entire raceway system has been completed.

I. Install splices and connections in accessible outlet, pull, and junction boxes.

J. Insulate all splices and connections with UL Labeled plastic tape, heat shrink tubing, or plastic molded caps.

K. All wiring systems shall be properly grounded and continuously polarized throughout, following the color coding specified.

L. Provide a green equipment ground with all feeders and all branch circuits' size per the NEC.

M. Provide dedicated white insulated neutral conductor for each branch circuit. Shared neutrals are not allowed.

N. Install a maximum of three phase conductors, three neutral conductors, and one grounding conductor in each home run. (Obtain approval for additional conductor fill where field conditions require. Adhere to NEC de-rating requirements.)

O. Provide stranded wire to motors, transformers, equipment, and vibrating machinery.

P. Feeder conductors shall be continuous from point of origin to load termination without splice. If this is not practical, contact the Owner's Representative and receive written approval for splicing prior to installation of feeder(s). Where feeder conductors pass through junction and pull boxes, bind and lace conductors of each feeder together. For parallel sets of conductors, match lengths of conductors.

Q. Use pulling means including fish tape, cable, and rope and basket type grips which will not damage cables or raceways. Use approved mechanical pullers for feeders and branch circuits as required for #6 AWG cable and larger. Do not use mechanical means to pull conductors No. 8 or smaller.

R. Branch circuit conductors installed in panelboards, and control conductors installed in control cabinets and panels shall be neatly bound together using "Ty-Raps" or equivalent.

S. Reconnect branch circuit wiring at panelboards as required to obtain a balanced three phase load on the feeders.

T. Properly splice and neatly coil extraneous wires in outlet boxes.

U. Wiring in panelboards and equipment enclosures etc. shall be neatly trained and arranged so as not to preclude access to the space or equipment contained therein. Provide all additional cable supports and ties required to comply.

V. The system shall be properly grounded and continuously polarized throughout, following the color coding specified.

W. Wiring within panelboards, control cabinets, pull boxes, wiring troughs and annunciator and/or alarm panels shall be neatly bundled together with ties not requiring tools to install. Two, three and four wire circuits emerging from the bundle shall be trained and tied individually.

X. Where multiple conductors are installed in a common raceway they shall be pulled simultaneously. Use of pulling compound or lubricant shall be avoided unless absolutely necessary. Where pulling lubricant is required, use UL approved compounds approved for cable type. Lubricant shall meet all OSHA and Toxic Control Act standards.

APPLICATION	CABLE TYPES	DESIGN MAKE
General purpose Construction & Maintenance	Rubber, Neoprene, Nylon, PVC, High Density XLP, Hypalon	Ideal - Yellow 77
High Temperature Construction & Maintenance	Rubber, Neoprene, Nylon, PVC, High Density XLP, Hypalon, Low Density Polyethylene, Semiconducting Jacket	Ideal - Yellow 190
Utility construction & Maintenance	Rubber, Neoprene, Nylon, PVC, High Density XLP, Hypalon, Low Density Polyethylene, Semiconducting Jacket	Aqua-Gell II
Cold Weather Construction & Maintenance	Rubber, Neoprene, Nylon PVC, High Density XLP, Hypalon, Low Density Polyethylene, Semiconducting Jacket	Aqua-Gel CW

3.02 CIRCUITING

A. The following takes precedence over the drawings:

1. General purpose receptacle and lighting branch circuits may be combined in single conduits in accordance with NEC requirements and restrictions.

2. Conductors serving individual pieces of equipment or grouped equipment or isolated ground branch circuits shall not be combined.

3. Provide dedicated Neutrals.

3.03 SPLICES

A. Dry locations: For conductors #10 AWG and smaller use standard spring type pressure connectors or compression type connectors with insulating jackets.

B. For conductors #8 AWG and larger use compression type connectors and insulate in accordance with manufacturer's recommendations.

C. Damp locations: Use same type splices as indicated for dry locations and wrap with moisture sealing tape.

D. Wire runs shall be continuous. All splicing shall be done only in accessible boxes.

3.04 LOW VOLTAGE CONTROL WIRING

A. Low voltage control wiring shall not be run in same conduit system as power feeds. All low voltage control wiring in equipment shall be neatly bundled, identified and installed remote from any and all mechanical moving parts. All low voltage control wiring in walls shall be installed in conduit, the same as required for power wiring. All low voltage wiring above inaccessible ceilings shall be installed in conduit. All low voltage wiring exposed in finished spaces shall be installed in wiremold surface raceway. All low voltage wiring exposed in unfinished spaces shall be installed in conduit. All low voltage control wiring above accessible ceilings shall be bundled, neatly run at right angles and/or parallel to building steel, tied to steel as high as possible with no more than 3" sags; wire may not be laid on ceiling framing or supported by ceiling framing. Low voltage wiring shall not be run between decking flutes or above structural members.

END OF SECTION 260519

SECTION 260526 - GROUNDING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract including the General and Supplementary Conditions of Division 1 of the Specification Sections, apply to the work of this section.

1.02 SECTION INCLUDES

A. Grounding electrodes materials.

B. Grounding and bonding conductor materials.

C. Equipment grounding and bonding requirements.

1.03 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. B3: Soft or Annealed Copper Wire.
2. B8: Concentric-Lay-Stranded Copper Conductors, Hard, Medium Hard, or Soft.
3. B33: Tinned Soft or Annealed Copper Wire for Electrical Purposes.

B. Institute of Electrical and Electronic Engineers (IEEE):

1. 81: Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System.
2. 1100: Powering and grounding sensitive electronic equipment.

C. International Electrical Testing Association (NETA).

D. National Fire Protection Association (NFPA):

1. 70: National Electrical Code (NEC).
2. 780: Lightning Protection Code.

E. Occupational Safety and Health Administration (OSHA):

1. 29CFR 1910.7 Definitions and requirements for Nationally Recognized Testing Laboratories (NRTL).

F. Underwriters Laboratories (UL):

1. 486A: Wire Connectors and Soldering Lugs for Use with Copper Conductors.
2. 467: Grounding and Bonding Equipment.

1.04 QUALITY ASSURANCE

A. Testing Agency Qualifications: A NRTL as defined in OSHA Regulation 1910.7, or a full member company of NETA.

1. Testing Agency Field Supervision: Use persons currently certified by NETA or the National Institute for Certification in Engineering Technologies to supervise on-site testing specified in PART 3.

B. Comply with NFPA 70, National Electrical Code.

C. Comply with UL 467.

D. Listing and Labeling: Provide products specified in this Section that are listed and labeled.

1. The Terms "Listed" and "Labeled": As defined in the National Electrical Code, Article 100.

2. Listing and Labeling Agency Qualifications: A NRTL as defined in OSHA Regulation 1910.7.

1.05 SUBMITTALS

A. Product Data for grounding wiring, grounding rods, connectors and connection materials, ground busses or plates, identification materials and grounding fittings.

B. Qualification data for firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

C. Field tests and observation reports certified by the testing organization and indicating and interpreting the test reports for compliance with performance requirements.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

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

1. Kearney/Cooper Power Systems.
2. Lyncole XIT Grounding.
3. Salisbury: W. H. Salisbury & Co.
4. Thomas & Betts, Electrical.
5. Chance/Hubbell.
6. O-Z/Gedney Co.; a business of the EGS Electrical Group.

2.02 WIRE AND CABLE GROUNDING CONDUCTORS

A. Conform to NEC Table 8, except as otherwise indicated, for conductor properties, including stranding. The requirements below apply for new cables installed as well as for upgrading of identification of existing cables as indicated on drawings.

1. Material: Copper. Use only copper wire for both insulated and bare grounding conductors in direct contact with earth, concrete, masonry, crushed stone, and similar materials.

B. Equipment Grounding Conductors: Insulated with green color insulation.

C. Underground Conductors: Bare, tinned, stranded, except as otherwise indicated.

D. Bare Copper Conductors: Conform to the following:

1. Solid Conductors: ASTM B3.
2. Assembly of Stranded Conductors: ASTM B8.
3. Tinned Conductors: ASTM B33.

E. Color coding of ground cables - Where new or existing cables are concealed and not color-coded, any exposed portion of the cable and each end of the cable for a minimum of 2 feet shall be color coded by green tape overlaid with bright tracer color tape to form the tracer. Where routed through raceways, wire ways, cable trays or under raised floors, the color-coding shall be such that by removing or opening any cover, color-coding shall be visible. Where conductors are routed through cable trays, color-coding for a minimum length of 4 inches shall be accomplished at intervals not exceeding three feet between marking.

2.03 MISCELLANEOUS CONDUCTORS

A. Grounding Plates:

1. Bare or tinned, annealed-copper. Size as per specifications or larger as indicated on drawings.

B. Braided Bonding Jumpers: Where electrical continuity across shock mounts is necessary, bonding jumpers shall be installed across each shock mount. Jumpers of this application should have a maximum thickness of 0.025 inch, so that the damping efficiency of the mount is not impaired. In severe shock and vibration environments, solid straps may be corrugated, or flexible tinned copper wire braid may be used. Braids are to be terminated with tinned copper ferrules.

C. Raceway Bonding Jumpers: Copper, minimum size #6 AWG unless otherwise noted.

2.04 CONNECTOR PRODUCTS

A. Exothermic-Welded Connections: Provided in kit form and selected per manufacturer's written instructions for specific types, sizes, and combinations of conductors and connected items.

PART 3 – EXECUTION

3.01 GENERAL

A. A separate ground conductor (green wire) shall be installed in all raceways for feeders, power and receptacle branch circuits and where called for on drawings.

B. All distribution and branch circuit panels shall have a separate ground bar

C. All metallic conduits 1-1/4" or larger shall have grounding bushings.

D. All type SO cord, or equivalent, shall have a separate ground wire (green) of equal size to circuit conductor.

E. Equipment ground conductor shall be copper with Type THHN insulation, green only, up to and including #4; larger sizes may be bare conductor, or black and identified with green tape.

F. Paint, grease or other contaminates shall be cleaned from all surfaces before bonding ground conductor. (Painted surfaces shall be sanded and cleaned.)

G. Equipment Grounding Conductors: All metallic non-current carrying parts of electrical equipment shall be grounded with equipment grounding conductors whether or not shown on the drawings. Equipment grounding conductors shall be green insulated copper conductors unless otherwise indicated.

1. Install green, equipment grounding conductor with all feeder and branch circuit conductors.

H. Signal and Communication Systems: For telephone, fire alarm, security, voice, and data systems in the equipment room, provide a #4/0 AWG minimum insulated grounding conductor in raceway from grounding-electrode system to each service location, terminal cabinet, wiring closet, and central equipment location.

I. Service Locations and Wiring Closets: Terminate grounding conductor on a multipoint ground plate.

J. Terminal Cabinets: Terminate grounding conductor on cabinet grounding terminal.

K. Enclosures: Ground all enclosures of electrical and electronic wiring and distribution equipment in accordance with requirements of the NEC.

L. Conduit or cable shields shall not be used as the equipment grounding conductor.

M. Equipment Enclosure Grounding: Bare wire, wrapped around connecting screws or mounting bolts and screws is not acceptable as a grounding connection. All ground lugs shall be of a noncorrosive material suitable for use as a grounding connection, and must be compatible with the type of metal being grounded. Ground lugs shall be mounted on clean, bare metal surfaces that are free of paint, rust, etc. Wire brush clean each surface to remove paint or oxidation prior to bolting jumper connectors in place. In general use tinned copper connectors for connections of dissimilar metals. Use of bimetal connectors shall only be allowed in special circumstances and only with the prior written approval.

3.02 CONNECTIONS

A. General: Make connections so possibility of galvanic action or electrolysis is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact will be galvanically compatible.

1. Use electroplated or hot-tin-coated materials to assure high conductivity and to make contact points closer in order of galvanic series.

2. Make connections with clean, bare metal at points of contact.

3. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.

B. Exothermic-Welded Connections: Use for connections to structural steel, where indicated on drawings. Comply with manufacturer's written instructions. Welds that are puffed up or that show convex surfaces indicating improper cleaning are not acceptable and will be redone at the contractor's expense. Utilize 'smokeless' type weld kits for all exothermic welds performed in interior of structure

C. Terminate insulated equipment grounding conductors for feeders with pressure-type grounding lugs. Where metallic raceways terminate at non-metallic or non-conductive housings, terminate each conduit with a grounding bushing. Connect grounding bushings with a bare grounding conductor to the ground bus in the housing. Bond electrically non-continuous conduits at both entrances and exits with grounding bushings and bare grounding conductors.

D. Raceway Grounding: Surface metal raceways, wireways, or cable trays or cable rack systems shall be installed in a manner that ensures electrical continuity. Short insulated green copper bonding jumpers shall be installed between adjacent raceway sections, on both sides of each joint, to ensure proper bonding. Unless otherwise indicated, the minimum size for these bonding jumpers shall be No. 6 AWG. Jumpers shall be provided with compression connectors at each end of cable. Surface metal raceways, wireways, cable trays or cable rack systems shall be field drilled to provide bolting point for securing bonding jumper. Wire brush clean each surface to remove paint or oxidation prior to bolting jumper connectors in place. Bolts and hardware shall be as per details or as

approved for grounding purposes. All metallic raceway penetrations into a facility structure shall be bonded to the earth electrode system.

E. Other Grounding Systems: Any additional grounding systems used for electronic equipment shall be connected to the facility main ground plate, structural steel or exterior earth electrode system as shown on drawings.

F. Tighten grounding and bonding connectors and terminals, including screws and bolts, in accordance with torque tightening values specified in UL 486A.

G. Compression-Type Connections: Use hydraulic compression tools to provide correct circumferential pressure for compression connectors. Mechanical connections using a Burndy "Hyground Connector", Thomas and Betts Compression Connector or equivalent equipment when operated at the manufacturers recommended pressure to develop a minimum force of 12 tons is acceptable as approved pressure connectors. Provide embossing die code or other standard method to make a visible indication that a connector has been adequately compressed on ground conductor. Hydraulically crimped connectors are not acceptable in the lightning protection system.

3.03 RACEWAY SYSTEMS

A. All metal supports, cable trays, frames, sleeves, brackets, braces, etc. for the raceway system, panelboards, switchboards, switches, enclosures, starters, controls, etc., which are not rigidly secured to and in contact with the raceway system, or which are subject to vibration and loosening, shall be bonded to the raceway system. Size the bonding conductor in accordance with NEC Article 250, Table 250-122.

B. Terminate rigid conduit at all boxes, cabinets, and enclosures tightly with two locknuts and a bushing.

C. Conduit which runs to or from all boxes, cabinets, or enclosures having concentric or eccentric knockouts which partially perforate the metal around the conduit and hence impair the continuity of system ground circuits shall be provided with bonding jumpers sized in accordance with NEC Article 250, Table 250-122. Connect the bonding jumper between a grounding type bushing on the conduit and a ground bus or stud inside the box, cabinet, or enclosure.

D. Provide bonding jumpers sized in accordance with NEC Article 250, Table 250-122 for all conduit expansion joints.

E. Provide a grounding conductor in all flexible metallic conduit and liquid-tight conduit, sized in accordance with NEC Article 250, Table 250-122.

F. Provide a grounding conductor in all nonmetallic runs of conduit and raceway, sized in accordance with NEC Article 250, Table 250-122.

G. Provide isolated ground conductors of systems as called for on the plans.

H. Provide bonding bushings and connections in all of the following:

1. Service equipment enclosures.
2. Openings with eccentric or concentric knockouts.
3. Openings using reducing washers.
4. Hazardous locations.
5. Greater than 250V to ground systems.

3.04 SECONDARY ELECTRICAL SYSTEMS

A. Solidly ground all transformer neutral conductors and enclosures to building steel, or a cold water pipe 1" or larger in size as called for in Table 250-122 of the National Electrical Code.

B. Provide an equipment grounding conductor from the point of termination back to the ground bus of the serving panelboard, switchboard, or transformer. Do not splice equipment grounding conductors.

C. Provide an equipment grounding conductors from the point of termination back to the ground bus of the serving panelboard, switchboard, transformer, or switchgear.

D. The grounding conductors contained in the interstices of interlocked armor cable shall be connected to the ground bus at every equipment termination point and to each other and to system ground; ground at every splice location.

3.05 TESTS

A. Grounds and grounding systems shall have a resistance to solid earth ground not exceeding following values:

1. For grounding non-current carrying metal parts associated with secondary distribution system: 25 Ohms.

B. Providing grounding tests to verify the above values. Where these values are not met, add additional ground rods or connections in order to meet these values.

END OF SECTION 260526

SECTION 260533 - CONDUIT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract including the General and Supplementary Conditions of Division 1 of the Specification Sections, apply to the work of this section.

1.02 WORK INCLUDED

A. Galvanized rigid steel conduit.
B. Liquid tight flexible metal conduit.
C. Non-metallic conduit.
D. Fittings and conduit bodies.

1.03 SUBMITTALS

A. Submit for approval a list of each product and the manufacturer.

1.04 REFERENCES

A. ANSI-C80.2, 1983: Specification for Rigid Steel Conduit, Enameled.

B. ANSI C80.3: Electrical Metallic Tubing, Zinc Coated.

C. ANSI/NEMA FB 1: Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies.

D. NECA "Standard of Installation."

E. NEMA TC 2: Electrical Plastic Tubing (EPT) and Conduit (EPC-40 and EPC-80).

F. NEMA TC 3: PVC Fittings for Use with Rigid PVC Conduit and Tubing.

G. NEMA, RN1, 1986: PVC Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit.

H. NEMA, TC 6, 1983: PVC and ABS Plastic Utilities Duct for Underground Installations.

I. NEMA, TC 8, 1983: Extra strength PVC Plastic Utilities Duct for Underground Installations.

J. NEMA, TC 9, 1983: Fittings for ABS and PVC Plastic Utilities Duct and Fittings for Underground Installation.

K. NEMA, TC 10, 1983: PVC and ABS Plastic Communications Duct and Fittings for Underground Installation.

L. The following U.L. Standards:

1. UL 1, 1985: Flexible Metal Electrical Conduit.
2. UL 3, 1984: Flexible Nonmetallic Tubing for Electric Wiring.
3. UL 6, 1981: Rigid Metal Electrical Conduit.
4. UL 360, 1986: Liquidtight Flexible Steel Conduit, Electrical.
5. UL 514B, 1982: Fittings for Conduit and Outlet Boxes.
6. UL 651, 1981: Schedule 40 and 80 PVC Conduit.
7. UL 797, 1983: Electrical Metallic Tubing.
8. UL 870, 1985: Electrical Wireways, Auxiliary Gutters and Associated Fittings.

PART 2 - PRODUCTS

2.01 CONDUIT REQUIREMENTS

A. Minimum Size: 3/4" unless otherwise specified.

B. Underground Installations:

1. Use thickwall non-metallic conduit.

2. Under Slab on Grade: Use thickwall non-metallic conduit.

3. Minimum Size: 1".

C. Outdoor Locations, Above Grade: Use rigid steel conduit.

D. In Slabs Above Grade:

1. Use rigid steel conduit or intermediate metal conduit.

E. Indoor:

1. Concealed: Use electrical metallic tubing.

2. Exposed: Use EMT unless otherwise called for.

2.02 RIGID GALVANIZED STEEL CONDUIT

A. Steel, hot dipped galvanized on the outside and inside, UL categorized as Rigid Ferrous Metal Conduit (identified on UL Listing Mark as Rigid Metal Conduit - Steel or Rigid Steel Conduit).

B. Acceptable manufacturers:

1. LTV Steel
2. Triangle
3. Allied Tube
4. Steel Duct
5. Wheatland

2.03 LIQUID TIGHT FLEXIBLE METAL CONDUIT

A. Flexible Metal Conduit shall be constructed of one continuous length of spirally wound, interlocking zinc coated strip steel. Interior surfaces shall be free from burrs and sharp edges. Provide with a liquid-tight jacket of flexible polyvinyl chloride (PVC). UL categorized as liquid-tight flexible metal conduit (identified on UL Listing Mark as Liquid-Tight Flexible Metal Conduit, also specifically marked with temperature and environment application data).

B. Acceptable manufacturers:

1. Allied
2. American Flexible Conduit
3. Carlon
4. Thomas and Betts

2.04 RIGID NON-METALLIC PVC CONDUIT

A. Extra-Heavy wall conduit: Schedule 80, constructed of polyvinyl chloride, rated for use with 90 degree C conductors, and UL listed for direct burial and normal above ground use.

B. Heavy wall conduit: Schedule 40, constructed of polyvinyl chloride, rated for use with 90 degree C conductors, and UL listed for direct burial and normal above ground use.

C. UL categorized as Rigid Nonmetallic, Schedule 40 and Schedule 80 PVC conduit (identified on UL Listing Mark as Rigid Nonmetallic Conduit Aboveground and Underground Schedule 40; Rigid Nonmetallic Conduit Aboveground and Underground Extra Heavy Wall Schedule 80).

D. Acceptable manufacturers:

1. Carlon/Div. of Lamson and Sessions
2. Beck Mfg./Picoma Industries
3. Cantex Inc.
4. National Pipe & Plastics Inc.
5. Ipex Inc.

2.05 FITTINGS AND ACCESSORIES

A. Rigid galvanized steel fittings shall be fully threaded and shall be of the same material as the respective raceway system.

B. Fittings for liquidtight flexible metal conduit shall have zinc plated steel ferrule, compression type with sealing ring.

C. Fittings for rigid non-metallic conduit shall be solvent cemented in accordance with the manufacturer's instructions.

D. Fittings for PVC coated rigid galvanized steel conduit shall be threaded, hot dipped galvanized, and coated inside and outside with a urethane coating.

E. Connectors shall have insulated throat up to and including 1" size. For sizes 1-1/4" and larger, provide plastic insulating bushing.

F. Die-cast or pressure cast fittings are not permitted.

G. Provide conduit bodies' types, shapes and sizes as required to suit application and NEC requirements. Provide matching gasketed covers secured with corrosion-resistant screws.

H. Insulated Bushings:

1. Threaded, malleable iron/zinc electroplate with 105 degrees C minimum plastic insulated throat; Appleton Electric Co.'s BU50I Series, Cooper/Crouse-Hinds' 1031 Series, OZ/Gedney Co.'s IBC-50 Series, Raco Inc.'s 1132 Series, Steel City/T & B Corp.'s BI-901 Series, or Thomas & Betts Corp.'s 1222 Series.

2. Threaded malleable iron with 150 degrees C plastic throat; Appleton Electric Co.'s BU501 Series, Cooper/Crouse-Hinds' H1031 Series, or OZ/Gedney Co.'s IBC-50 Series.

I. Plastic Bushings for 1/2 and 3/4 Inch Conduit:

1. 105 degrees C minimum temperature rating; Appleton Electric Co.'s BBU50, BBU75, Blackburn (T & B Corp.'s) 50 BB, 75 BB, Cooper/Crouse-Hinds' 931,932, or OZ/Gedney Co.'s IB-50, IB-75, Raco Inc.'s 1402, 1403, Steel City/T & B Corp.'s BU-501, BU-502, or Thomas & Betts Corp.'s 222, 223.

2. 150 degrees C temperature rating; Appleton Electric Co.'s BBU50H, BBU75H, Cooper/Crouse-Hinds' H-931, H-932, or OZ/Gedney Co.'s A-50, A-75.

J. Insulated Grounding Bushings:

1. Threaded, malleable iron/zinc electroplate with 105 degrees C minimum plastic insulated liner, and ground lug; Appleton Electric Co.'s GIB-50 Series, Cooper/Crouse-Hinds' GLL Series, OZ/Gedney Co.'s IBC-50L Series, Raco Inc.'s 1212 Series, Steel City/T & B Corp.'s BG-801 (1/2 to 2") Series, or Thomas & Betts Corp.'s 3870.

2. Threaded malleable iron/zinc electroplate with 150 degrees C plastic insulated liner, and ground lug; Appleton Electric Co.'s GIB Series, Cooper/Crouse-Hinds' HGLL Series, or OZ/Gedney Co.'s IBC-50L Series, or Thomas & Betts Corp.'s 3870.

K. Sealant for Raceways Exposed to Different Temperatures: Sealing compounds and accessories to suit installation; Appleton Electric Co.'s DUC, or Kwiko Sealing Compound with fiber filler, Cooper/Crouse-Hinds' Chico A Sealing Compound with Chico X fiber, Electrical Products Division 3M Scotch products, OZ Gedney Co.'s DUX or EYC sealing compound with EYF damming fiber, or Thomas & Betts Corp.'s Blackburn DX.

L. Vertical Conductor Supports: Kellems/Hubbell Inc.'s Conduit Riser Grips, or OZ/Gedney Co.'s Type M, Type R.

M. Pulling-In-Line for Installation in Spare and Empty Raceways: Polypropylene monofilament utility line; Greenlee Textron Inc.'s Poly Line 430, 431, or Ideal Industries Powr-Fish Pull-Line 31-340 Series.

N. Acceptable manufacturers:

1. O.Z. Gedney
2. Steel City
3. Thomas & Betts
4. Cooper Crouse-Hinds
5. Carlon
6. Raco

2.06 EXPANSION FITTINGS

A. Galvanized steel expansion joints for RGS or EMT conduit, PVC for PVC conduit. Minimum 4" movement in either direction.

B. Weatherproof for outdoor applications.

C. At expansion joints in concrete pours, provide Deflection/Expansion fittings capable of movement of 3/4" in all directions from the normal**.**

D. Design Make: O.Z./Gedney, Type "AX" (exposed), "DX" (Concrete Pour)

E. Acceptable manufacturers:

1. O.Z./Gedney
2. Crouse-Hinds
3. Appleton

2.07 EXPANDABLE CONDUIT PLUGS

A. Seal open underground telecommunications conduits entering the building with expandable conduit plugs with rope ties.

B. Refer to drawings for underground entrance locations.

C. Design Make: Osburn Associates or approved equal.

PART 3 - EXECUTION

3.01 GENERAL

A. Install conduit in accordance with NECA "Standard of Installation".

B. All conduit penetrations through fire-rated construction must be sealed with UL listed fire stopping. Refer to architectural drawings for locations.

C. Size raceways as indicated on the drawings. Where sizes are not indicated, raceways shall be sized as required by the National Electrical Code in accordance with the quantity, size, type and insulation of conductors to be installed.

D. Minimum 1/2" trade size for branch circuit and fire alarm wiring.

E. Minimum 3/4" trade size for voice/data outlets, television outlets, and branch circuit "Home Runs" to panelboards.

F. Group related conduits; support using conduit rack. Construct rack using steel channel; provide space on each for 25% additional conduits.

G. Provide a code compliant ground path between all outlets and the established electrical system ground.

H. Coordinate all raceway runs with other trades.

I. Do not install raceways adjacent to hot surfaces or in wet areas. Maintain 12" clearance between conduit and surfaces with temperatures exceeding 104° F (40° C).

J. Provide expansion fittings with external grounding straps at building expansion joints.

K. Arrange neatly to permit access to the raceway, outlet, pull, and junction boxes, and work installed by other trades.

L. Use conduit hubs or sealing locknuts to fasten conduit to sheet metal boxes in damp and wet locations.

M. All exposed conduit mounted to a painted surface shall be painted to match that surface.

N. Avoid moisture traps; provide junction box with drain fitting at low points in conduit system.

O. Provide at least one junction or pullbox for each 360 degrees of bends.

P. Provide green ground wire in all EMT, flexible conduit, and non-metallic conduit.

3.02 INSTALLATION

A. Install raceways parallel or perpendicular to building walls, floors and ceilings.

B. Cut raceways square, ream ends to remove burrs, and bush where necessary.

C. Route conduit in and under slab from point to point. Do not cross conduits in slab. Provide U.L. approved rain-tight and concrete tight couplings and connectors. All conduit in concrete floor slabs shall be rigid galvanized steel with concrete tight threaded fittings. Install conduit below the reinforcing mesh. Locate conduits to provide a minimum of 1" of concrete around conduit. Obtain approval from the Owner's Representative prior to installing conduit larger than 1" trade size in concrete slabs.

D. Install with a minimum of bends and offsets. Bends shall not kink or destroying the interior cross section of the raceway. Factory made bends shall be used for raceways 1" trade size and larger.

E. Support raceways from building construction. Do not support raceways from ductwork, piping, or equipment hangers. Arrange supports to prevent misalignment during wiring installation. Support conduit using coated steel or malleable iron straps, lay in adjustable hangers, clevis hangers, and split hangers. Do not attach conduit to ceiling support wires. Do not support conduit with wire or perforated pipe straps. Remove wire used for temporary supports.

F. Plug the ends of each roughed-in raceway with an approved cap or disc to prevent the entrance of foreign materials during construction.

G. Secure conduit within three feet of each outlet box, junction box, cabinet or fitting.

H. Provide a #14 AWG fish wire in all "Spare" or "Empty" conduit runs to facilitate future installation of conductors.

I. Provide expansion fittings where conduits cross building expansion joints.

J. Wherever a cluster of (4) or more conduits rise out of floor exposed, provide neatly formed 4 in. high concrete envelope, with chamfered edges, around raceways.

K. Provide 4 spare 3/4-in. raceways from each flush mounted panelboard or cabinet to an area above the nearest accessible ceiling space. Make 90^{o} turn above the ceiling, arranged for further continuation of raceway, and cap.

L. Join non-metallic conduit using cement as recommended by manufacturer. Wipe non-metallic conduit dry and clean before joining. Apply full even coat of cement to entire area inserted in fitting. Allow joint to cure for 20 minutes, minimum.

M. Where conduits puncture roof, install pitch pockets as required in order that the roof warranty is maintained.

N. If it is necessary to burn holes through webs of beams or girders, call such points to the attention of the Owner's Representative and receive written approval both as to location and size of hole before proceeding with work. All holes shall be burned no larger than absolutely necessary.

O. Core drill, sleeve, and fire stop all penetrations through existing floors.

P. In exterior or wet locations, provide minimum 1/4" air space between raceway and wall. Secure raceway within 3 ft. of each outlet box, junction box, cabinet or fitting.

Q. Provide conduit supports based on the following table:

Conduit Trade Size	Type of Run	Horizontal Spacing in Feet	Vertical Spacing in Feet
1/2", 3/4"	Concealed	7	10
1", 1-1/4"	Concealed	8	10
1-1/2" & larger	Concealed	10	10
1/2", 3/4"	Exposed	5	7
1", 1-1/4"	Exposed	7	8
1-1/2" & larger	Exposed	10	10

R. Conceal conduits in all locations except for mechanical and equipment rooms. Obtain owner's permission to run exposed conduits in other areas if existing conditions warrant exposed conduit.

3.03 RACEWAYS FOR FUTURE USE (SPARE RACEWAYS AND EMPTY RACEWAYS)

A. Draw fish tape through raceways in the presence of the Owners Representative to show that the raceway is clear of obstructions. Leave a pulling-in line in each spare and empty raceway.

3.04 RACEWAY INSTALLATION - SPECIAL AREAS

A. Heated Areas to Unheated Areas: After conductors are installed, seal interior of the raceway at the nearest conduit body, outlet or junction box in the heated area adjoining the unheated area.

3.05 RACEWAY SCHEDULE

A. Rigid Ferrous Metal Conduit

1. Exterior above grade.
2. Interior (Treatment Plant)
3. Transition elbows from above to below grade.
4. Where specifically called for on plans.

B. Liquid-tight Flexible Metal Conduit: Install equipment grounding conductor in liquid-tight flexible metal conduit and bond at each box or equipment to which conduit is connected:

1. Use 1 to 3 feet of liquid-tight flexible metal conduit (UL listed and marked suitable for the installation's temperature and environmental conditions) for final conduit connection to:
   a. Motors with weather-protected or totally enclosed housings.
   b. Equipment subject to vibration (damp and wet locations).
   c. Equipment requiring flexible connection for adjustment or alignment (damp and wet locations).

C. Rigid Nonmetallic PVC Conduit:

1. Schedule 80:
   a. Exterior underground
   b. Exterior above ground only when specifically noted on plans.

3.06 FITTINGS AND ACCESSORIES SCHEDULE

A. General:

1. Use fittings and accessories that have a temperature rating equal to, or higher than the temperature rating of the conductors to be installed within the raceway.

2. Use zinc electroplate or hot dipped galvanized steel/malleable iron or cast iron alloy fittings and accessories in conjunction with ferrous raceways in dry and damp locations unless otherwise specified or indicated on the drawings.

3. Use insulated grounding bushings or grounding wedges on ends of conduit for terminating and bonding equipment grounding conductors, when required, if cabinet or boxes are not equipped with grounding/bonding screws or lugs.

4. Use caps or plugs to seal ends of conduits until wiring is installed to exclude foreign material.

5. Use insulated grounding bushings on the ends of conduits that are not directly connected to the enclosure, such as stub-ups under equipment, etc., and bond between bushings and enclosure with equipment grounding conductor.

6. Use expansion fittings where raceways cross expansion joints (exposed, concealed, buried).

7. Use deflection fittings where raceways cross expansion joints that move in more than one plane.

8. Use 2 locknuts and an insulated bushing on end of each conduit entering sheet metal cabinet or box in dry or damp locations.

9. Plastic bushing may be used on 1/2 and 3/4 inch conduit in lieu of insulated bushing.

10. Terminate conduit ends within cabinet/box at the same level.

B. For Rigid Metal Conduit: Use threaded fittings and accessories. Use 3 piece conduit coupling where neither piece of conduit can be rotated.

C. For Liquid-tight Flexible Metal Conduit: Use liquid-tight connectors.

D. For Rigid Nonmetallic PVC Conduit: Use conduit manufacturer's standard fittings and accessories.

END OF SECTION 260533

SECTION 260540 - BOXES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract including the General and Supplementary Conditions of Division 1 of the Specification Sections, apply to the work of this section.

1.02 WORK INCLUDES

A. Outlet boxes.

B. Pull and junction boxes.

1.03 REFERENCES

A. NECA - Standard of Installation.

B. NEMA FB 1 - Fittings and Supports for Conduit and Cable Assemblies.

C. NEMA OS 1 - Sheet-steel Outlet Boxes, Device Boxes, Covers, and Box Supports.

D. NEMA OS 2 - Nonmetallic Outlet Boxes, Device Boxes, Covers and Box Supports.

E. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).

F. NFPA 70 - National Electrical Code.

1.04 REGULATORY REQUIREMENTS

A. Conform to requirements of NFPA 70.

B. Provide Products listed and classified by Underwriters Laboratories, Inc. as suitable for the purpose specified and indicated.

1.05 SUBMITTALS FOR REVIEW

A. Provide Product Data for the following:

1. Outlet boxes
2. Pull and junction boxes

PART 2 - PRODUCTS

2.01 OUTLET BOXES

A. Sheet Metal Outlet Boxes: NEMA OS 1, galvanized steel. Not less than 1-1/2" deep, 4" square or octagonal, with knockouts. Outlet boxes exposed to moisture, exterior, wet or damp locations shall be cadmium cast alloy complete with threaded hubs and gasketed screw fastened covers. Minimum box size shall be as indicated in Article 314 of the National Electrical Code for the conductors and devices installed. Boxes shall be approved for the environmental condition of the location where they will be installed.

B. Luminaire and Equipment Supporting Boxes: Rated for weight of equipment supported; include 1/2" male fixture studs where required.

C. Acceptable manufacturers:

1. Steel City
2. Raco
3. Appleton
4. Crouse Hinds

2.02 PULL AND JUNCTION BOXES

A. Sheet Metal Boxes: NEMA OS 1, galvanized steel. Shall be constructed of not less than 14 gauge galvanized steel with trim for flush or surface mounting in accordance with the location to be installed. Provide screw-on type covers. Boxes installed in damp or wet locations shall be of raintight construction with gasketed cover and threaded conduit hubs. In no case shall boxes be sized smaller than as indicated in Article 314 of the National Electrical Code for conduit and conductor sizes installed. Boxes shall be approved for the environmental condition of the location where they will be installed.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify locations of boxes and outlets prior to rough in. Thoroughly examine the architectural elevations and millwork shop drawings.

B. If outlets are not specifically shown on elevations and there is millwork or equipment associated with the outlets issue an RFI prior to rough in.

3.02 INSTALLATION

A. Install boxes in accordance with NECA "Standard of Installation."

B. Install in locations as shown on Drawings, and as required for splices, taps, wire pulling, equipment connections and compliance with regulatory requirements. Install junction and pull boxes in readily accessible locations. Access to boxes shall not be blocked by equipment, piping, ducts and the like. Provide all necessary junction or pull boxes required due to field conditions and size as required by the National Electrical Code.

C. Consider location of outlets shown on drawings as approximate only. Study architectural, process piping, mechanical, plumbing, structural, roughing-in, etc., drawings and note surrounding areas in which each outlet is to be located. Locate outlet so that when fixtures, motors, cabinets, equipment, etc., are placed in position, outlet will serve its desired purpose. Where conflicts are noted between drawings, contact Owner's Representative for decision prior to installation. Comply with Article 314 of National Electrical Code relative to position of outlet boxes in finished ceilings and walls. Adjust box location up to 10 feet if required to accommodate intended purpose.

D. Orient boxes to accommodate wiring devices oriented as specified in Section 262726

E. Maintain headroom and present neat mechanical appearance.

F. Install boxes to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Division 1.

G. Coordinate mounting heights and locations of outlets mounted above counters, benches, and backsplashes.

H. Align adjacent wall mounted outlet boxes for switches, thermostats, and similar devices.

I. Support boxes independently of conduit.

J. Use gang box with plaster ring for single device outlets.

K. Use cast outlet box in exterior locations exposed to the weather and wet locations.

L. Outlet boxes shall be sized to accommodate the wiring device(s) to be installed.

M. Surface ceiling mounted outlet boxes shall be minimum 4" square, 1-1/2" deep, galvanized sheet metal.

N. Surface wall mounted outlet boxes shall be cast type boxes having threaded or compression type threadless hubs. Exterior boxes shall be cast type with threaded hubs and gasketed cover plates secured by non-ferrous screws.

O. Unless otherwise noted, mount devices and equipment at heights measured from finished floor to device/equipment centerline as follows:

1.	Toggle switches	46"
2.	Receptacle outlets	18"
3.	Receptacle outlets, weatherproof, above-grade	24"
4.	Branch circuit panelboards, to top of backbox	72"
5.	Terminal cabinets, control cabinets	72"
6.	Disconnect switches, motor starters, enclosed circuit breakers	48"

7. Where structural or other interference's prevent compliance with mounting heights listed above, consult Owner's Representative for approval to change location before installation.

3.03 INTERFACE WITH OTHER PRODUCTS

A. Coordinate installation and location of outlet box for equipment with equipment supplier and other trades as applicable.

B. Cut boxes in millwork using methods approve by manufacturer and architect.

3.04 ADJUSTING

A. Adjust flush mounting outlets to make front flush with finished wall material.

B. Adjust vertical and horizontal alignment of boxes as required.

C. Install knockout closures in unused box openings.

3.05 CLEANING

A. Clean interior of boxes to remove dust, debris, and other material.

B. Clean exposed surfaces and restore finish.

END OF SECTION 260540

SECTION 260541 - UNDERGROUND ENCLOSURES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract including the General and Supplementary Conditions and Division 1 Specifications Sections, apply to the work of this section.

1.02 SUBMITTALS

B. Manufacturer's catalog sheets, specifications and installation instructions.

C. Shop Drawing; show dimensions and construction details.

PART 2 - PRODUCTS

2.01 POLYMER PRECAST CONCRETE PULLBOX

A. UL Listed to the ANSI National Standard ANSI/SCTE 77 2007

B. Tier 15 minimum load rating

C. Provide one-piece, load-rated, pre-cast polymer concrete cover with descriptive logo.

D. Design Equipment/Make: Quazite PG series or equal

2.02 MISCELLANEOUS HARDWARE

A. Provide miscellaneous bolts, washers, nuts, clips, lock nuts, lock washers, anchor bolts, inserts, braces, boxes, clamps, fittings, pins, rods, shims, supports, etc., to make installations and work complete and operational.

PART 3 - EXECUTION

3.01 INSTALLATION - GENERAL

A. Coordinate installation of other equipment associated with the service and distribution system.

B. Provide installation for equipment, in accordance with the equipment manufacturer's instructions, drawings, and recommendations, and as called for.

C. In the event of conflict, discrepancy or difference between manufacturer's instructions and Contract Documents, the more stringent requirements shall apply.

D. Repair or replace all existing utilities and facilities damaged due to installation, as part of contract.

3.02 PULLBOX INSTALLATION

A. Excavation and size as recommended by manufacturer.

B. Provide geotextile fabric and a minimum of 6 in. of "pea gravel" placed on undisturbed earth under the enclosure in accordance with manufacturer's recommendations. Manually tamp backfill every 6”.

C. Set true and level at depth as called for.

D. Avoid installing pullboxes in vehicular traffic areas. Where pullboxes are required in drives or parking areas, locate at adjacent walk or lawn areas if possible and provide tier 15 rated covers as a minimum.

E. Make grounding connections at pullboxes.

END OF SECTION 260541

SECTION 262400 - POWER DISTRIBUTION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract including the General and Supplementary Conditions of Division 1 of the Specification Sections, apply to the work of this section.

1.02 SECTION INCLUDES

A. Circuit Breakers.
B. Branch Circuit Panelboards.
C. Disconnect Switches.
D. Enclosed Circuit Breakers.
E. Low Voltage Fuses.

1.03 REFERENCES

A. The equipment referenced herein are designed and manufactured according to the following appropriate specifications.

1. ANSI/NFPA70 - National Electric Code (NEC).
2. ANSI/IEEE C12.1 - Code for Electricity Metering.
3. ANSI C39.1 - Electrical Analog Indicating Instruments.
4. ANSI C57.13 - Instrument Transformers.
5. NEMA AB 1 - Molded Case Circuit Breakers and Molded Case Switches.
6. NEMA KS 1 - Enclosed Switches.
7. NEMA PB 2 - Deadfront Distribution Switchboards, File E8681.
8. NEMA PB 2.1 - Proper Handling, Installation, Operation & Maintenance of Deadfront Switchboards Rated 600V or Less.
9. NEMA PB 2.2 - Application Guide for Ground Fault Protective Devices for Equipment.
10. UL 50 - Cabinets and Boxes.
11. UL 98 - Enclosed and Deadfront Switches.
12. UL 489 - Molded Case Circuit Breakers.
13. UL 891 - Dead Front Switchboards.
14. UL 943 - Ground Fault Circuit Interrupters.
15. UL 1053 - Ground Fault Sensing and Relaying Equipment.
16. UL 977 - Fused Power Circuit Devices.
17. CSA 22.2 No. 5 - M1986 Molded Case Circuit Breakers.
18. Federal Specification W-C-375B/Gen - Circuit Breakers, Molded Case, Branch Circuit and Service.
19. Federal Specification W-C-870 - Fuseholders (for plug and enclosed cartridge fuses).
20. Federal Specification W-S-865 - Enclosed Knife Switch.
21. NECA Standard of Installation (published by the National Electrical Contractors Association).

22. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment (published by the International Electrical Testing Association).
23. NFPA 70 - National Electrical Code.

1.04 SUBMITTAL FOR REVIEW

A. Shop Drawings: Indicate outline and support point dimensions, voltage, main bus ampacity, integrated short circuit ampere rating, circuit breaker arrangement and sizes.

1.05 SUBMITTALS FOR CLOSEOUT

A. Maintenance Data: Include spare parts listing; source of replacement parts and supplies; and recommended maintenance procedures and intervals.

1.06 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum (10) years' experience.

1.07 DELIVERY, STORAGE AND HANDLING

A. Deliver, store, protect and handle products in conformance with manufacturer's recommended practices as outline in applicable Installation and Maintenance Manuals.

B. Each switchboard section shall be delivered in individual shipping splits for ease of handling. They shall be individually wrapped for protection and mounted on shipping skids.

C. Inspect and report concealed damage to carrier within their required time period.

D. Store in a clean, dry space. Maintain factory protection and/or provide an additional heavy canvas or heavy plastic cover to protect structure from dirt, water, construction debris, and traffic. Where applicable, provide adequate heating within enclosures to prevent condensation.

E. Handle in accordance with NEMA PB 2.1 and manufacturer's written instructions. Lift only by lifting means provided for this express purpose. Handle carefully to avoid damage to switchboard internal components, enclosure, and finish.

PART 2 - PRODUCTS

2.01 CIRCUIT BREAKERS

A. General:

1. Molded case circuit breakers shall be constructed of a glass reinforced insulating material. All current carrying components shall be completely insulated and isolated from the outside of the circuit breaker.

2. Provide an over-center, trip-free handle to provide quick-make, quick-break contact action.

3. Provide multi-pole breakers with common trip.

4. When the circuit breaker has tripped, the handle shall move to a position between the "on" and "off" positions. Provide a visual indication that the circuit breaker has tripped.

5. The ampere rating shall be clearly marked on the face of the circuit breaker.

6. Any series rated fuse/circuit breaker installations shall be UL listed as recognized component combinations. Provide a label at the Series rated device reading "Caution - Series Rated System. _____A available". Provide identical replacement of equipment".

7. Make provisions to add circuit breaker handle locks.

8. Circuit breakers shall have voltage, ampere, and interrupting ratings as called for on the Panelboard Schedule.

9. Where the highest continuous current trip setting is or can be adjusted to1200A or higher Reduced Energy Let-through setting (RELT) is required.

B. Thermal Magnetic Molded Case Branch Circuit Breakers:

1. Permanent trip unit containing individual thermal and magnetic trip elements.

2. Thermal trip unit shall be long time, non-adjustable, thermal overload trip.

3. Magnetic trip unit shall be instantaneous, electro-magnetic trip. Magnetic trip unit shall be adjustable for all frame sizes 225 amperes and larger.

4. Interchangeable rating plugs shall be provided for all frame sizes 400 amperes and larger.

5. 60°C terminal temperature rating for circuit breakers rated 125 amperes or below.

6. 75°C terminal temperature rating for circuit breakers rated above 125 amperes.

7. All 20 and 30 ampere, single pole circuit breakers shall be UL listed for switching duty.

8. Circuit breakers shall be plug-on [bolt-on]. I-Line type distribution circuit breakers are acceptable.

9. Circuit breakers rated 250 amperes and below shall be UL listed HACR type.

10. Where ground fault circuit breakers are required, provide a shunt trip circuit breaker with a zero sequence sensing ground fault module.

11. Design Make: Square D QO, QOB (250 volt), EH, EHB (480 volt), I-Line style (600 volt).

12. Acceptable Manufacturers:
    a. Square D.
    b. General Electric.
    c. Cutler Hammer/Eaton
    d. Siemens.

2.02 SMALL UNIT SUBSTATION

A. Packaged Unit Substation consisting of:

1. Primary Main Circuit Breaker
2. Sealed Step-Down Transformer
3. Secondary Main Circuit Breaker
4. Distribution Panelboard (See 240V Panelboard Specifications, Section 2.4)

B. Type 3R enclosure; suitable for both indoor and outdoor use

C. Rated for Service Entrance use where called for.

D. 185°C (365°F) insulation with 115°C (239°F) temperature rise

E. Sealed, epoxy-resin encapsulated transformer

F. Copper Busing

G. Design Make: Square D Mini Power Zone.

H. Acceptable Manufacturers:

1. Square D
2. General Electric
3. Eaton/Cutler Hammer
4. Siemens ITE

2.02 DRY TYPE RESIN ENCAPSULATED

A. Transformer coils shall be of the continuous copper wound construction.

B. All insulating materials are to exceed NEMA ST20 standards and be rated for 180°C UL component recognized insulation system.

C. Transformers shall be 80°C temperature rise above 40°C ambient. 80°C rise transformers shall be capable of carrying a continuous 15% overload without exceeding 115°C rise in a 40°C ambient. Transformers 25kVA and larger shall have a minimum of 4 - 2.5% full capacity primary taps. Exact voltages and taps to be as designated on the plans or the transformer schedule.

D. The maximum temperature of the top of the enclosure shall not exceed 65°C rise above a 40°C ambient.

E. All cores to be constructed of high grade, non-aging silicon steel with high magnetic permeability and low hysteresis and eddy current losses. Magnetic flux densities are to be kept well below the saturation point.

F. Terminations shall consist of wire leads with minimum insulation rating of 125°C.

G. The transformer enclosures shall be non-ventilated and be fabricated of heavy gauge, sheet steel construction. The entire enclosure shall be finished utilizing a continuous process consisting of degreasing, cleaning and phosphatizing by electrostatic deposition of polymer polyester powder coating and baking cycle to provide uniform coating of all edges and surfaces. The coating shall be UL recognized for outdoor use. The coating color shall be ANSI 49.

H. Sound levels shall be warranted by the manufacturer not to exceed the following:

1. 0 to 9KVA - 37dB.
2. 10 to 30kVA - 42dB.
3. 31 to 50kVA - 45dB.
4. 51 to 150kVA - 50dB.
5. 151 to 225kVA-55dB.

2.03 DISCONNECT SWITCHES

A. Three pole, single throw, or as called for on the drawings.

B. Quick-make, quick-break switch operating mechanism.

C. Heavy-duty, current rating as called for on the drawings, voltage rating as required by the equipment served.

D. All current carrying parts shall be plated to resist corrosion.

E. Lugs shall be removable and rated for 75°C temperature rating.

F. Switch blades shall be visible when the switch is in the open position and the door is open.

G. Switch shall be padlockable in the OFF and ON positions.

H. Provide fusible switches with rejection type fuse holders and fuses as indicated on the plans or as per fed equipment requirements.

I. Provisions for a field installable electrical interlock.

J. Provide external override mechanism to open the disconnect switch door without opening the disconnect switch.

K. Enclosure shall be steel with gray baked enamel paint.

L. Provide NEMA type enclosures as called for on the drawings.

M. NEMA type 1 enclosures shall be equipped with knockouts.

N. Design Make: Square D.
O. Acceptable Manufacturers:

1. Square D.
2. General Electric.
3. Cutler Hammer.
4. Siemens.

2.04 LOW VOLTAGE FUSES

A. All fuses rated 600 volts and below shall be rejection type dual-element, time-delay type. Provide (1) complete set(s) of fuses for all fusible disconnect switches, plus (3) spare fuses of each size. Deliver spare fuses to the Owner and obtain receipt.

B. Acceptable manufacturers: Fuses 600 amperes and below: Bussman Type FRN-R (300 volts), Type FRS-R (600 volts) or equivalent.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install equipment to coordinate with installation details of other equipment associated with the power distribution system.

B. Provide miscellaneous bolts, washers, nuts, clips, lock washers, small hardware, etc., of durium or equal rust resistant material, to make a complete installation.

C. Provide complete installation in strict accordance with the equipment manufacturer's instructions, drawings and recommendations and as called for.

D. In the event of conflict, discrepancy or difference between manufacturer's instructions and Contract Documents, the more stringent requirements shall apply.

E. Unload, move, handle, set in place, install, erect, assemble, connect, test, and operate, etc. all items of electrical equipment as required.

F. Provide rigging to unload, move, transport, set in place, erect, etc. the switchboards.

G. Provide grounding as called for.

H. Provide minimum working clearance as described in NEC Article 110-26 and 110-34 for all electric equipment.

I. Provide additional working or aisle clearance as called for.

J. Verify cable/lug sizes for terminations. Where a feeder is sized larger than the lug, provide in-line splice to reduce conductor size to match equipment or breaker terminations.

3.02 INSTALLATION OF PANELBOARDS

A. Install panelboards in accordance with NEMA PB 1.1 and the NECA "Standard of Installation."

B. Install panelboards plumb. Install recessed panelboards flush with wall finishes.

C. Height: 6 feet to top of panelboard if possible. If required, install panelboard with the so that the center operating grip of the top breaker is not more than 6'-7" above the finish floor.

D. Provide filler plates for unused spaces in panelboards.

E. Provide typed circuit directory for each branch circuit panelboard. Revise directory to reflect circuiting changes required to balance phase loads.

F. Provide engraved plastic nameplates under the provisions of section 260195.

G. Provide spare conduits out of each recessed panelboard to an accessible location above ceiling. Minimum spare conduits: (5) 3/4". Identify each as SPARE.

H. Ground and bond panelboard enclosure according to section 260526.

I. Securely support all panelboard enclosures to walls. Install true and level.

J. Provide four empty 3/4" conduits and one empty 1-1/2" conduit from each flush mounted panelboard backbox to the accessible ceiling space.

K. Provide channel support between the wall and backbox for panelboards installed on outside walls.

L. Tighten all bolt and lug connections using a torque wrench or screwdriver per the manufacturer's recommendations.

M. Measure steady state load currents on each panelboard feeder. Rearrange branch circuits in the panelboard to balance the load within 20% of each other. Maintain proper phasing.

N. For buildings with more than one nominal voltage system, provide permanently post label at each panelboard indicating the color coding of all phase, neutral, and grounding conductors

O. Where boxes are installed flush in a fire rated wall provide an approved endothermic wrap around the entire enclosure. Design Make: 3M Fire Protection Products. Seal conduit penetrations with approved fire putty.

3.03 FIELD QUALITY CONTROL

A. Inspect and test in accordance with NETA ATS, except Section 4.

B. Perform inspections and tests listed in NETA ATS, Section 7.4 for switches, and Section 7.5 for circuit breakers.

3.04 ADJUSTING

A. Measure steady state load currents at each panelboard feeder; rearrange circuits in the panelboard to balance the phase loads to within 20% of each other. Maintain proper phasing for multi-wire branch circuits.

END OF SECTION 262400

SECTION 262726 - WIRING DEVICES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract including the General and Supplementary Conditions of Division 1 of the Specification Sections, apply to the work of this section.

1.02 SECTION INCLUDES

A. Receptacles.
B. Cover plates.

1.03 REFERENCES

A. NECA - Standard of Installation.
B. NEMA WD 1 - General Requirements for Wiring Devices.
C. NEMA WD 6 - Wiring Device - Dimensional Requirements.
D. NFPA 70 - National Electrical Code.

1.04 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum (3) years' experience.

1.05 COORDINATION

A. The contractor and lighting fixture manufacturer are responsible for coordinating and guaranteeing that the driver/ballast dimmer combination will dim the driver or ballast to 1% or 10% as applicable. Utilize design make or acceptable manufacturers where possible. Provide equivalent devices from alternate manufacturers where required.

1.06 REGULATORY REQUIREMENTS

A. Conform to requirements of NFPA 70.

B. Provide Products listed and classified by Underwriters Laboratories, Inc., as suitable for the purpose specified and indicated.

PART 2 - PRODUCTS

2.01 GENERAL

A. Color of devices shall be as selected by the Architect.

B. All devices must be specification grade at a minimum.

C. Where devices are ganged together provide multi-device cover plates configured as required.

D. Design Makes are from Pass & Seymour. Equivalent products from the following manufacturers are acceptable.

1. Hubbell.
2. Leviton.
3. Lutron.

2.02 GFCI RECEPTACLES

A. 20 ampere rated.

B. No exposed terminals to a finger safe application before, during, and after installation.

C. Built-in connector features large brass terminal blades to ensure consistent, reliable electrical connections to Plug Connector.

D. Protection: if critical components are damaged and ground fault protection is lost, power to receptacle is disconnected.

E. Prevents line-load reversal miswire: no power to the face or downstream receptacles if wired incorrectly.

F. FSUL Listed (Federal Specification WC596).

G. Exceeds UL943 voltage surge requirements; survives 100x the required UL 3kA/6kV voltage surge test cycles.

H. Trip indicator light (red LED).

I. Mounting screws are shipped captive in the device and wall plate for easier installation.

J. High-impact-resistant thermoplastic construction.

K. Zinc-plated steel mounting strap.

L. Button colors matching the device face.

M. Dual-direction test and reset buttons.

N. Class A rated GFCI.

O. Provide LED type where indicated for healthcare applications.

P. Provide Weather Resistant (WR) listed for receptacles installed in damp and wet locations.

Q. Design Make: Pass & Seymour PT2095 Series;

2.03 COVER PLATES

A. Weatherproof Cover Plates:

1. Weatherproof plastic in-use cover
2. Horizontal/vertical cover in clear MM410C that safely covers any electrical outlet
3. Universal Fit to enable same product for all types of receptacles.
4. Attached gasket and mounting hardware
5. Meet or exceeds OSHA and NEC (article 406.8[b][1] wet location requirements with the cord plugged into the receptacle.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Prior to installation verify that outlet boxes are cut in at proper height; that wall openings are neatly cut and will be completely covered by wall plates.

B. If wall openings were made by general trades notify that contractor and owners representative and direct the cutting and patching requirements. If the openings were made by electrical contractor cut and patch opening using a qualified trades person.

3.02 INSTALLATION

A. Install in accordance with NECA "Standard of Installation."

B. Install devices plumb and level.

C. Install receptacles with grounding pole on top.

D. Connect wiring device grounding terminal to outlet box with bonding jumper and to branch circuit equipment grounding conductor.

E. Connect wiring devices by wrapping conductor around screw terminal.

F. Install galvanized steel plates on outlet boxes and junction boxes in unfinished areas and above accessible ceilings.

G. Install protective rings on active flush cover service fittings.

H. When receptacle is mounted horizontally, neutral pole shall be on top.

I. Provide receptacles at locations indicated and where required by special equipment with plug connection. Mount at height 18" AFF; unless noted otherwise on drawings.

3.03 FIELD QUALITY CONTROL

A. Inspect each wiring device for defects.

B. Verify that each receptacle device is energized.
C. Test all receptacles for proper voltage, grounding and polarity.

D. Test all GFCI receptacles for proper voltage, polarity, grounding, and verify the receptacle trips at 6 milliamperes or less.

E. Test all receptacles for polarity, ground continuity and ground blade retention force per NFPA 99 Chapter 3-3 Section 3-3.3.3.

F. Rewire receptacles as required until receptacles test properly.

G. Clean exposed surfaces to remove splatters and restore finish.

3.04 FUNCTIONAL TESTING

A. Contractor shall submit a written report to Architect, copy to Engineer, on results of each functional test on equipment installed. Report shall contain owner's representative's signature.

3.05 DEVICE PLATES

A. Provide at locations indicated with size openings required for devices indicated.

B. Multi-gang switches, receptacles, etc. shall be in a common one piece plate.

END OF SECTION 262726

SECTION 265010 - LIGHTING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract including the General and Supplementary Conditions of Division 1 of the Specification Sections, apply to the work of this section.

1.02 SECTION INCLUDES

A. LED drivers and light engines.

1.03 STANDARDS REFERENCES

A. Consortium for Energy Efficiency (CEE).

B. Design Lighting Consortium (DLC).

C. Energy Star.

D. NEMA Compliance: Comply with applicable requirements of NEMA Standards Pub. No. LE-1 and LE-2 pertaining to lighting equipment.

E. ECCC of New York State Compliance: Comply with applicable requirements of the 2020 New York State Building Code.

F. ANSI 132.1.

G. ANSI C78.379: Electric Lamps Incandescent and High Intensity Discharge Reflector Lamps Classification of Beam Patterns.

H. ANSI C82.1: Ballasts for Fluorescent Lamps Specifications.

I. ANSI C82.4: Ballasts for High Intensity Discharge and Low Pressure Sodium Lamps (Multiple Supply Type).

J. ANSI/UL Compliance: Comply with ANSI/UL standards pertaining to lighting fixtures for hazardous locations.

K. UL Compliance: Provide lighting fixtures which have been UL listed and labeled.

L. CBM Labels: Provide fluorescent lamp ballasts which comply with Certified Ballast Manufacturer's Association standards and carry the CBM label.

M. FCC Part 15

N. IEEE C62.41: Guide for Surge Voltages in Low-Voltage AC Power Circuits.

O. NFPA 70: National Electrical Code.

P. NFPA 101: Life Safety Code.

Q. Testing Standards: IESLM79- 08.

R. UL1449 3rd Edition Type 4-Surge Protective Devices.

S. RoHS Compliant (Restriction of Use of Hazardous Substances).

1.04 SUBMITTALS FOR REVIEW

A. Product Data: Provide dimensions, ratings, and performance data. Information on each fixture shall include:

1. Manufacturer and Catalog Number.
2. Dimensioned Construction Drawing(s).
3. Standard Catalog "Cut" Sheet with options highlighted.
4. Photometric Data.
5. Ballast or Driver specifications.
6. Socket Type.
7. Lamp Type.
8. Energy star compliance.
9. CEE compliance.

B. Submit manufacturer's operation and maintenance instructions for each product.

1.05 QUALITY ASSURANCE

A. Lighting fixtures shall be standard products of manufacturers regularly engaged in the manufacture of the specific type lighting fixtures specified and shall be the manufacturer's latest standard design that complies with specification requirements. Firms installing the fixtures shall have a minimum of (5) years of successful installation experience on projects with interior lighting work similar to the requirements of this project.

B. Verify the availability of all fixtures proposed to be used in the execution of the work prior to submitting for approval. The discontinuance of production of any fixture after such approval has been granted shall not relieve the Contractor from furnishing an approved fixture of comparable quality and design at no additional cost.

C. Lighting fixtures shall be as specified in the "Luminaire Schedule." Fixture types, characteristics, photometrics, finishes, etc., correspond to the first manufacturer, and associated catalog number, listed in the "Luminaire Schedule." Provide a sample fixture from the factory for any products not listed as acceptable for approval. The Owner's Representative reserves the right to disapprove any fixture type submitted which is not equal in quality, appearance or performance to the fixture specified.

D. Drivers and LED boards: The manufacturer shall provide written warranty against defects in material or workmanship, including replacement, for five years from date of manufacture. Drivers and LED boards shall be manufactured in an ISO 9002 Certified Facility.

1.06 SPARE ATTIC STOCK

A. Provide (2) LED drivers.

PART 2 - PRODUCTS

2.01 LUMINAIRES

A. Furnish Products from acceptable manufacturers listed in the light fixture schedule.

B. Wattages for LED fixtures are maximum allowed. Where recently released products have decreased wattage for same lumen output, provide the decreased wattage version.

C. Lenses as called for on schedule meeting the following applicable requirements:

1. Extruded 100 percent virgin acrylic material with a minimum weight of ten ounces per square foot.

2. Type 12: Clear material with 0.125 inch overall thickness with .080 Inch penetration comprised of 3/16 inch square based female cones aligned 45 degrees to the length and width of the panel.

3. Type 19: Clear material with 0.156 inch overall thickness with 0.080 inch penetration comprised of 3/16 inch square based male cones aligned parallel and perpendicular to the length and width of the panel.

4. White Matte: White material with 0.125 inch overall thickness.

5. While Overlay: White material with 0.040 inch overall thickness.

D. Housings:

1. Provide steel, extruded aluminum or spun aluminum as called for on the fixture schedule.

2.02 LED DRIVERS AND LIGHT ENGINES

A. Acceptable Manufacturers:

1. Philips.
2. Lutron.
3. Microsemi.
4. Approved Equal.

B. General Requirements:

1. The LED driver and board shall have a (5) year warranty.

2. LED lamps shall have some minimum rated life 50,000 hours.

3. LED driver board combinations shall deliver a minimum of 90 lumens/watt.

4. Shall be rated dual voltage 120/277V.

5. Must have surge suppression protection suitable for use in permanently connected products meeting UL1449 3rd Edition Type 4.

6. Must meet ANSI C62.41 Category A surge protection standards up to and including 4 kV.

7. Light engine shall provide 4,000K color temperature.

8. Total Harmonic Distortion (THD): < 10%

C. General LED Driver Requirements:

1. LED Driver shall be installed inside an electrical enclosure.

2. Wiring inside electrical enclosure shall have a 600V/105°C rating or higher.

3. Must tolerate sustained open circuit and short circuit output conditions without damage.

4. Maximum allowable case temperature of 70°C.

5. Must comply with the requirements of UL, FCC, ENEC, CE, CQC.

6. The input and output connections shall be factory wiring only. Connection to supply mains shall be determined in the end product.

7. Temperature tested in a 55°C ambient, with the maximum temperatures on the enclosure of 73.1°C.

8. Suitable for use in dry and damp locations.

9. Installed as a built-in component of the end product. The unit shall be installed in compliance with the enclosure, mounting, spacing, casualty, temperature, and segregation requirements of the end product application.

10. The transformer shall employ a Class 130(B) insulation system.

11. Spacing in accordance with the requirements of the Standard for Light Emitting Diode (LED) Equipment for Use in Lighting Products, UL 8750, First Edition, Clause 7.8.3 and Table 7.4.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install exterior lights at locations indicated on drawings.

B. Provide jacking nuts on all anchor bolts.

C. Pole bases shall be grouted with non-shrink, non-metallic grout.

D. New new concrete pole base shall be provided by General Contractor.

E. Imbed multiple (3) conduit sweeps in pole base for power conductors and grounding conductors.

3.02 GROUNDING

A. For each pole base provide the following equipment:

B. Provide 5/8" x 8'-0" long CU grounding rod and EG conductor connected to pole base.

3.03 FIELD QUALITY CONTROL

A. Operate each luminaire after installation and connection. Inspect for proper connection and operation.

B. Examine areas and conditions, under which lighting fixtures are to be installed, and substrate for supporting lighting fixtures. Notify Architect in writing of conditions detrimental to proper completion of the work. Do not proceed with work until unsatisfactory conditions have been corrected.

C. Refer to respective reflected ceiling plan for each area. Reflected ceiling plans indicate proper light fixture location only. Coordinate the proper arrangement with all other ceiling mounted devices. Contract Documents indicate light fixture characteristics (type), quality, quantity, etc. Verify with the ceiling supplier design of actual ceiling installed in each area and coordinate compatible fixture flange.

3.04 ADJUSTING

A. Aim and adjust luminaires.

3.05 CLEANING

A. Clean electrical parts to remove conductive and deleterious materials.

B. Remove dirt and debris from enclosures.

C. Clean photometric control surfaces as recommended by manufacturer.

D. Clean finishes and touch up damage.

END OF SECTION 265010

DIVISION 31 - EARTHWORK

SECTION 312000 - EARTHMOVING

PART 1 - GENERAL

1.1 SUMMARY AND RELATED REQUIREMENTS

A. Drawings and general provision of Contract, including Division-01, General Requirements, apply to work of this section.

B. Refer to other sections of the specifications, drawings, and details to determine type and extent of work there is affecting the work of this section, whether or not such work is specifically mentioned in this section. It is the intent of this specification to include all labor and material required to complete this section whether or not it is clearly or explicitly shown.

C. Section Includes:

1. Excavating and filling for rough grading the Site.
2. Preparing subgrades for slabs-on-grade, walks.
3. Excavating and backfilling for buildings and structures.
4. Drainage course for concrete slabs-on-grade.
5. Subbase course for concrete and crusher dust walks.
6. Subbase course and base course for asphalt paving.
7. Subsurface drainage backfill for walls and trenches.
8. Excavating and backfilling trenches for stormwater and electric utilities and for buried utility structures.

D. Related Requirements:

1. Section 024115 – Temporary Erosion and Sediment Control
2. Section 024116 – Site Clearing
3. Section 260010 – Electrical Work
4. Section 321150 – Hot Mix Asphalt Paving
5. Section 321330 – Concrete Paving, Utility Pads and Footings
6. Section 321331 – Cast-in-place or Machine Formed Concrete Curbs
7. Section 321340 – Crusher Dust Surfaced Walks
8. Section 329300 – Landscaping
9. Section 331001 – Storm Utility Piping and Structures
10. Section 331002 – Rain Gardens

1.2 DEFINITIONS

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

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

2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Base Course: Aggregate layer placed between the subbase course and hot-mix asphalt paving, concrete walks and crusher dust finished walks.

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

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

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

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

G. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, electrical appurtenances, or other fabricated stationary features constructed above or below the ground surface.

H. 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.

I. 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.

J. Utilities: On-site underground pipes, conduits, ducts, and cables.

1.3 SUBMITTALS

A. Product Data: For each type of the following manufactured products required:
1. Geotextiles.
2. Controlled low-strength material, including design mixture.
3. Warning tapes.

B. Samples for Verification: For the following products, in sizes indicated below:
1. Geotextile: 12 by 12 inches
2. Warning Tap: 12 inches long; of each color.

1.4 FIELD CONDITIONS

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

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

B. Utility Locator Service: Notify Dig Safe New York for area where Project is located before beginning earth-moving operations.

C. Do not commence earth-moving operations until temporary silt fencing and erosion- and sedimentation control measures specified in Section 024115 – Temporary Erosion and Sediment Control and as indicated on the Drawings are in place.

D. The following practices are prohibited within protection zones:

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

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

PART 2 - PRODUCTS

2.1 SOIL 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. 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 sieve and not more than 12 percent passing a No. 200 sieve.

E. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; with at least 95 percent passing a 1-1/2-inch sieve and not more than 8 percent passing a No. 200 sieve.

F. 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 sieve and not more than 12 percent passing a No. 200 sieve.

G. 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.

H. Drainage Course: A narrowly graded mixture of crushed stone or crushed or uncrushed gravel; ASTM D448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and zero to 5 percent passing a No. 8 sieve.

I. Filter Material: A 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.

J. Sand: ASTM C33/C33M; fine aggregate.

K. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

2.2 GEOTEXTILES

A. Separation Geotextile: Woven geotextile fabric, manufactured for separation applications, made from polyolefins or polyesters; with elongation less than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:

1. Survivability:

a. Class 2; AASHTO M 288.
b. As follows:

1) Grab Tensile Strength: 247 lbf; ASTM D4632.
2) Sewn Seam Strength: 222 lbf; ASTM D4632.
3) Tear Strength: 90 lbf; ASTM D4533.
4) Puncture Strength: 90 lbf; ASTM D4833.

c. Apparent Opening Size: No. 60 sieve, maximum; ASTM D4751.
d. Permittivity: 0.02 per second, minimum; ASTM D4491.
e. UV Stability: 50 percent after 500 hours' exposure; ASTM D4355.

2.3 ACCESSORIES

A. Detectable Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep; colored as follows:

1. Red: Electric.
2. Yellow: Gas, oil, steam, and dangerous materials.
3. Orange: Telephone and other communications.
4. Blue: Water systems.
5. Green: Sewer systems.

PART 3 - EXECUTION

3.1 PREPARATION

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

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

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

3.2 DEWATERING

A. Prevent surface water and groundwater from entering excavations, from ponding on prepared subgrades, and from flooding project site and surrounding area.

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

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

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

3.3 EXPLOSIVES

A. Explosives:

1. Do not use explosives.

3.4 EXCAVATION, GENERAL

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

the Contract Time will be authorized for rock excavation or removal of obstructions.

1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.

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

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

3.5 EXCAVATION FOR WALKS AND PAVEMENTS

A. Excavate surfaces under walks and pavements to indicated lines, cross-sections, elevations, and subgrades.

3.6 EXCAVATION FOR UTILITY TRENCHES

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

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

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

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

C. Trench Bottoms:

1. 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.

a. For pipes and conduit less than 6 inches in nominal diameter, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
b. 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.
c. For flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support conduit on an undisturbed subgrade.

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

3.7 SUBGRADE INSPECTION

A. Notify Landscape Architect-Engineer when excavations have reached required subgrade.

B. If Landscape Architect-Engineer determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.

C. Proof-roll subgrade below the building slabs and pavements with a pneumatic-tired and loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons or other equipment acceptable to the Landscape Architect-Engineer to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

1. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph.
2. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Landscape Architect-Engineer, and replace with compacted backfill or fill as directed.

D. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Landscape Architect-Engineer, without additional compensation.

3.8 UNAUTHORIZED EXCAVATION

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

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

3.9 STORAGE OF SOIL MATERIALS

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

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

3.10 BACKFILL

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

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

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

3.11 UTILITY TRENCH BACKFILL

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

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

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

D. 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 or conduit.

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

E. Final Backfill:

1. Soil Backfill: Place and compact final backfill of satisfactory soil to final subgrade elevation.

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

3.12 SOIL FILL

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

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

1. Under grass and planted areas, use satisfactory soil material.
2. Under walks and pavements, use satisfactory soil material.

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

3.13 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.

3.14 COMPACTION OF SOIL BACKFILLS AND FILLS

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

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

C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D1557:

1. Under structures, building slabs, steps, and pavements, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent.
2. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 95 percent.
3. Under turf or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 90 percent.
4. For utility trenches, compact each layer of initial and final backfill soil material at 85 percent.

3.15 GRADING

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

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

surface tolerances.

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

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

3.16 SUBSURFACE DRAINAGE

A. Subsurface Drain: Place subsurface drainage geotextile around perimeter of subdrainage trench. Place a 6-inch course of filter material on subsurface drainage geotextile to support subdrainage pipe. Encase subdrainage pipe in a minimum of 12 inches of filter material, placed in compacted layers 6 inches thick, and wrap in subsurface drainage geotextile, overlapping sides and ends at least 6 inches.

1. Compact each filter material layer to 85 percent of maximum dry unit weight according to ASTM D698with a minimum of two passes of a plate-type vibratory compactor.

B. Drainage Backfill: Place and compact filter material over subsurface drain, in width indicated, to within 12 inches of final subgrade, in compacted layers 6 inches thick. Overlay drainage backfill with one layer of subsurface drainage geotextile, overlapping sides and ends at least 6 inches.

1. Compact each filter material layer to 85 percent of maximum dry unit weight according to ASTM D698 with a minimum of two passes of a plate-type vibratory compactor.
2. Place and compact impervious fill over drainage backfill in 6-inch- thick compacted layers to final subgrade.

3.17 SUBBASE AND BASE COURSES UNDER PAVEMENTS AND WALKS

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

B. On prepared subgrade, place subbase course under pavements and walks as follows:

1. Install separation geotextile on prepared subgrade according to manufacturer's written instructions, overlapping sides and ends.
2. Place base course material over subbase course under hot-mix asphalt pavement.
3. Shape subbase course to required crown elevations and cross-slope grades.
4. Place subbase course 6 inches or less in compacted thickness in a single layer.
5. 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.

6. 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 D1557.

3.18 PROTECTION

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

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

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

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

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

3.19 DISPOSAL OF SURPLUS AND WASTE MATERIALS

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

END OF SECTION 312000

DIVISION 32 – EXTERIOR IMPROVEMENTS

SECTION 321330 - CONCRETE WALKS, PAVILION PADS, AND FOOTINGS

PART 1 - GENERAL

1.1 SUMMARY AND RELATED REQUIREMENTS

A. Drawings and general provision of Contract, including Division -01, General Requirements, apply to work of this section.

B. Refer to other sections of the specifications, drawings, and details to determine type and extent of work there is affecting the work of this section, whether or not such work is specifically mentioned in this section. It is the intent of this specification to include all labor and material required to complete this section whether or not it is clearly or explicitly shown.

C. This section includes the installation of concrete walks, pavilion pads and footings as shown on the Drawings, or as specified herein.

D. Related Requirements

1. Section 312000 – “Earth Moving”

1.2 QUALITY ASSURANCE

A. Reference Standards

1. The latest edition of the following standards, as referenced herein, shall be applicable.
   a. “Standard Specifications, Construction and Materials, New York State Department of Transportation, Office of Engineering.”
   b. American Society of Testing and Materials (ASTM)
   c. American Concrete Institute (ACI).

B. The Contractor shall provide and pay for all costs in connection with an approved independent testing facility to determine conformance of materials with the specifications, if at any time during the Work materials appear unsuitable in the opinion of the Landscape Architect-Engineer.

1.3 SUBMITTALS

A. Concrete

1. The Contractor shall furnish the name and location of the concrete supplier.
2. Submit the design mix for each class of concrete prior to use in the Work.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Concrete

1. All cast-in-place concrete shall be ready mixed concrete meeting the following criteria:
   a. 28-day compressive strength – 4000 psi
   b. Air entrainment – 4% to 8%
   c. Slump – 2” to 4”

B. Pre molded Expansion Joint Filler

1. Concrete sidewalks and pavements shall be provided with a ½” premolded expansion joint filler conforming to ASTM D1751.
2. The premolded expansion joint filler shall be “pre-cut” to match the concrete cross-sectioned dimension as detailed on the Drawings.

C. Fabric Reinforcement

1. Flat sheets of 6 X 6 – W2.9xW2.9, ASTM A 185, welded wire fabric.

D. Sealants

1. Joint Sealers: ASTM D 1850

E. Forms

1. Sidewalk and pavement area forms shall be of wood or steel, straight of sufficient strength to resist springing during depositing and consolidating concrete, and of a height equal to the full depth of the finished sidewalk.
2. Wood forms shall be surfaced plank, 2-inch nominal thickness, straight, and free from warp, twist, loose knots, splits or other defects. Wood forms shall have a normal length of 10 feet, with a minimum of three stakes perform, at maximum spacing of 4 feet. Corners, deep sections, and radius bends shall have additional stakes and braces, as required. Radius bends may be formed with three-quarter-inch boards, laminated to the required thickness.
3. Steel forms shall be channel-formed sections with a flat top surface and with welded braces at each end and at not less than two intermediate points. Form ends shall be interlocked and self-aligning. Forms shall include flexible forms for radius forming, corner forms, form spreaders, and filters. Forms shall have a minimum length of 10 feet, with a minimum of two welded stake products perform. Stake pins shall be solid steel rods with chamfered heads and pointed tops, designed for use with steel forms.

2.2 DETECTABLE WARNING MATERIALS

A. Detectable Warning Plate:

1. Shall be cast-in-place and a homogenous glass and carbon reinforced composite with truncated domes in accordance with ADA regulations.

2. Colors: As selected by Landscape Architect-Engineer.

3. Size: 24” x 48”

4. Physical Characteristics:

a.	Compressive Strength:	28,900 psi	ASTM D695
b.	Flexural Strength:	29.300 psi	ASTM D790
c.	Slip Resistance:	1.18 Dry/1.05 Wet	ASTM 570
d.	Salt Spray:	No Change	ASTM B117
e.	Chemical Staining Test:	No Deterioration	ASTM 1308
f.	Tensile Strength:	11,600 psi	ASTM D 638

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.

PART 3 - EXECUTION

3.1 INSPECTION

A. The Contractor shall notify the Landscape Architect-Engineer 24 hours before placing concrete in order to give Landscape Architect-Engineer an opportunity to inspect the formwork, reinforcing any related items prior to placement of the concrete.

B. Delivery tickets shall show the amount of cement, brand, and amount of all admixtures, in addition to information required by ASTM C94, Section 14. Water added on the job shall be approved and the amount noted on the delivery ticket and initialed by the Contractor.

3.2 SUBBASE PREPARATION

A. Concrete sidewalks shall be constructed on a compacted granular subbase as shown on the Drawings and specified in Section 312000 – “Earth Moving”

B. The completed subbase shall be tested for grade and cross-section with a template extending the full width of the sidewalk and supported between side forms.

C. The subbase shall be maintained in a smooth, compacted condition in conformity with the required section and established in grade, until the concrete is placed.

D. The subbase shall be in a moist condition when concrete is placed.

E. The subbase shall be prepared and protected so as to produce a subbase free from frost when the concrete is deposited.

3.3 FORMWORK

A. Earthcuts may not be used as forms for vertical surfaces.

B. All forms shall be built mortar tight and of materials sufficient in strength to hold concrete without bulging between supports. Forms shall be maintained to eliminate the formation of joints due to shrinkage of the forms. Concrete, misshapen by bulges or deformations caused by inadequate forms, shall be removed or corrected as ordered by the Landscape Architect-Engineer. All replacements or corrections shall be made at the Contractor's expense.

C. All surfaces of wooden forms that will be in contact with exposed concrete shall be thoroughly treated with an approved laquer in the procedure recommended by the manufacturer. Forms so treated shall be protected from being damaged or dirtied prior to placing of the concrete.

D. Metal forms shall be treated with an approved form of lacquer or may be treated with an approved form of oil. The metal used for forms shall be designed to hold the forms rigidly together and to allow removal, without injury to the concrete. Metal forms which do not have smooth surfaces, correct alignment and clean surfaces shall not be used.

E. Side forms shall not be removed for less than 12 hours after finishing has been completed.

3.4 CONCRETE PLACEMENT AND FINISHING

A. Preparation
1. Set forms true to line and grade and anchor rigidly in position.
2. Transverse expansion joints shall be installed at sidewalk returns and opposite expansion joints in adjoining curbs. Longitudinal expansion joints shall be installed between concrete sidewalk and abutting concrete curb, continuously. Transverse expansion joints shall be installed equally at not more than 20 feet, on center, unless otherwise directed by Landscape Architect-Engineer.
3. Transverse expiration joints shall be filled with one-inch joint filler strips. Joint filler shall be placed with top edge one-quarter inch below the surface and shall be held in place with steel pins or other devices to prevent warping of the filler during floating and finishing. Protect the top edge of the joint during concrete placement with a temporary cap and remove after concrete has been placed.
4. Expansion joints shall be formed about structures and features that project through or into the sidewalk pavement using joint filler of the type, thickness and width indicated. The filler shall be installed in such manner as to form a complete, uniform separation between the structures and sidewalk pavement.

B. Placement of Fabric Reinforcement
1. Prior to placement, clean reinforcement thoroughly of mill and rust scale and of coatings which could destroy or reduce bond. Where there is a delay in depositing concrete after the positioning or reinforcement, reclean reinforcement, if necessary.
2. Place reinforcement midway between top and bottom of the swab and secure against displacement.

3. Lap edges and ends of adjoining sheets of fabric reinforcement at least half the mesh width. Offset end laps in adjacent sheets to prevent continuous joints at ends. Interrupt reinforcement at expansion joints stopping 2 inches from edges.

C. Concrete Placement
1. Concrete shall be placed in the forms in one layer of such thickness that when compacted and finished the sidewalk will be of the thickness indicated. After concrete has been placed in the forms, a strike-off guided by side forms shall be used to bring the surface to proper section to be compacted.
2. The concrete shall be tamped and consolidated with a suitable wood or metal tamping bar, and the surface shall be finished to grade with a wood float. Finished surface of the walk shall not vary more than 3/16 inch from the testing edge of a 20-foot straight edge. Irregularities exceeding the above shall be satisfactorily corrected. The surface shall be divided into rectangular areas by means of contraction joints spaced at intervals shown on the drawings.
3. Place concrete in accordance with ACI 301 unless otherwise specified herein.
4. Cold Weather Concrete: Comply with ACI 305 306 for placement at temperature of, or expected to be, below 40 degrees F.
5. Hot Weather Concrete: Comply with ACI 305 306 for placement at temperature of, or expected to be, above 90 degrees F.

3.5 DETECTABLE PANEL INSTALLATION

A. Install detectable warning panels at curb ramps in accordance with manufacturer's specifications and these Conduct Drawings.

B. Pour concrete in accordance with Specification Section 3.4C. "Concrete Placement."

C. Set panels in wet concrete at detailed location and orientation.

D. Working in a grid pattern, tamp panel into wet concrete. Continue until all the air has been released and the panel is flush with the surrounding concrete.

E. Finish concrete pavement around panels as specified per detail.

F. Contractor shall take precautions to keep wet concrete from the top section of the detectable panels. Any splatters are to be cleaned immediately prior to drying.

G. Remove protective covering from the face of the panel once the concrete is cured.

3.6 CONCRETE FINISHING

A. After straight edging, when most of the water sheen has disappeared, and just before the concrete hardens, the surface shall be finished to a smooth and uniformly fine granular or sandy texture free of waves, irregularities, or tool marks. A scored surface shall be produced by brooming with a fiber bristle brush in a direction transverse to that of the traffic, or as otherwise shown on the drawings.

B. All slab edges, including those at formed joints, shall be finished carefully with an

edger having a radius of 1/8 inch. Corners and edges which have crumbled and areas which lack sufficient mortar for proper finishing shall be cleaned and filled solidly with a properly proportioned mortar mixture and then finished.

C. The completed surface shall be uniform in color and free of surface blemishes and tool marks.

3.7 CURING

A. General

1. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
2. Comply with ACI 306.1 for cold-weather protection.

B. Evaporation Retarder

1. Apply evaporation retarder to concrete surfaces if hot, dry or windy conditions cause moisture loss approaching 0.2lb/sq. ft. x h(1 kg/sq. mxh) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screening, and bull floating or darbying concrete but before float finishing.
2. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

C. Curing Methods

1. Cure concrete by moisture curing, moisture-retaining-cover curing, curing compound or a combination of these as follows:
2. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
   a. Water
   b. Continuous water-fog spray
   c. Absorptive cover, water-saturated and kept continuously wet. Cover concrete surfaces and edges with 12-inch (300mm) lap over adjacent absorptive covers.
3. 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 (300mm) and sealed by waterproof tape or adhesive. Immediately repair any holes or tears occurring during installation occurring period using cover materials ad waterproof tape.
4. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to the manufacturer's written instructions. Recoat areas that have been subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

3.8 PAVING TOLERANCES

A. Comply with tolerances in ACI 117 and as follows:
1. Elevation: 3 / 4 inch.
2. Thickness: Plus 3 / 8 inch, minus 1 / 4 inch.
3. Surface: Gap below 10-feet-long; unleveled straightedge not to exceed 1 / 2 inch.

4. Contraction Joint Depth: Plus 1 / 4 inch, no minus.
5. Joint Width: Plus 1 / 8 inch, no minus.

3.9 SEALING JOINTS

A. At the end of the curing period, expansion joints shall be carefully cleaned and filled with joint sealer. Concrete at the joint shall be surface dry, and the atmospheric and pavement temperatures shall be above 50 degrees F, at the time of application of joint sealing materials.

3.10 BACKFILLING AND RESTORATION

A. After curing, debris shall be removed, and the area adjoining the concrete shall be backfilled, graded, and compacted to conform to the surrounding area in accordance with lines and grades indicated.

B. All lawns, pavements, driveways, shrubs, or other improvements affected by sidewalk placement shall be restored to their original condition.

3.11 PROTECTION

A. The Contractor shall protect the finished pavement and keep it in “first class” condition until the completion of the Contract. Any pavement, which is damaged prior to final acceptance of the Work, shall be removed, and replaced at the Contractor’s expense.

END OF SECTION 321330

SECTION 321331 – CAST-IN-PLACE OR MACHINE FORMED CONCRETE CURB

PART 1- GENERAL

1.1 SUMMARY AND RELATED REQUIREMENTS

A. Drawings and general provision of Contract, including Division-01, General Requirements, apply to work of this section.

B. Refer to other sections of the specifications, drawings, and details to determine the type and extent of work there is affecting the work of this section, whether or not such work is specifically mentioned in this section. It is the intent of this specification to include all labor and material required to complete this section whether or not it is clearly or explicitly shown.

C. This Section includes the installation of concrete curbing as shown on the Drawings, or as specified herein.

D. Related Requirements
   1. Section 312000 – “Earth Moving”

1.2 QUALITY ASSURANCE

A. Reference Standards
   1. The latest edition of the following standards, as referenced herein, shall be applicable.
      a. “Standard Specifications, Construction and Materials, New York State Department of Transportation, Office of Engineering.”
      b. American Society of Testing and Materials. (ASTM).
      c. American Concrete Institute. (ACI).

B. The Contractor shall provide and pay for all costs in connection with an approved independent testing facility to determine conformance of materials with the specifications, if at any time during the Work, materials appear unsuitable in the opinion of the Landscape Architect/Engineer.

1.3 SUBMITTALS

A. Concrete
   1. The Contractor shall furnish the name and location of the concrete supplier.
   2. Submit the design mix for each class of concrete prior to use in the Work.

B. Product Data
   1. Submit manufacturer’s catalog cuts, specifications, and installation instructions.

C. Test Results

1. The testing laboratory shall submit written reports of all tests, investigations, and recommendations to the Contractor and Landscape Architect/Engineer.

PART 2- PRODUCTS

2.1 MATERIALS

A. Concrete
   1. All cast-in-place or machine formed concrete curbing and cast-in-place utility pads shall be ready mixed concrete meeting the following criteria:
      a. 28-day compressive strength – 4000 psi
      b. Air entrainment – 4% to 8%
      c. Slump – 2” to 4”. For machined formed curb 1” maximum

B. Concrete shall be proportioned using methods 1 or 2 as outlined in ACI-301.

C. The approved mix design shall be used throughout this project unless changes are ordered or approved by the Landscape Architect/Engineer.

D. Premolded Expansion Joint Filler
   1. Concrete curbing shall be provided with a ½” premolded expansion joint filler conforming to ASTM D 1751
   2. The premolded expansion joint filler shall be “pre-cut” to match the concrete curbing cross sectioned dimensions as detailed on the Drawings.

E. Curing Materials
   1. Impervious Sheeting: ASTM C171
   2. Liquid Membrane Curing Compound: ASTM C309, compound shall be free of paraffin or petroleum.
   3. “Kure-N-Seal 0800” by Sonneborn, “Cure & Seal” by Symons, or equal.

F. Sealants
   1. Joint Sealers: ASTM D 1850

PART 3- EXECUTION

3.1 INSPECTION

A. The contractor shall notify the Architect 24 hours before placing concrete in order to give the Landscape Architect /Engineer an opportunity to inspect the formwork and related items prior to placement of the concrete.

B. Delivery tickets shall show the amount of cement, brand, and amount of all admixtures, in addition to information required by ASTM C94, Section 14. Water added on the job shall be approved and the amount noted on the delivery ticked and initialed by the Contractor.

3.2 SUBBASE PREPARATION

A. Concrete curbing shall be constructed on a compacted granular subbase as shown on the Drawings and specified in Section 312000 – “Earth Moving”.

B. The subbase shall be maintained in a smooth, compacted condition in conformity with the required section and established grade, until the concrete is placed.

C. The subbase shall be in a moist condition when concrete is placed.

D. The subbase shall be prepared and protected so as to produce a subbase free form frost when the concrete is deposited.

3.3 CONCRETE PLACEMENT AND FINISHING

A. Concrete Placement
   1. Concrete shall be placed in layers not to exceed 6 inches.
   2. Concrete shall be thoroughly consolidated by tamping and spading or with approved mechanical vibrators, eliminating all air pockets, stone pockets, and honeycombing.
   3. Place Concrete in accordance with ACI 301 unless otherwise specified herein.
   4. Cold Weather Concreting: Comply with ACI 306 for placement at temperatures of, or expected to be, below 40°F.
   5. Hot Weather Concreting: Comply with ACI 305 for placement at temperatures of, or expected to be, above 90°F.

B. Concrete Finishing
   1. The top of the curb shall be rounded with an edging tool to a radius of ½ inch and the surfaces shall be floated and finished with a smooth wood float until true to grade and section and uniform texture. Floated surfaces shall then be brushed with a fine-hair brush with longitudinal strokes.
   2. Immediately after removing the front curb form, the face of the curb shall be rubbed with a wood or concrete rubbing block and water until blemishes, form marks, and tool marks have been removed. The surface, while still wet, shall be brushed in the same manner as the curb top. Except at grade changes of curbs, finished surfaces shall not vary, from the testing edge of 10-foot straightedge, more than 1/8inch for gutter and entrance and ¼ inch from top and face of curb. Irregularities exceeding the above shall be satisfactorily corrected at no cost to the Owner.
   3. Visible surfaces and edges of finished curb shall be free of blemishes and form and tool marks, and shall be uniform in color, shape, and appearance.
   4. No plastering shall be permitted.
   5. Curbing forms shall be left in place at least twenty-four (24) hours, or until the concrete has sufficiently set so that, in the option of the Architect the forms can be removed without injury to the curbing.

C. Machine Formed Curbs
   1. For machine formed curb, uniformly feed concrete in the machine so the concrete maintains the shape of the section, without slumping after extrusion. Voids or honeycomb on the surface of the finished curb will not be allowed. Immediately after extrusion, perform and additional surface finishing required.

3.4 CURLING

A. Impervious Sheeting Method
   1. The entire exposed surface shall be wetted with a fine spray of water and then covered with impervious sheeting material. Sheets shall be laid directly on the concrete surface with the light-colored side up and overlapped 12 inches when a continuous sheet is not used.
   2. The curing medium shall not be less than 18 inches wider than the concrete surface to be cured and shall be securely weighted down on heavy wood planks, or by placing a bank of moist earth along edges and las in the sheets.
   3. Sheets shall be satisfactory repaired or replaced if torn or otherwise damaged during curing. The curing medium shall remain on the concrete surface to be cured for not less than 7 days.

B. Membrane Curing Method
   1. The entire exposed surface shall be covered with a membrane forming curing compound.
   2. Curing compound shall be applied in two (2) coats by hand-operated pressure sprayers at coverage of approximately 200 square feet per gallon for both coats, unless otherwise approved by the Landscape Architect/Engineer based upon manufacturer's data.
   3. The second coat shall be applied in a direction approximately at right angles to the direction of application of the first coat. The compound shall worm a uniform, continuous, coherent film that will not check, crack, or peel and shall be free from pinholes or other imperfections. Apply an additional coat to all surfaces showing discontinuity, pinholes or other defects.
   4. Concrete surfaces that are subjected to heavy rainfall within 3 hours after curing compound has been applied shall be resprayed by the above method and at the above coverage at no additional cost to the Owner.
   5. Expansion-joint openings shall be sealed at the top by inserting moistened paper or fiber rope or covering with strips of waterproof paper prior to application of the curing compound, in a manner to prevent the curing compound entering the joint.
   6. Concrete surfaces to which membrane-curing compounds have been applied shall be adequately protected for 7 days from pedestrian and vehicular traffic and from any other action that might disrupt the continuity of the membrane. Any area covered with curing compound and damaged by subsequent construction operations within the 7-day curing period shall be resprayed as specified above at no additional expense to the Owner.

3.5 SEALING JOINTS

A. The approximately horizontal sections of expansion joints shall be sealed with joint sealer. The join opening shall be thoroughly cleaned before the sealing material is placed. Sealing shall be done so that the material will not be spilled on exposed surfaces of the concrete.

B. Concrete at the joint shall be surface dry and atmospheric and concrete temperatures shall be above 50°F at the time of application of joint-sealing materials. Excess material on exposed surfaces of the concrete shall be removed immediately and exposed concrete surfaces cleaned.

3.6 BACKFILLING AND RESTORATION

A. After curing, debris shall be removed, and the area adjoining the concrete shall be backfilled, graded, and compacted to conform to the surrounding area in accordance with lines and grades indicated.

B. All lawns, pavements, driveways, shrubs, or other improvements affected by curbing placement shall be restored to their original condition.

3.7 PROTECTION

A. The contractor shall protect the curbing and keep it in alignment and “first class” condition until the completion of the Contract. Any curbing, which is damaged prior to final acceptance of the Work, shall be removed, and replaced at the Contractor’s expense.

END OF SECTION 321331

SECTION 321340 – STONE DUST SURFACED WALKS AND OTHER AREAS

PART 1 - GENERAL

1.1 SUMMARY AND RELATED REQUIREMENTS

A. Drawings and general provision of Contract, including Division -01, General Requirements apply to work of this section.

B. Refer to other sections of the specifications, drawings, and details to determine type and extent of work there is affecting the work of this section, whether or not such work is specifically mentioned in this section. It is the intent of this specification to include all labor and material required to complete this section whether or not it is clearly or explicitly shown.

C. This section includes the installation of stone dust surfaced walks and other areas as shown on the Drawings, or as specified herein.

D. Related requirements:
   1. Section 312000, “Earth Moving.”

1.2 QUALITY ASSURANCE

A. Stone dust surfaced walks and other areas shall be constructed to the true widths as indicated on the Drawings with crisp, distinctly defined edges abutting adjacent lawn or other surfaced areas.

B. Surfaces of stone dust walks shall be true to grade, with a center line crown constructed at a grade of ¼ inch per foot of width. Surface shall be rolled free of puddled (bird bath) areas and drain freely to adjacent edges.

1.3 SUBMITTALS

A. Stone Dust Material
   1. The Contractor shall furnish the name and location of the stone dust supplier.
   2. The Contractor shall furnish approximately one (1) cubic foot of stone dust material for approval by the Landscape Architect-Engineer.

B. Geotextiles
   1. 12 X 12 inches.

PART 2 - PRODUCTS

2.1 MATERIALS

A. NYS DOT Item 304.01940004: Surface finish material (Stone dust)
1. Stone Dust, as supplied by Palette Stone Corporation, Saratoga Springs, NY or approved equal.

2. Gradation

Sieve Size Designation	Percentage Passing by Weight
¼ in.	100
#10	55-75
#40	20-40
#200	7-15

B. NYS DOT 304.12, Subbase Coarse, Type 2
1. Composition: For Type 2, furnish materials consisting of Stone which is the product of crushing or blasting ledge rock.

2. Gradation:

Sieve Size Designation	Percentage Passing by Weight
4 in.	-
3 in.	-
2 in.	100
¼ in.	25-60
No. 40	5-40
No. 200	0-10

3. Durability: Provide material for Type 2 having a Magnesium Sulfate Soundness loss less than 20% after four (4) cycles tested in accordance with the Geotechnical Test Method (GRM-21) "*Test Method for Magnesium Sulfate Soundness of Granular Materials."*

C. Base Course
1. As specified in Section 312000, "Earth Moving," Sub-Section, Part 2, 2.1 E (Base Course).

D. Steel Landscape Edging
1. As specified in Section 329300, "Landscaping," Sub-Section Part 2, 2.3B (Landscape Edging) in areas as shown on the drawings.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Surface Finish Installation (Stone Dust)
   1. Place Type 2 subbase material on the grade in a manner to minimize segregation, using equipment and procedures approved by the Landscape Architect-Engineer. Do not perform uncontrolled spreading from piles dumped on the grade.
   2. The compacted subbase layer thickness shall be as shown on the Drawings.
   3. When the moisture content is within the limits for proper compaction, compact subbase material using a pneumatic roller in accordance with the requirements of NYSDOT §203-3-03C. Compaction. Density tests are not required for acceptance.
   4. If the subbase course is disturbed by frost action prior to paving, re-compact the subbase.
   5. Place 1 ½ “thick layer of stone dust directly on subbase course with a controlled spreader, and water until the material is moistened. Compact material using a pneumatic roller. Allow material to dry before placing second layer of limestone dust.
   6. When surface is dry and stable, place 1” thick layer of stone dust over first layer with controlled spreader, and water until material is moistened. Compact material using a pneumatic roller. Allow material to dry before allowing use.
   7. Prior to final acceptance of project, fine rake surface to smooth any imperfections.

B. Tolerances
   1. Place stone dust so that after compaction the top surface of the course does not extend more than ¼ inch above nor more than ¼ inch below true grade for the course at any location.
   2. Finish grade at edges of walks and other paved areas shall be equal to adjacent areas.

END OF SECTION 321340

SECTION 323301 – KAYAK/CANOE LAUNCH

PART 1- GENERAL

1.1 SUMMARY AND RELATED REQUIREMENTS

A. Drawings and general provision of Contract, including Division-01, General Requirements, apply to work of this section.

B. Refer to other sections of the specifications, drawings, and details to determine type and extent of work there is affecting the work of this section, whether or not such work is specifically mentioned in this section. It is the intent of this specification to include all labor and material required to complete this section whether or not it is clearly or explicitly shown.

C. This section includes the installation of a commercial duty prefabricated floating kayak/canoe launch system including construction of a shoreside anchor system.

D. Related Requirements
   1. Section 312000, “Earth Morving”
   2. Section 321330. “Concrete Walks, Pavilion Pads and Footings”

1.2 SUBMITTALS

A. Shop Drawings
   1. Dimensional layout/plan view drawings illustrating the following:
      a. Shoreside concrete anchor abutment design
      b. Gangway, dock widths, lengths, and sections break
      c. Launch unit with rollers, grab rail and launch rails
   2. Structural frame and manufacturing detail drawings illustrating the following:
      a. Main dock and finger dock super structure
      b. Materials used
      c. Hinge connections
      d. Decking and fastening method
      e. Hardware specifications
      f. Floatation
   3. Shoreside anchoring system

1.3 WARRANTY

A. A Manufacturer’s Warranty of 5 years is required

PART 2 – PRODUCTS

2.1 MATERIALS

A. General Design
   1. Dock layout to be to the configuration as shown on the drawings creating a U-shape with a launch roller port centered.

B. 4’ wide X 16’ long aluminum gangway
   1. Aluminum diamond transition plate covering the connection from the pile platform to the gangway.
   2. Beige powder coated aluminum decking welded to the frame.
   3. Gangway railings must meet ADA code with grab rail, handrail, and kick plate curb.

C. (1) 7’ wide x 13’ 3” long aluminum dock finger

D. (1) 9’1” wide x 13’ 3” long aluminum dock finger
   (1) 7’ wide x 20’ 11” long aluminum head dock
      i. Nylodeck composite decking with color match decking screws

E. (1) 4’ wide x 15’ long aluminum frame launch roller port
      i. Stoltz rollers with stainless steel shafts
      ii. Nonskid decking with stainless steel screws
      iii. Aluminum overhead boarding handle
      iv. Aluminum grab and launch rails

F. ADA transfer bench system with overhead transition railing system.

G. ADA curb around the outer perimeter of the kayak launch. Curb to be aluminum, welded to the top of the dock frame.

H. Hinge connections must have a stainless-steel pin with high density plastic bushings to prevent metal on metal contact. Hinge connections must be triple tab in design.

2.2 ANCHORING

A. Shore anchor to consist of a galvanized steel pipe supported platform or poured-in-place concrete with slide shelf to allow for horizontal movement with vertical water level fluctuation. The slide shelf to have an aluminum diamond plate to cover the transition.

B. In-water anchoring to consist of spud anchor mounts and pipes. The anchor mounts to be secured to the aluminum frame and accept 3” sch. 40 galvanized steel anchor pipe. The anchor pipes to be driven into the lake bottom. The spud anchor mount to have UHMW to prevent metal contact. Piling hoops or chains will not be accepted.

2.3 LAUNCH SYSTEM

A. As manufactured by The Dock Doctors, LLC, 19 Little Otter Lane, Ferrisburgh, VT 05456, Phone 800-870-6756 or approved equal.

PART 3 – EXECUTION

3.1 Dock system manufacturer to be responsible for the delivery and installation of the floating dock system. Shore anchoring device(s) to be constructed by General Contractor as per approved shop drawings.

END OF SECTION 323301

SECTION 323302 – FISHING PIER

PART 1 - GENERAL

1.1 SUMMARY AND RELATED REQUIREMENTS

A. Drawings and general provision of Contract, including Division-01, General Requirements, apply to work of this section.

B. Refer to other sections of the specifications, drawings, and details to determine type and extent of work there is affecting the work of this section, whether or not such work is specifically mentioned in this section. It is the intent of this specification to include all labor and material required to complete this section whether or not it is clearly or explicitly shown.

C. This section includes the furnishing and installation of a commercial duty pre-fabricated floating dock system including construction of a shore side anchor system.

D. Related Requirements:

1. Section 312000 – Earth Moving
2. Section 321330 – Concrete Walks, Pavilion Pads, and Footings

1.2 SUBMITTALS

A. Shop Drawings
   1. Dimensional layout/plan view drawings illustrating the following:
      a. Dock widths
      b. Dock lengths and sections breaks
      c. Slip widths and fairways
      d. Anchoring layout plan
   2. Structural frame and manufacturing detail drawings illustrating the following:
      a. Main dock and finger dock super structure
      b. Materials used
      c. Hinge connections
      d. Decking and fastening method
      e. Dock cleat and fastening method
      f. Hardware specifications
      g. Floatation
   3. Anchoring plan illustrating the following:
      a. If concrete block and tackle anchoring, illustrate the size and location of the anchoring blocks with specified chain size and chain tubes.
      b. If spud pole anchoring, illustrate the size of the spud anchor mounts and anchor poles.

1.3 WARRANTY

A. A Manufacturer's warranty of 5 years is required.

PART 2 - PRODUCTS

2.1 FLOATING DOCK SYSTEM

A. General Design
   1. Dock layout to be to the configuration as shown on the drawings. Dimensions are to the edge of the dock structural frames and do not include edge fender.
   2. Finger docks to be manufactured in 24' long one-piece units and main dock sections manufactured in the longest possible sections. The units to be complete, with floatation, so that they will lift directly off delivery truck into the water

B. Dead Load Design Criteria:
   1. Dead load: Entire dock and all attachments to the dock and anchorage connections. Dead load freeboard to be in the following range – 16"-18." Dead load freeboard to be noted on the submittal drawings and at the end of the five year warranty period shall be within 2" of that noted freeboard.
   2. In addition to the above freeboard restrictions the base docks and marginal walkways shall not slope more than 3" in 100' over their length or width at the time of acceptance nor 5" in 100' at the end of a five year warranty period.
   3. End "T" dock must have their outer ends level with, or no more than 2" higher than, the elevation of the base dock, where they attach.

C. Live Load Design Criteria – Vertical:
   1. Uniform load of 30#/sq. ft. on deck and structural frame.
   2. Concentrated load of 400# on any 1 sq. ft. of decking.
   3. Uniform load of 30#/sq. ft.

D. Structural Frame – General:
   1. Individual dock units to be comprised of 6063/6061 aluminum members welded together to make the structural frame. All frames to be one piece welded. Bolted together modular frames to create a 24" long frame will not be accepted.
   2. The structural frames shall carry all design loads – structural support from either the deck or floatation members is not permissible.
   3. All deck-mounted accessories shall be bolted through the frame.

E. Bolting:
   1. Fasteners to be stainless steel with proper washer and nut finish.

F. Field Connections Between Dock Frames:
1. Hinge Connections
   a. Triple tab connections with stainless steel pin.
   b. Connections to be isolated from metal on metal wear with high density plastic bushing.
   c. At all floating dock connections, a dampener system to be installed to prevent dock movement between sections.
   d. Connections to be designed to carry the loads imposed on the structure and shall not protrude above the deck surface.
   e. Structural parts of connectors to be of the same base metal as the structural frames.
   f. Connector bolts to be located so that they are easily inspected, tightened, or replaced.

G. Floatation Units:
1. Floatation units to carry a minimum warranty of 15 years through supplier.
   a. Floatation devices to be rotationally molded, heavy wall polyethylene float drums.
   b. Float drums to be manufactured from lineal, virgin polyethylene resin containing UV inhibitors and carbon black pigment to protect against ultra violet degradation. This resin offers a balance of toughness, rigidity, environmental stress and crack resistance and low temperature impact performance that is unmatched by any other material. A nominal wall thickness of .15” is standard. Due to the resin properties being in compliance with FDA Title 21 as a food grade material, it is assured that the float will not contaminate the environment. The resin is included in the Underwriters Laboratory Class 746C and flame class UL-94HB. Molded encasements to meet the Hunt Falling Dart puncture and thickness and confirm to the following properties:

Polyethylene Shell Properties	ASTM	Units	Typical Units
Melt Index	D-1238	g/min	2.5/10
Density	D-792	g/cc	.0941
Tensile strength at yield, 2” min.	D-638	psi	2930
Flexural Moduals (1% Secant)	D-790	psi	119,950
Low temperature impace	ARM STD-40F	ft-lbs.	170
Heat distortion temperature	D-648	0 deg C	60

   c. All float drums to be filled with expanded polystyrene (EPS) beads. The EPS foam to be 0.9 to 1.2 pound per cubic foot density with water absorption not to exceed 3.0 pounds per cubic foot as determined in accordance with the Hunt Absorption Test. The EPS to meet Underwriters Laboratory fire resistance standards UL723 and UL1975. The EPS contents conform to ASTM C-578 and ASTM E84.

H. Decking and Application (Dock and Gangway):
1. Decking material to be nominal slip resistant extruded aluminum, beige in color. Decking to be welded to the structural aluminum frame perpendicular to the length of the dock.
2. Support spans to be no greater than 24”

I. Edge Fender:

1. Extruded black vinyl edge fender material shall be 3 ½" tall overall with a 2 ½" tall compression section. Minimum thickness to be 3/16," top 90° flange to be 1 ¼" minimum, bottom flange to be ¾" minimum.

2. Edge fender material to be secured to perimeter of main dock sections including fingers using a #10 x 1" stainless steel oval head Phillips screw stainless steel finish washer in a staggered format, 4" on center top and bottom.

3. Edge fender material to be continuous and installled in 10' lengths where possible, with no shorter than 5' lengths. Butted ends of bumper shall not fall within 12" of a butted rub rail joint under the bumper.

4. Edge fender material to be around the entire perimeter of the floating dock.

2.2 DOCK ANCHORING SYSTEM

A. Dock Anchoring Design:
1. All horizontal loadings to be transmitted through the docking system to the anchor system.
2. Anchoring to be designed by the dock manufacturer. Dock manufacturer must visit the project site in order to acquire water depths for anchoring design.
3. Anchoring to consist of either dead man concrete anchor blocks and chain or vertical spud pole anchoring.
   a. Dead man anchors to be concrete blocks with stainless steel embedment with galvanized steel chain to proper adjustable chain tubes secured to the dock.
   b. Spud anchor mounts to have high density plastic isolator bushings; bare metal sleeves, hoops, ropes or chains will not be accepted.
4. Pending style of in water anchoring, proper connections at the concrete connection points to be designed by dock manufacturer.

2.3 GANGWAY

A. The gangway is a structural component used to create ADA access onto the dock system as well as an anchor point back to the shoreline.

B. Shore end of the gangway to be designed to connect to an existing concrete on-shore anchoring system.

C. Water end of the gangway to be connected to the floating dock system; the gangway will not be allowed to sit/rest on top of the dock.

D. No gap shall exceed ½" to meet ADA code.

E. Guardrails to be 42" high with 36" high grab rail.

F. ADA toe kick the full length of the gangway.

G. Field measurements must be verified prior to manufacturing of the gangway.

2.3 DOCK SYSTEM

A. As manufactured by the Dock Doctors, LLC, 19 Little Otter Lane, Ferrisburgh, VT 05456, Phone 800-870-6756 or approved equal.

PART 3 - EXECUTION

3.1 SUMMARY

A. Gangway and dock manufacturer to be responsible for the delivery and installation of the gangway. Shore anchoring device(s) to be constructed by General Contractor as per approved Shop Drawings.

END OF SECTION 323302

SECTION 323303 - FLAGPOLE

PART 1 - GENERAL

1.1 SUMMARY AND RELATED REQUIREMENTS

A. Drawings and general provision of Contract, including Division-01, General Requirements apply to work of this section

B. Refer to other sections of the specifications, drawings, and details to determine type and extent of work there is affecting the work of this section, whether or not such work is specifically mentioned in this section. It is the intent of this specification to include all labor and material required to complete this section whether or not it is clearly or explicitly shown.

C. Extent of flagpole installation work includes, but is not limited to, the following:

1. Installation of Flagpole Base (1)
2. Installation of Flagpole (1)

D. Related Requirements
1. Section 321330 – Concrete Walks, Pavilion Pads and Footings

1.2 SUBMITTALS

A. Shop Drawings

1. Show manufacturers fabrication details and connections to adjacent Work.

B. Product Data

1. Manufacturers Catalog sheets, specifications, and installation instructions for flagpole specified.

C. Contract Closeout Submittals

1. Operation and Maintenance Data

2. Deliver two (2) copies, covering the installed products to the Owner and/or Landscape Architect-Engineer

PART 2 - PRODUCTS

2.1 FLAGPOLE

A. Style: Round Tapered Aluminum

B. Halyard Type: Internal halyard system with stainless steel winch and revolving internal truck with stainless steel ball bearings, stainless steel aircraft cable, and flush access door with cylinder lock, key and crank.

C. Exposed Height: 30 feet capable of flying two flags

D. Base Diameter: 6 inches or as recommended by the manufacturer

E. Wall Thickness: .188 inch

F. Finish: Aluminum

G. Shoe Base/Collar: Cast metal with anchor bolts. Color, size and finish to match flagpole

H. Flagpole Manufactured by:
1. Morgan-Francis Flagpoles & Accessories, 9850 East 30th Street, Indianapolis, IN 46229, (800)814-9568, WWW.morgan-francis.com
2. Colonial Flag & Specialty Co., 930 South 300 West, Sandy, UT 84070, (800)782-0500 www.eaglemountainflag.com or approved equal.
3. Eagle Mountain Flag & Flagpole Co., PO Box 500, Wimberley, TX 78676 (800) 385-5605, www.eaglemountainflag.com or approved equal/

PART 3 - EXECUTION

3.1 Install the Work of this Section in accordance with the manufacturer's printed instructions, unless otherwise indicated.

END OF SECTION 323303

SECTION 323304 – PARK SIGN ON STONE WALL AT DROP-OFF CIRCLE

PART 1 - GENERAL

1.1 SUMMARY AND RELATED REQUIREMENTS

A. Drawings and general provisions of Contract, including Division 01 – General Requirements, apply to work of this section.

B. Refer to other sections of the specifications, drawings, and details to determine type and extent of work there is affecting the work of this section, whether or not such work is specifically mentioned in this section. It is the intent of this specification to include all labor and material required to complete this section whether or not it is clearly or explicitly shown.

C. Extent of Park Sign installation work is shown on the drawings and in this specification and includes, but is not limited to the following:

1. Fabrication and installation of park name on stone wall at drop-off circle.

1.2 SUBMITTALS

A. Shop Drawings

1. Show shop drawings, not necessarily to scale, but sufficient enough in detail to show color, wording, lettering size and style, overall sign size, construction details and installation details for park name sign.

PART 2 – PRODUCTS

2.1 SIGN LETTERS

A. Construction Materials

1. Bronze letters of size and style as indicated on drawings.

2. Provide details for fasteners to stone wall.

PART 3 – EXECUTION

3.1 FABRICATION

A. Letters shall be fabricated by a commercial sign manufacturing company. Letters to be as per drawings.

3.2 INSTALLATION

A. Letters to be mounted to stone wall surface so as mounting devices are not visible.

END OF SECTION 323304

SECTION 323305 – TRAFFIC SIGNS

PART 1- GENERAL

1.1 SUMMARY AND RELATED REQUIREMENTS

A. Drawings and general provision of Contract, including Division-01, General Requirements, apply to work of this section.

B. Refer to other sections of the specifications, drawings, and details to determine type and extent of work there is affecting the work of this section, whether or not such work is specifically mentioned in this section. It is the intent of this specification to include all labor and material required to complete this section whether or not it is clearly or explicitly shown.

C. Extent of Traffic Sign installation work is shown on the drawings and includes, but is not limited to the following:
   1. One Way Signs
   2. No Parking Signs
   3. Handicapped Parking Only Signs
   4. Authorized Vehicle entry Only Signs

D. Related Requirements
   1. Section 321330 – Concrete Walks, Pavilion Pads and Footings

1.2 SUBMITTALS

A. Shop Drawings
   1. Show shop drawings, not necessarily to scale, but sufficient enough in detail to show color, wording, lettering size and style, overall sign size, construction details and installation details for each type of sign.

PART 2 – PRODUCTS

2.1 TRAFFIC SIGNS

A. Construction Materials
   1. All Traffic control signs shall conform to the New York State “Manual for Uniform Traffic Control Devices” (MUTCD)

B. Posts
   1. Galvanized Steel, as shown on drawings

PART 3 – EXECUTION

3.1 INSTALLATION

Erect Signs in their designated locations, as indicated and in accordance with the approved shop drawings and the applicable requirements of NYS DOT Section 645

A. Protect surfaces and finishes from abrasion and other damage during handling and installation

B. Replace damaged or faulty signs

END OF SECTION 323305

SECTION 323306 – SURFACE SPRAY AERATOR

PART 1- GENERAL

1.1 SUMMARY AND RELATED REQUIREMENTS

A. Drawings and general provision of Contract, including Division-01, General Requirements, apply to work of this section.
B. Refer to other sections of the specifications, drawings, and details to determine type and extent of work there is affecting the work of this section, whether or not such work is specifically mentioned in this section. It is the intent of this specification to include all labor and material required to complete this section whether or not it is clearly or explicitly shown.
C. This section includes the furnishing and installation of a seasonal surface spray aerator (fountain) in Rip Van Winkle Lake as shown on the drawings and herein specified.
D. Related Requirements
    1. Section 312000 - Earth Moving
    2. Division 26 - Electrical

1.2 SUBMITTALS

A. Shop Drawings
    1. Show fabrication and installation details including electrical connection for seasonal use

PART 2 – PRODUCTS

2.1 MATERIALS

A. Aerator: the aerator shall be floating, surface spray aerator with a three-tier spray pattern; a geyser type center spray surrounded by two fan shaped patterns.

    Spray dimensions for the upper pattern are: 12 feet in height, and 2 feet in diameter.
    Spray dimensions for the middle pattern are: 7 feet in height, and 10 feet in diameter.
    Spray dimensions for the lower pattern are: 4 feet in height, and 17 feet in diameter.

B. Pumping Capacities: The primary pumping rate of the unit is 210 GPM, and the secondary or induced circulation rate is 10x GPM.

C. Float: The float shall be made of seamless, one-piece high-density polyethylene plastic, filled with high-density closed-cell polyurethane foam. The float shall be capable of providing full floatation if the shell is punctured or cracked. The float shall have protective pockets for lights and handles molded into the bottom for easy handling. Metal floats or those with an internal void for additional ballast are not acceptable.

D. Impeller: The impeller shall be injection molded from a polyurethane isoplast material with a brass insert.

E. Motor: The motor shall be a 2 HP, 202/230 volt, 1 phase, 60 HZ oil-coiled, submersible motor operating at 3450 RPM. The service factor shall be 1.15. The motor shall operate in a reservoir of oil as specified by the manufacture for continuous lubrication of bearings and for efficient transfer of heat through the motor housing wall. Top mounted motors and water-lubrication motors are not acceptable. The rotor shall be dynamically balanced. The winding (stator) wires shall be covered with class F rated insulation designed for complete immersion in oil. The motor shall be attached to a thermoplastic motor base plate. The motor shall be protected against oil and water leakage by combination of rotary seals, stationary seals, and molded “o” rings. Motor shall be serviceable.

F. Motor Housing: The external motor housing shall be a canister formed from deep drawn 316 stainless steel. The motor base plate shall be constructed of 420 Valox thermoplastic. A Valox boss will provide support and protection for the male electrical connector.

G. Fasteners: All fasteners are to be metric and type 304 or 316 stainless steel.

H. Electrical Connectors: The electrical connectors shall consist of a receptacle and a plug constructed of non-conductive polymers. The system shall create a vacuum seal when connected and have a threaded nut system as a backup. The plug shall have a keyway and be threaded into the motor base plate. The connector system shall be ETL and UL approved.

I. Underwater Power Cable: The power cables shall be type SOOW specially designed for underwater use. The conductors shall be flexible, stranded bare copper 12,10- or 8-gauge, triple insulated to resist moisture, cacking, and softening. The outer jacket of the cable shall be a black CPE material. All underwater connections shall be vulcanized. Power cable shall be able to be furnished in unspliced lengths up to one thousand feet (305m) i,f necessary.

J. Power Control Center: The electrical components shall be mounted in a NEMA 4X rated enclosure with an externally mounted disconnect switch, and a MANUAL – OFF – AUTO selector switch. The electrical system for all units (115, 208-230, 280-415 & 460V) shall include a non-reversing 600V rated Manual Motor Controller (MMC) with thermal overload and short circuit trip and 24 hr. timer. 115,208-230 volt, single and three phase units shall include GFCI (Ground Fault Circuit Interrupter) Protection. To operate the GFCI and control circuit on 208–230-volt system a neutral must be present or an optional control transformer may be supplied. The electrical system shall include a lightning arrester, rated for a maximum of 60,000 amperes discharge.

K. Surface Spray Aerator as Manufactured By: OTTERBINE Tristar Aerating Fountain by OTTERBINE BAREBO, INC., 3840 MAIN ROAD EAST, AMMAUS, PA 18049 U.S.A. PH: (610) 965-6018. WEB: www.otterbine.com, or approved equal.

2.2 TESTING AND WARRANTY

A. Testing
   1. Safety: The aerator system shall be tested and approved as a unit. Separate component testing not allowed. Unit must be tested by ETL, ETL-C, CE, UL or another accredited testing facility.
   2. Performance: Unit must have independent performance testing provided by University of Minnesota or other accredited testing agency.
   3. Warranty: A manufacturer's warranty of 5 years is required.

PART 3 – EXECUTION

3.1 Install the work of this section in accordance with the manufacture's printed instructions, unless otherwise indicated.

END OF SECTION 323306

SECTION 323307 – BIRD HOUSES

PART 1- GENERAL

1.1 SUMMARY AND RELATED REQUIREMENTS

A. Drawings and general provision of Contract, Division-01, General Requirements, apply to work of this section.

B. Refer to other sections of the specifications, drawings, and details to determine type and extent of work there is affecting the work of this section, whether or not such work is specifically mentioned in this section. It is the intent of this specification to include all labor and material required to complete this section whether or not it is clearly or explicitly shown.

C. This section includes the installation of prefabricated poly bird houses mounted on posts within the drop-off circle at the park entrance.

D. Related Requirements
   1. Section 321330 – Concrete Walks, Pavilion Pads and Footings

1.2 SUBMITTALS

A. Submit color sample data sheet for color selection by Landscape Architect and Village Mayor.

PART 2 – PRODUCTS

2.1 PREFABRICATED BIRD AND BUTTERFLY HOUSES

A. Purple Martin Castle House (AWP-PMCAS-BLK) – (1) (Post Mounted)

B. Purple Martin Mansion – (AWP-PMMNSN-V) – (1) (Post Mounted)

C. Bluebird Bright Bird House, Purple – (HW-263B) – (1) (Post Mounted)

D. Bluebird Bright Bird House, Turquoise - (HW-263A) – (1) (Post Mounted)

E. New Chick Chickadee House, Redwood - (HW-075C) - (2) (Post Mounted)

F. Cape Cod Wren House, Celery (HW-039D) – (1) (Post Mounted)

G. Cape Cod Wren House, Blue Pickle – (HW-039B) – (1) (Post Mounted)

H. Flutterbye House and Pole, Redwood – (HW-095C) – (1) (Included Pole Mounted)

I. Flutterbye House and Pole, Yellow – (HW-096A) – (1) (Included Pole Mounted)

J. Flutterbye House and Pole, Celery – (HW-095B) – (1) (Included Pole Mounted)

2.2 WOOD POSTS

A. 4X4 Cedar, select grade, in length as shown on the drawings (quantity – 8) to accommodate mounting heights up to 8’ above grade.

2.3 BIRD HOUSES:

A. As Manufactured by BEST NEST, 4000 McMann Rd, Cincinnati, OH 45245 (513) 232-4225, or approved equal.

PART 3 – EXECUTION

3.1 PROCESS

A. Install the work of this section in accordance with the manufacturer’s printed instructions, unless otherwise noted.

B. All single bird houses with the exception of the two Purple Martin houses (AWP-PMCAS-BLK and AWP-PMMNSN-V) shall have their entry holes blocked off from the inside of the house using secured wood, metal mesh or similar.

C. Install the work of this section as shown in the locations and heights as indicated on the drawings.

END OF SECTION 323307

SECTION 323308 – BICYCLE RACKS

PART 1 - GENERAL

1.1 SUMMARY

A. Drawings and general provision of Contract, including Division-01, General Requirements, apply to work of this section.

B. Refer to other sections of the specifications, drawings, and details to determine type and extent of work there is affecting the work of this section, whether or not such work is specifically mentioned in this section. It is the intent of this specification to include all labor and material required to complete this section whether or not it is clearly or explicitly shown.

C. Extent of bicycle rack installation work includes, but is not limited to, the following:

1. Installation of Bicycle Racks (2 Sets)

1.2 SUBMITTALS

A. Shop Drawings

1. Show fabrication details and connections to adjacent Work.

B. Product Date

1. Catalog sheets, specifications, and installation instructions for Bicycle Rack specified.

PART 2 - PRODUCTS

2.1 BICYCLE RACK

A. Style: Tubular Steel 3" Wide

B. Biking Rack: Seven Bicycle Capacity, 5'-3" long, 3'-0" Height

C. Mounting Foot: Embedment (Permanent) Mounting

D. Finish: non-toxic powder coat (gloss black)

E. Bike Rack Manufactured by: Columbia Cascade Company 1975 S.W. Fifth Avenue, Portland Oregon 97201-5293, Phone 503-223-1157, Fax 503-232-4530. Factory Representative: Baughman Brothers & Assoc, Inc., email > kebaughman@icloud.com. (original Cyclops, Model 2170 -7(c), or approved equal.

PART 3 - EXECUTION

3.1 Install the work of this section in accordance with the manufacturer's printed instructions, unless otherwise indicated.

END OF SECTION 323308

SECTION 323309– PICNIC TABLES

PART 1 - GENERAL

1.1 SUMMARY AND RELATED DOCUMENTS

A. Drawings and general provision of Contract, including Division-01, General Requirements, apply to work of this section.

B. Refer to other sections of the specifications, drawings, and details to determine type and extent of work there is affecting the work of this section, whether or not such work is specifically mentioned in this section. It is the intent of this specification to include all labor and material required to complete this section whether or not it is clearly or explicitly shown.

C. Extent of picnic table work includes, but is not limited to, the following:

1. Supply and Place Picnic Tables (Quantity to be determined by unit price bid)

1.2 SUBMITTALS

A. Product Data

1. Catalog sheets, specifications, and installation instructions for Picnic Tables specified.

PART 2 - PRODUCTS

2.1 PICNIC TABLES

A. Style: 5'-10" Standard and 7'-10" ADA Accessible Picnic tables (Movable)

B. Frame: Schedule 40 steel pipe

C. Finish: Powder wared, gloss black

D. Wood: Kich dried 2X10 (Nominad) wood slats

E. Picnic Table Manufactured by: Columbia Cascade Company 1975 S.W. Fifth Avenue, Portland Oregon 97201-5293, Phone 503-223-1157, Fax 503-232-4530. Factory Representative: Baughman Brothers & Assoc, Inc., email > kebaughman@icloud.com. (Picnic table with slaps, Model 2074-6 and ADA accessible picnic table with Sears, Model 2075-6).

PART 3 - EXECUTION

3.1 Work of this section includes supply and placement of picnic tables. Quantity to be determined by unit price bid. Quantity to be determined by unit price bid.

END OF SECTION 323309

SECTION 323310 – B.B.Q GRILLS

PART 1- GENERAL

1.1 SUMMARY AND RELATED REQUIREMENTS

A. Drawings and general provision of Contract, Division-01, General Requirements, apply to work of this section.

B. Refer to other sections of the specifications, drawings, and details to determine type and extent of work there is affecting the work of this section, whether or not such work is specifically mentioned in this section. It is the intent of this specification to include all labor and material required to complete this section whether or not it is clearly or explicitly shown.

C. Extent of B.B.Q. Grill work includes the following:

1. Supply and install B.B.Q. Grills as per detail on drawings (quantity to be determined by unit price bid).

D. Related Requirements

1. Section 321330 – Concrete Walks, Pavilion Pads and Footings

1.2 SUBMITTALS

A. Product Data

1. Catalog sheets, specifications and installation instructions for B.B.Q. Grills

PART 2 – PRODUCTS

2.1 B.B.Q. GRILLS

A. Firebox: 20 3/8” long X 15” deep X 10 1/8” high constructed of 3/16” thick steel (A1011) with an integral ash retention flange and drain holes.

B. Grate: constructed from ½ “dia. A36 steel bars located on 1 1/8” centers. The four-position theft-proof gate adjusts from 3 ½” to 9” above the fire bed and has a cooking area of 300 sq. inches.

C. Grate Handles: constructed from 5/8” dia. A36 steel bars are equipped with stay-cool spring grips suitable for public use.

D. Grill: supported by a heavy-duty 2 3/8” dia. tube to be installed in concrete. A theft-proof base allows the grill to attach to the pipe and to rotate a full 360 degrees.

E. All Joints: continuously welded.

F. All exposed corners to be chamfered for safety.

G. Standard Finish: non-toxic black powder coat.

H. B.B.Q Grill manufactured by Jamestown Advanced products Corporation, product number 11238, Standard Park Gill with 2 3/8" O.D. Tube, 2855 Girts Road, Jamestown, NY, 14701, Phone 800-452-0639, Fax 716-483-5398, www.jamestownadvanced.com or approved equal.

PART 3 – EXECUTION

3.1 Work of this section includes supply and installation of B.B.Q Grills as per manufacturers' instructions and as shown on the drawings. Quantity to be determined by unit price bid.

END OF SECTION 323310

SECTION 323311 – GOTHIC ARCH PAVILION

PART 1- GENERAL

1.1 SUMMARY AND RELATED REQUIREMENTS

A. Drawings and general provision of Contract, Division-01, General Requirements, apply to work of this section.

B. Refer to other sections of the specifications, drawings, and details to determine type and extent of work there is affecting the work of this section, whether or not such work is specifically mentioned in this section. It is the intent of this specification to include all labor and material required to complete this section whether or not it is clearly or explicitly shown.

C. Extent of Gothic Arch Pavilion work includes, but is not necessarily limited to, the following:

1. Installation of concrete footings with steel base shoe, ¾” dia. anchor bolts.

2. Installation of pavilion structure including columns, roof structure, roofing, facia and sway braces.

3. Installation of concrete pad under the pavilion.

4. Installation of stone column wraps. As detailed on the drawings.

D. Related Requirements

1. Section 312000 – Earth Moving

2. Section 321330 – Concrete Walks, Pavilion Pads and Footings

1.2 SUBMITTALS

A. Shop Drawings

1. Submit fully fabricated and erection drawings. Drawings shall show all markings, details of shape, materials connections, plates, inserts, feedings clearances, openings and other requirements of the Contract drawings. Requirements and details for handling and erection shall also be shown.

2. Design Calculations: Unless otherwise noted on the Drawings or herein specified, calculations showing the stresses in the local carrying structural framing members based on the moments and shears obtained from the loading shown on the Contract Drawings, and the construction, handling and erection procedures, shall be submitted with the show drawings.

3. Fabrication shall not be started until shop drawings have been approved. Where drawings are "Approved as Noted" fabrication may be progressed in conformity with the notes thereon, but revised copies shall be submitted for formal approval and record.

B. Roofing

1. Submit color samples to landscape architect.

PART 2 – PRODUCTS

2.1 GOTHIC ARCH PAVILION

A. Columns: 12 on 4 cedar roof beam and column.

B. Roof decking: 2 X 6 nominal t&q cedar.

C. Facia: 2 X 8 normal cedar.

D. Sway Brace: 2 X 8 nominal cedar.

E. Anchor System: Steel base shoe (powder coated) w/ ¾” dia anchor bolts (F1554 Headed Anchors)

F. Roofing: Standing seam roof, forest green to be approved by landscape architect.

G. Gothic Arch Pavilion by: Cedar Forest Products, Model Number GAP 3040, P.O. Box 145, West Olive, MI, 49460, Phone 800-552-9495. WWW.Cedarforestproducts.com , or approved equal.

2.2 STONE COLUMN WRAPS

A. Locally sourced limestone veneer stone.

B. Blue stone lap stone, 1 ½" thick.

C. Framing and sheeting as per drawings.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Pavilion structure

1. Install footings and anchor system, structure, and roofing as per manufactured recommendations.

B. Stone column wrap

1. Install stone column wraps on each pavilion column as per drawings

END OF SECTION 323311

SECTION 323312 – PLAYGROUND EQUIPMENT AND PLAY AREA SURFACE

PART 1 - GENERAL

1.1 SUMMARY AND RELATED REQUIREMENTS

A. Drawings and general provision of Contract, including Division-01, General Requirements apply to work of this section

B. Refer to other sections of the specifications, drawings, and details to determine type and extent of work there is affecting the work of this section, whether or not such work is specifically mentioned in this section. It is the intent of this specification to include all labor and material required to complete this section whether or not it is clearly or explicitly shown.

C. Section Includes:

1. Installation of playground equipment

2. Installation of Engineered Wood Fiber (EWF) Play Area Surfacing Material

D. Related Requirements

1. Section 312000 – Earth Moving

2. Section 321330 – Concrete Walks, Pavilion Pads and Footings

3. Section 329300 – Landscaping

1.2 SUBMITTALS

A. Shop Drawings

1. Shop drawings, to scale, illustrating the site layout of playground equipment and construction/installation details for the play area surface and equipment.

PART 2 - PRODUCTS

2.1 PLAYGROUND EQUIPMENT

A. Playground Equipment Materials List

Quantity	Model No. and Description
11 each	1501-3 TimberCraft Full-Round Stepper, Hand Hew Douglas fir, 16" dia (+/-2") 3' O.A. length, clean peeled of bark and sanded, embedment mount
1 each	1650-103-01-EMB Curved Embankment Slide Chute for 10 ft. drop in elevation, standard color CASPAX-7 powder-coated accessible enterance platform, TAN or YELLOW plastic
1 each	1650-51-EMB Embankment Slide Chute for 5ft. drop in elevation, standard color CASPAX-7 powder-coated accessible enterance platform, TAN or YELLOW plastic
1 each	1673-12-EMB timberCraft Embankment Log Ladder, 14'-6" OAL, 5' (nom,) wide, hand hewn Douglas fir, 8" dia. rails and 6" dia. rungs
1 each	1673-7-EMB TimberCraft Embankment Log Ladder, 8'-3" OAL, 5' (nom,) wide, hand hewn Douglas fir, 8" dia. rails and 6" dia. rungs
1 each	4500-102 TimerCraft PlayFrame, includes 7 ea. hand peeled natural tapered poles, 6" butt dia. (+2"/-0), clean peeled of bark and sanded, surface mount, anchor bolts by others.
1 each	4500-302 Log Scramble, 11 inch dia. free-of-heart-centerlathe-turned premium Douglas fir timbers, GRAPHITE CASPAX-7 powder coated steelposts, embedment mount
1 each	4500-304 Log Scramble, 11 inch dia. free-of-heart-centerlathe-turned premium Douglas fir timbers, GRAPHITE CASPAX-7 powder coated steelposts, embedment mount
1 each	4500-404 Play Stack, 11 inch dia. free-of-heart-centerlathe-turned premium Douglas fir timbers, embedment mount
1 each	4500-605 Classic TimberForm Arches (ref. 52811), standard color CASPAX-7 powder-coated metal components, Glu Lam Beams, NATURAL color Rope, surface mount

B. Playground Equipment as manufactured by Columbia Cascade Company, PO Box 1039, Camas, WA 98607-0039, Telephone (503) 223-1157, e-mail> HQ@timberform.com. Factory Representative: Baughman Brothers & Assoc., INC., email> kebaughman@icloud.com or approved equal.

2.2 Engineered Wood Fiber (EWF) Play surface

A. NYS DOT Item 304-2.03 Type 2 Gravel Subbase

B. 5# geotextile fabric or equal

C. Shredded cedar mulch – natural (no color dye)

PART 3 - EXECUTION

3.1 Playground equipment installation

A. Install the Work of this Section in accordance with the manufacturer's printed instructions, unless otherwise indicated.

3.2 Engineered Wood Fiber (EWF) play area surface

A. Install per section 312000 – Earth Moving

END OF SECTION 323312

SECTION 329300 – LANDSCAPING

PART 1- GENERAL

1.1 SUMMARY AND RELATED REQUIREMENTS

A. Drawings and general provision of Contract, including Division-01, General Requirements, apply to work of this section.

B. Refer to other sections of the specifications, drawings, and details to determine type and extent of work there is affecting the work of this section, whether or not such work is specifically mentioned in this section. It is the intent of this specification to include all labor and material required to complete this section whether or not it is clearly or explicitly shown.

C. This section includes but is not limited to the following:

1. Trees
2. Shrubs
3. Ground Clover
4. Wildflowers
5. Lawns
6. Soil Amendments
7. Initial maintenance of landscape materials

D. Related Requirements

1. Section 312000, “Earth Moving”.

1.2 QUALITY ASSURANCE

A. Subcontract landscape work to a single firm specializing in landscape work.

1.3 SOURCE QUALITY CONTROL

A. General

1. Ship landscape materials with certificates of inspection required by governing authorities. Comply with regulations applicable to landscape materials.

2. Do not make substitutions. If specified landscape material is not obtainable, submit proof of non-availability to Landscape Architect, together with proposal for use of equivalent material.

B. Analysis and Standards

1. Package standard products with manufacturer's certified analysis, For other materials, provide analysis by recognized laboratory made in accordance with methods established by the Association of Official Agriculture Chemists, wherever applicable.

C. Trees, Shrubs, and Plants

1. Provide trees, shrubs, and plants of quantity, size, genus, species and variety shown and scheduled for landscape work and complying with recommendations and requirements of ANSI Z 60.1 "American Standard for Nursery Stock." Provide healthy, vigorous stock, grown in recognized nursery in accordance with good horticultural practice and free of disease, insects, eggs, larvae and defects such as knots, sunscalds, injuries, abrasions, or disfigurement.

2. Label at least one tree and one shrub of each variety with a securely attached waterproof tag bearing legible designation of botanical and common name.

3. Where formal arrangements or consecutive order of trees or shrubs are shown, select stock for uniform height and spread, and label with number to assure symmetry in planting.

D. Inspection

1. Landscape Architect may inspect trees and shrubs for size and condition of balls and root systems, insects, injuries and latent defects, and to reject unsatisfactory or defective material in their option at any time during progress of work. Remove rejected trees or shrubs immediately from project site.

1.4 SUBMITTALS

A. General

1. Submit the following in accordance with Conditions of contract and Division.01 General Requirements.

B. Plant and Material Certifications

1. Certificates of Inspection as required by governmental authorities.

2. Manufacturers or vender's certified analysis for soil amendments and fertilizer materials.

3. Label data substantiating that plants, trees, shrubs, and planting materials comply with specified requirements.

4. Seed vendor's certified statement for each grass and wildflower seed mixture required, stating botanical and common name, percentage by weight, and percentages or purity germination, and weed seed for each grass and wildflower species.

1.5 MAINTENANCE INSTRUCTIONS

A. Typewritten instructions recommending procedures to be established by Owner for maintenance of landscape work for one full year. Submit prior to expiration of required maintenance period(s).

1.6 DELIVERY, STORAGE, AND HANDLING

A. Packaged Materials

1. Deliver packaged materials in containers showing weight, analysis, and name of manufacturer. Protect materials from deterioration during delivery, and while stored at site.

B. Trees and Shrubs

1. Provide freshly dug trees and shrubs. Do not prune prior to delivery unless otherwise approved by Landscape Architect. Do not bend or bind-tie trees or shrubs in such a manner as to damage bark, break branches or destroy natural shape. Provide protective covering during delivery. Do not drop balled and burlapped stock during delivery.

2. Deliver trees and shrubs after preparations for planting have been completed and plant immediately. If planting is delayed more than 6 hours after delivery, set trees and shrubs in shade, protect from weather and mechanical damage, and keep roots moist by covering with mulch, burlap, or other acceptable means of retaining moisture.

3. Do not remove container-grown stock from containers until planting time.

1.7 JOB CONDITIONS

A. Utilities

1. Determine location of underground utilities and perform work in a manner which will avoid possible damage. Hand excavate, as required. Maintain grade states set by others until removal is mutually agreed upon by parties concerned.

B. Excavation

1. When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, or obstructions, notify Landscape Architect before planting.

1.8 SEQUENCE AND SCHEDULING

A. Planting Time

1. Proceed with, and complete landscape work as rapidly as portions of site become available, work within seasonal limitations for each kind of landscape work required.

a. Plant or install materials during normal planting seasons for each type of plant material required.

b. Correlate planting with specified maintenance periods to provide maintenance from date of substantial completion.

B. Coordination with Lawns

1. Plant trees and shrubs after final grades are established and prior to planting of lawns, unless otherwise acceptable to Landscape Architect. If planting of trees and shrubs occurs after lawn work, protect lawn areas and promptly repair damage to lawns resulting from planting operations.

C. Special Project Warranty

1. Warranty lawns through specified lawn maintenance period, and until final acceptance.

2. Warranty trees and shrubs, for a period of two years after date of substantial completion, against defects including death and unsatisfactory growth, except for defects resulting from neglect by Owner, abuse or damage by others, or unusual phenomena or incidents which are beyond Landscape Installer’s control.

3. Another warranty inspection will be conducted at end of extended warranty period, if any, to determine acceptance or rejection. Only one replacement (per tree, shrub, or plant) will be required at end of warranty period, except for losses or replacements due to failure to comply with specified requirements.

PART 2 – PRODUCTS

2.1 TOPSOIL (IF ADDITIONAL IS REQUIRED)

A. Acceptable topsoil to be stockpiled for reuse in landscape work. If quantity of stockpiled topsoil is insufficient, provide additional topsoil as required to complete landscape work.

B. New Topsoil (if required)

1. Natural, fertile agricultural soil capable of sustaining vigorous plant growth, of uniform composition throughout without admixture of subsoil, free of stones, lumps, plants, roots, sticks, and other extraneous matter. Do not install in frozen or muddy conditions.

2. Topsoil shall have an acidity range of pH 5.0-7.0 and shall have an organic content of 4% to 20% as determined by the wet combustion method.

3. Topsoil shall have in parts per million of soil extract:
   A. Nitrate (NO_3) 10-25
   B. Phosphorous 1-2
   C. Potassium (K) 5-10

4. Submit five-pound samples and independent soil testing lab report for all sources of topsoil used. The mechanical analysis of the topsoil shall be as follows:

Passing	Retained on	Percentage
1” Screen		100
1” Screen	½” Screen (gravel)	0-3
¼” Screen	No. 100 USS mesh Sieve (sound)	40-60
No. 100 USS	(Very fine sand, silt, and clay)	10-15

5. The Landscape Architect reserves the right to reject topsoil in which more than 60% of the material passing the No. 100 sieve consists of clay as determined by the Bouycouncous hydrometer or by the decantation method. All percentages are based on dry weight of the samples.

6. The chemical and mechanical analysis shall state the above items in correct quantities, and the percentage of nitrogen, phosphoric acid and potash, and their availability in pounds per acre.

2.2 SOIL AMENDMENTS

A. Lime

1. Natural dolomitic limestone containing not less than 85% of total carbonates with a minimum of 30% magnesium carbonates, ground to that nt less than 90% passes a 10-mesh sieve and not less than 50% passes a 100-mesh sieve.

B. Aluminum Sulfate

1. Commercial Grade

C. Peat Humus

1. Finely divided peat, so completely decomposed and free of hard lumps and with pH range suitable for intended use. Bonemeal: Commercial, raw, finely ground, 4% nitrogen and 20% phosphoric acid.

D. Superphosphate

1. Soluble mixture of treated minerals, 20% available phosphoric acid.

E. Sand

1. Clean, washed sand, free of toxic materials.

F. Perlite

1. Conforming to National Bureau of Standards PS 23

G. Vermiculite

1. Horticultural grade, free of toxic substances.

H. Sawdust

1. Rotted sawdust, free of chips, stones, sticks, soil or toxic substances and with 7.5 lb. nitrogen uniformly mixed into each cubic yard of sawdust.

I. Manure

1. Well-rotted, unleashed stable or cattle manure containing not more than 255 by volume of straw, sawdust or other bedding materials and containing no chemicals or ingredients harmful to plants.

J. Mulch

1. Organic mulch free from deleterious materials and suitable for top dressing of trees, shrubs or plants and consisting of the following: Shredded Cedar. Color-Dark brown to black. Submit sample to Landscape Architect for approval prior to use in work.

K. Commercial Fertilizer

1. Complete fertilizer of neural character, with some elements derived from organic sources and containing following percentages of available plant nutrients:

    A. For trees and shrubs, provide fertilizer with not less than 5% total nitrogen, 10% available phosphotic acid and 5% soluble potash.

    B. For Lawns, provide fertilizer with percentage of nitrogen required to provide not less than 4% phosphoric acid and 2% potassium. Provide nitrogen in a form that will be available to lawn during initial period of growth; at least 50% of nitrogen to be organic form.

2.3 MISCELLANEOUS MATERIALS

A. Weed Barrier

1. Non-woven geotextile fabric of polypropylene or polyester fibers or a combination thereof. Amoco ‘Propex’ Stabilization Fabric 4545 or equivalent.

B. Landscape Edge

1. Steel Edging for Plant Beds and Crusher Run Surface Pads at Gothic Arch Pavilion: Steel Landscape Edging by Collier Metal Specialists [Col-Met]. Complete with loops pressed from or welded to face of sections to receive anchor stakes, or approved equal, as shown in locations on the drawings.

2. Size:
    A. Edging for Plant Beds: 12 ga 3/16” X 4” inches deep, 10’ lengths

3. Anchoring Stakes: Manufacturer’s standard 12” tapered steel.

4. Finish: Manufacturer’s Standard black powder coat finish on steel edging and anchor stakes.

C. Gravel in Drip Edge at Buildings

D. Filter Fabric in Drip Edges

2.4 PLANT MATERIALS

A. Quality

1. Provide trees, shrubs, and other plant of size, genus, species, and variety shown and scheduled for landscape work and complying with recommendations and requirements of ANSI 260.1 “American Standard for Nursery Stock”

B. Deciduous Trees

1. Provide trees of height and caliper scheduled or shown and with branching configuration recommended by ANSI 260.1 for type and species required. Provide single stem trees except where special forms are shown or listed.

2. Provide balled and burlapped (B&B) deciduous shrubs. Container grown deciduous shrubs will be acceptable in lieu of balled and burlaped deciduous shrubs subject to specified limitations for container grown stock and as specified on the drawings.

C. Coniferous and Broadleaf Evergreens

1. Provide evergreens of sizes shown or listed. Dimensions indicate minimum spread for spreading and semi-spreading type evergreens and height for other types, such as globe, dwarf, cone, pyramidal, broad up right, and columnar. Provide normal quality evergreens with well-balanced form complying with requirements for other size relationships to the primary dimension shown.

2. Provide balled and burlapped (B&B) evergreens.

3. Container grown evergreens will be acceptable subject to specified limitations for container grown stock or as specified on the drawings.

D. Grass Materials

1. Grass Seed and Wildflower Seed

A. Provide fresh, clean, new-crop seed complying with tolerance for purity and germination established by Official Seed Analysis of North America. Provide seed mixture composed of grass and wildflower species, proportions and minimum percentage of purity,

germination, and maximum percentage of weed seed, as specified.

B. “Schedule of Grass and Wildflower Seed Requirements” is attached at end of this section.

E. Anti-Erosion Mulch

1. Provide clean, seed-free salt hay or threshed straw of wheat, rye oats, or barley, or “Silva-Fibre” or “Con ‘Web” or equal.

F. Anti-Desiccant

1. Emulsion type, film-forming agent designed to permit transpiration but retard excessive loss of moisture from plants. Deliver in manufacture’s fully identified containers and mix in accordance with manufacturer’s instructions.

G. Filtration/Separation Fabric

1. Water permeable filtration fabric of fiberglass or polypropylene fabric.

H. Wrapping

1. Tree-wrap tape not less than 4” wide, designed to prevent bore damage and winter freezing.

I. Stakes and Guys

1. Provide stakes and deadmen of sound new hardwood, treated softwood, or redwood, free of knotholes and other defects. Provide wire ties and guys to 2-strand, twisted, pliable galvanized iron wire not lighter than 12 Ga. with zinc-coated turnbuckles. Provide not less than ½” diameter rubber or plastic hose, cut required lengths and of uniform color, material, and size to protect tree trunk form damage by wires.

PART 3 – EXECUTION

3.1 PREPARATION

A. General

1. Layout individual tree and shrub locations and areas for multiple plantings. Stake locations and outline areas and secure Landscape Architect’s acceptance before start of planting work. Make minor adjustments as may be required.

B. Preparation of Planting Soil
   1. Before mixing, clean topsoil of roots, plants, sods, stones, clay lumps, and other extraneous materials harmful or toxic to plant growth.

   2. Mix specified soil amendments and fertilizers with topsoil at rates specified. Delay mixing of fertilizer if planting will not follow placing of planting soil within a few days.

      A. “Schedule of Planting Soil Mixture Requirements” is attached at end of this section.

   3. For pit and trench type backfill, mix planting soil prior to backfilling, and stockpile at site.

   4. For planting beds and lawns, mix planting soil either prior to planting to apply on surface of topsoil and mix thoroughly before planting.

      A. Mix lime with dry soil prior to mixing of fertilizer

      B. Prevent lime from contacting roots of acid-loving plants.

      C. Apply phosphoric acid fertilizer (other than that constituting a portion of complete fertilizers) directly to sub-grade before applying planting soil and tilling.

C. Preparation for Planting Grass

   1. Loosen sub-grade of lawn areas to a minimum depth of 4”. Remove stones measuring over 1-1/2” in any dimension. Remove sticks, roots, rubbish, and other extraneous matter. Limit preparation to areas which will be planted promptly after preparation.

   2. Spread topsoil to minimum depth required to meet lines, grades and elevations shown, after light rolling and natural settlement. Add specified soil amendments and mix thoroughly into upper 4” of topsoil.

   3. Place approximately ½ of total amount of topsoil required. Work into top of loosened sub-grade to create a transition layer and then place remainder of planting soil. Add specified soil amendments and mix thoroughly into upper 4” of topsoil.

D. Preparation of Unchanged Grades

   1. Where lawns are to be planted in areas that have not been altered or disturbed by excavation, grading, or stripping operations, prepare soil for lawns planting as follows: Till to a depth of not less than 6”, apply soil amendments and initial fertilizers as specified; remove high areas and fill

depressions; till soil to a homogenous mixture of fine texture, free of lumps, cods, stones, roots, and other extraneous matter.

A. Prior to preparation of unchanged areas, remove existing grass, vegetation, and turf. Dispose of such materials outside of Owner's property. Do not turn existing vegetation over into soil being prepared for lawns. Apply specified commercial fertilizer at rates specified and thoroughly mix into upper 2" of topsoil. Delay application of fertilizer if lawn planting will not follow within a few days.

B. "Schedule of Planting Soil Mixtures Requirement" indicating required rate of fertilizer application, is attached at end of this section.

2. Fine grade lawn areas to smooth, even surface with loose, uniformly fine texture. Roll, rake and drag lawn areas, remove ridges, and fill depressions, as required to meet finish grades. Limit fine grading to areas which can be planted immediately after grading.

3. Moisten prepared lawn areas before planting if soil is dry. Water thoroughly and allow surface moisture to dry before planting lawns. Do not create a muddy soil condition.

4. Restore lawn areas to specified condition if eroded or otherwise disturbed after fine grading prior to planting.

E. Preparation of Plant Beds

1. Loosen sub-grade of planting bed areas to a minimum depth of 6" using a cult mulcher or similar equipment. Remove stones measuring over 1 ½" in any dimension. Remove sticks, stones, rubbish, and other extraneous matter.

2. Spread planting soil mixture to minimum depth required to meet lines, grades and elevations shown, after light rolling and natural settlement. Leave adequate room depth for mulch topdressing. Place approximately ½ of total amount of planting soil required. Work into top of loosened sub-grade to create a transition layer, and then place remainder of the planting soil.

3. Dig beds as shown on detail, deep and mix with specified soil amendments and fertilizers.

4. Remove existing soil and replace with prepared planting soil mixture.

5. After tree or shrub installation, and before spreading mulch, spread weed barrier over entire area and secure with pins. Lap barrier 12” at joints, cover barrier completely with mulch.

3.2 EXCAVATION FOR TREES AND SHRUBS

A. Excavate pits, beds, and trenches with vertical sides and at least 12” wider than root spread and deep enough to allow for setting of roots on a layer of compacted backfill as detailed with top of ball, or soil level in container set at same grade level as in nursery.

   1. For balled and burlapped (B&B trees and shrubs), make excavations at least half again as wide as the ball diameter and equal to the ball depth, plus following allowances for setting of ball on a layer of compacted backfill.

   2. Allow for 3” thick setting layer of planting soil mixtures.

   3. For container grown stock, excavate as specified for balled and burlapped stock, adjusted to size of container width and depth.

B. Dispose of subsoils removed from planting excavations. Do not mix planting soil or use backfill.

C. Fill excavations for trees and shrubs with water and allow water to percolate out before planting.

3.3 PLANTING TREES AND SHRUBS

A. Set balled and burlapped (B&B) stock on layer of compacted planting soil mixture, plumb in center of pit or trench with top of ball or surface of container soil at the same elevation as adjacent finished landscape grades, minus three inches to allow for mulch top dressing. Remove burlap from sides of balls; retain on bottoms.

B. When set, place additional backfill around base and sides of ball, and work each layer to settle backfill and eliminate voids and air pockets. When excavation is approximately 2/3-full, water thoroughly before placing remainder of backfill. Repeat watering until no more is absorbed. Water again after placing final layer of backfill.

C. Mulch pits, trenches, and planted areas. Install weed barrier over entire area and secure with pins. Provide not less than following thickness of mulch, and work into top of backfill and finish as shown on detail.

   1. Provide 3” thickness of mulch to equal finish grades shown on the drawings.

D. Apply anti-desiccant, using power spray, to provide an adequate film over trunks, branches, stems, twigs, and foliage.

1. If deciduous trees or shrubs are in full-leaf, spray with anti-desiccant at nursery before moving and again 2 weeks after planting.

DI. Prune, thin out and shape trees and shrubs in accordance with standard horticultural practice. Prune trees to retain required height and spread. Unless otherwise directed by Landscape Architect, do not cut tree leaders, and remove only injured or dead branches from flowering trees, if any. Prude shrubs to retail natural character.

DII. Remove and replace excessively pruned or misformed stock resulting from improper pruning.

DIII. Wrap tree trunks of 2” caliper and larger. Start at ground and cover trunk to height of first branches and securely attach. Inspect tree trunks for injury, improper pruning and insect infestation and take corrective measures before wrapping.

DIV. Guy and stake trees immediately after planting, as indicated.

3.4 INSTALLATION OF LANDSCAPING EDGING

A. Layout edging to outline of planting areas.

B. Neatly cut asphalt or lawn areas as required for steel edging installation.

C. Install steel edging true to line and grades indicated. Set top of edging flush with finished grade.

D. Drive steel stakes through slots punched in steel edging. Set top of stakes ½ inch. Min below top of edging.

E. Patch asphalt cut for installation of edging and/or reseed lawn areas. Restore such areas to their original condition.

3.5 SEEDING NEW LAWNS AND WILDFLOWER AREAS

A. Do not use wet seed or seed which is moldy or otherwise damaged in transit or storage.

B. Sow seed using a spreader or seeding machine. Do not seed when wind velocity exceeds 5 mi. per hr. Distribute seed evenly or over entire area by sowing equal quantity in two directions at right angles to each other.

C. Sow not less than the quantity of seed specified or scheduled.

D. Rake seed lightly into top 1/8” of soil, roll lightly and water with a fine spray.

E. Protect seeded slopes against erosion with netting or other methods acceptable to Landscape Architect.

F. Protect seeded areas against erosion by spreading specified lawn mulch after completion of seeding operations. Spread uniformly to form a continuous blanket not less than 1 ½” loose measurement over seeded areas.

1. Anchor mulch by spraying with asphalt emulsion at the rate of 10 to 13 gallons per 1000 sq. ft. Take precautions to prevent damage or staining of construction or other plantings adjacent to mulched area.

3.6 MAINTENANCE

A. Begin maintenance immediately after planting.

B. Maintain trees, shrubs, and other plants until final acceptance but in no case less than following period.

1. 24 months after substantial completion of planting.

C. Maintain trees, shrubs and other plants by pruning, cultivation and weeding as required for healthy growth. Restore planting saucers. Tighten and repair stakes and guy support and reset trees and shrubs to proper grades or vertical position as required. Restore or replace damaged wrappings. Spray as required to keep trees and shrubs free of insects and disease.

D. Maintain lawns for not less than the period stated below, and longer as required to establish an acceptable lawn.

1. Seeded lawns, not less than 60 days after substantial completion.

2. If seeded in fall and not given full 60 days of maintenance, or if not considered acceptable at that time, continue maintenance the following spring until acceptable lawn is established. Seeded lawns, not less than 30 days from substantial completion.

E. Maintain lawns by watering, fertilizing, weeding, mowing, trimming, and other operations such as rolling, regarding, and replanting as required to establish a smooth, acceptable lawn, free of eroded or bare areas.

3.7 CLEANUP AND PROTECTION

A. During landscape work, keep pavement clean and work area in an orderly condition

B. Protect landscape work and materials from damage due to landscape operations, operations by other contractors and trades and trespassers. Maintain protection during installation and maintenance periods. Treat, repair or replace damaged landscape work as directed.

3.8 INSPECTION AND ACCEPTANCE

A. When landscape work is completed, including maintenance, Landscape Architect will, upon request, make an inspection to determine acceptability.

1. Landscape work may be inspected for acceptance in portions as agreeable to Landscape Architect, provided each portion of work offered for inspection is complete, including maintenance.

B. When inspected landscape work does not comply with requirements, replace rejected work and continue specified maintenance until reinspected by Landscape Architect and found to be acceptable. Remove rejected plants and materials promptly from project site.

3.9 SCHEDULE OF PLANTING SOIL MIXTURE REQUIREMENTS

A. For planting beds, provide not less than the following quantities of specified materials

1. One (1) part of loose peat humus and one (1) part manure to four (4) parts topsoil by volume.

2. 20 lbs. of commercial fertilizer per 1,000 sq. ft. or manufacturer’s recommended rate.

B. For backfill for trees and shrubs, provide specified materials not less than the following quantities.

1. One (1) part of loose peat humus and one (1) part manure to four (4) parts topsoil by volume.

2. 1.8 oz. of commercial fertilizer per cu. Ft. of backfill (3lbs./cu. Yd.)

C. For Lawn areas, provide not less than the following quantities of specified materials.

1. One (1) part of loose peat humus to three (3) parts of topsoil by volume.

D. The rate of lime application per 1,000 sq. ft. shall be as follows, depending upon the hydrogen ion concentration (pH0 of topsoil shown by the chemical analysis)

pH	Pounds per 1,000 sq. ft.
4.5 to 5.0	150
5.0 to 5.5	100
5.5 to 6.0	50
6.0 to 6.5	25
6.5 to 7.0	0

E. Apply specific commercial fertilizer at rate of 25 pounds per 1,000 sq. ft. and worked lightly into upper 2” topsoil. Delay application of fertilizer if lawn planting will not follow within a few days.

3.10 SCHEDULE OF GRASS SEED MIXTURES

A. Seed for lawn areas

Proportion by Weight	Common Name	Botanical Name	Min % Germ.	Min % Pure Sd.	Max% Weed Sd.
45%	Kentucky Bluegrass	Poa Pratensis	80	85	0.50
35%	Chewings Red Fescue	Festuca rubra var.	85	98	0.50
10%	Perennial Ryegrass	Lolium Perenne	90	98	0.50
10%	Redtop	Agrostis	85	92	1.00

2. Seeding Rate

    a. Sow mixture at a rate of 5 pounds per 1,000sq. ft. minimum.

B. Seed mix for wildflower areas (steep slopes)

1. Seed Mix

    ERNMX-181 as supplied by Ernst Conservation seeds, Inc. 8884 Mercer Pike, Meadville, PA, 16335, (800) 873-3321, or approved equal.

2. Species Mix

28.7% Sorghastrum nutans, PA Ecotype (Indiangrass, PA Ecotype)
20.0% Lolium multiflorum (L. perenne var. italicum) (Annual Ryegrass)
10.0% Elymus virginicus, PA Écotype (Virginia Wildrye, PA Ecotype)
8.0% Andropogon gerardi, 'Niagara' (Big Bluestem, 'Niagara")
7.6% Tridens flavus (Purpletop)

7.0% Elymus canadensis (Canada Wildrye)
4.2% Schizachyrium scoparium (Andropogon scoparius), Fort Indiantown Gap PA Ecotype (Little Bluestem, Fort Indiantown Gap-PA Ecotype]
3.0% Agrostis perennans, Albany Pine Bush-NY Ecotype (Autumn Bentgrass, Albany Pine Bush-NY Ecotype)
3.0% Panicum virgatum, 'Shawnee' (Switchgrass, 'Shawnee')
2.5% Echinacea purpurea [Purple Coneflower)
2.0% Chamaecrista fasciculata (Cassia f.], PA Ecotype (Partridge Pea, PA Ecotype)
1.0% Coreopsis lanceolata (Lanceleaf Coreopsis)
1.0% Rudbeckia hirta, Coastal Plain NC Ecotype (Blackeyed Susan, Coastal Plain NC Ecotype]
0.7% Lespedeza virginica, VA Ecotype (Slender Lespedeza, VA Ecotype)
0.5% Aster novae-angliae (Symphyotrichum n.), PA Ecotype (New England Aster, PA Ecotype)
0.5% Monarda fistulosa, Fort Indiantown Gap-PA Ecotype (Wild Bergamot, Fort Indiantown Gap-PA Ecotype)
0.3% Liatris spicata (Slender Gayfeather, FL Ecotype)

3. Seed Rate
   Sow mixture at a rate of 60 pounds per acre, or 1 pound per 1,000 sq. ft. minimum.

C. Seed mix for "No-Mow" Grass Areas at Playscape

1. Seed Mix

   ECO-GRASS Fescue Mixture by Prarie Moon Nursery, 32115 Prairie Lane, Winona, MN, 55987 or approved equal.

2. Species Mix

Proportion by Weight	Common Name	Min % Germ	Inert	Weed	Noxious Weeds
19.60 %	Blue Mesa Sheep Fescue	80 %	0.02 %	1.37 %	0.00 %
19.09 %	Intrigue Chewings Fescue	85 %	0.02 %	1.37 %	0.00 %
14.80 %	Sword Hard Fescue	85 %	0.02 %	1.37 %	0.00 %
14.88 %	Celestial Red Fescue	85 %	0.02 %	1.37 %	0.00 %
14.84 %	Boreal Creeping Red Fescue	85 %	0.02 %	1.37 %	0.00 %
14.80 %	Aurora II Hard Fescue	85 %	0.02 %	1.37 %	0.00 %

3. Seeding Rate

   a. Sow Mixture at a rate of spounds per 1,000 SF Min.

END OF SECTION 331000

DIVISION 33 – SITE UTILITIES

SECTION 331001 – STORM UTILITY DRAINAGE PIPING AND STRUCTURES

PART 1- GENERAL

1.1 SUMMARY AND RELATED REQUIREMENTS

A. Drawings and general provision of Contract, including Division-01, General Requirements, apply to work of this section.

B. Refer to other sections of the specifications, drawings, and details to determine type and extent of work there is affecting the work of this section, whether or not such work is specifically mentioned in this section. It is the intent of this specification to include all labor and material required to complete this section whether or not it is clearly or explicitly shown.

C. This section includes, but is not limited to, the following:

1. Stormwater Piping and Structures

D. Related Requirements: Section 312000 “Earth Moving”

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Show Drawings:

1. Drainage structures: Include plans, elevations, sections, details, frames, cover, and grates, including dimensions, allowable height of cover information, and installation instructions.

2. Product Data: Storm Pipe and Fitting including manufacturer’s specifications (AASHTO M-252 or AASHTO M-294)

C. Product Certificates: for each type of product indicated.

1.3 PROJECT CONDITIONS

A. Location of Storm Sewer and Storm Sewer Drainage Structures: The location, elevation, and grades of storm sewers and storm sewer drainage structures are shown on the Drawings and shall be adhered to as closely as possible. If during construction of the project, it becomes necessary to make changes in the location or grades of the storm sewers, the Engineer will issue appropriate directions after being contacted by the Contractor.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Do not store plastic pipe and fittings in direct sunlight.

B. Provide temporary end caps and closure on piping and fittings. Maintain in place until installation. Protect pipe, pipe fittings, and seals from dirt and damage.

C. Handle drainage structures according to manufacturer's written rigging instructions

PART 2 – PRODUCTS

2.1 STORM PIPE AND FITTINGS

A. Corrugated Solid Polyethylene Pipe, Dual Wall with smooth interior (solid and perforated): Conform to AASHTO M-252 (4-to110-inch diameter), conform to AASHTO M-294 (12-to-36-inch diameter)

1. Coefficient of Roughness (interior pipe surface): 0.012 maximum (Manning formula).

2. Classification: Type S, Soil-tight, integral bell and spigot joints. Joints shall come sealed with factory installed rubber O-ring gaskets that meet ASTM F-477.

3. Joint Couplings (Soil-tight) Polyethylene, bell-and-spigot type couplers utilizing an elastomeric gasket conforming to ASTM F477.

4. Fittings: High Density polyethylene meeting the properties specified for the pipe either molded or fabricated. Designed specifically for the pipe furnished and manufactured for the pipe.

5. Acceptable Manufacturer: ProLink ST (N-12 1B ST), Smooth Interior Pipe & Fittings by Advanced Drainage Systems, Inc. (ADS) 3300 Riverside Dr., Columbus, OH 43221; (614) 457-3051, or approved equal.

PART 3 – EXECUTION

3.1 EARTHWORK

A. Excavation, trenching, and backfilling are specified in Section 312000, "Earth Moving"

3.2 PIPING INSTALLATION

A. General Locations and Arrangements: Drawing plans and details indicate general location and arrangement of underground storm drainage piping. Location and arrangement of piping layout to take into account design considerations. Install piping

as indicated, to extent practical. Where specific installation is not indicated, follow piping manufacturer's written instructions.

B. Laying: Lay pipe to indicated line and grade with a firm uniform bearing for the entire length of the pipe. Fill excess excavation with material indicated on the drawings, compact backfill as indicated on the drawings.

C. Install piping beginning at low point, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements.

D. Install drainage structure for changes in direction unless fittings are indicated. Use fittings for branch connections unless direct tape into existing sewer is indicated.

E. Joints: Install coupling and fasten per manufacturer's instructions.

F. Connections:

1. Make connections to existing drainage structures by cutting into the floor or bench of the drainage structure and forming a new channel.

2. If the pipe or structures with which connections are to be made have not been installed, install the pipe to a point directed by the Landscape Architect/Engineer and plug or cap the end in a satisfactory manner.

3.3 CONNECTIONS

A. Make connections to existing piping and underground drainage structures.

B. Use commercially manufactured wye fittings for piping branch connections. Remove section of existing pipe; install wye fitting into existing piping; and encase entire wye fitting, plus 6-inch overlap, with not less than 6 inches of concrete with 28-day comprehensive strength of 3000 psi.

C. Make branch connections from side into existing piping, NPS 4 to NPS 20. Remove section of existing pipe, install wye fitting into existing piping, and encase entire wye with not less than 6 inches of concrete with 28-day compressive strength of 3000 psi.

D. Protect existing piping and structures to prevent concrete or debris from entering while making tap connections. Remove debris or other extraneous material that may accumulate.

3.4 CLOSING ABANDONED STORM DRAINAGE SYSTEMS

A. Abandoned Piping: Close open ends of abandoned underground piping indicated to remain in place. Include closures strong enough to withstand hydrostatic and earth pressures that may result after ends of abandoned piping have been closed. Use procedure below:

   1. Close open ends of piping with at least 8-inch-thick, brick masonry bulkheads. Close open ends of piping with threaded metal caps, plastic plugs, or other acceptable methods suitable of size and type of material being closed. Do not use wood plugs.

B. Abandoned Structures: Excavate around structures as required and use either procedure below.

   1. Remove structure and close open ends of remaining piping.

   2. Remove top of structure down to at leas 36 inches below final grade. Fill to within 12 inches if top with stone, rubble, gravel, or compact dirt. Fill to top with concrete.

C. Backfill to grade according to Section 312000, “EarthMoving”

3.5 IDENTIFICATION

A. Materials and their installation are specified in Section 312000 “EarthMoving.” Arrange for installation of green detectable warning tape directly over piping and at outside edge of underground drainage structures.

3.6 FIELD QUALITY CONTROL

A. Cleaning: Clear interior of drainage structures of dirt and other superfluous material as work progresses.

   1. Flush piping between drainage structures to remove collected debris.

B. Interior Inspection: Inspect piping to determine whether line displacement of other damage has occurred.

   1. Make inspections of pipe between drainage structures/fittings, after pipe has been installed and approximately 2 feet of backfill is in place, and again at completion of project.

   2. If inspection indicated poor alignment, debris, displaced pipe, infiltration, or other defects, correct such defects, and re-inspect.

C. Water Tightness of Storm Sewer Structures: It is the intent of the Drawings and these Specifications that the completed storm sewer structure shall be as watertight and free from infiltration as practical. All visible leaks or points of infiltration shall be repaired.

END OF SECTION 331001

SECTION 331002 – RAIN GARDENS

PART 1 - GENERAL

1.1 SUMMARY AND RELATED REQUIREMENTS

A. Drawings and general provisions of Contract, including Division-01, General Requirements, apply to the work o this section.

B. Refer to other sections of the specifications, drawings, and details to determine type and extent of work there is affecting the work of this section, whether or not such work is specifically mentioned in this section. It is the intent of this specification to include all labor and material required to complete this section whether or not it is clearly or explicitly shown.

C. Extent of work includes, but is not limited to, the following:
   1. Excavation, grading, and storm water line trenching related to construction of rain gardens
   2. Installation of filter media, under drainage/piping, filter fabric and other appurtenances as show on the Drawings
   3. Installation of landscape plantings and mulch as shown on the Drawings and specified in Section 329300 – Landscaping.

D. Related Requirements
   1. Section 312000, Earth Moving
   2. Section 331001, Storm Utility Piping and Structures
   3. Section 329300, Landscaping

1.2 SUBMITTALS

A. Filter Media
   1. Material certificate signed by supplier, certifying the content and mix of filter media and source

B. Filter Fabric
   1. 12 inch by 12-inch sample

PART 2 - PRODUCTS

2.1 FILTER MEDIA

A. The soil for bioretention shall be a uniform mix, free of stones, stumps, roots, or other similar objects larger than two (2) inches in diameter. No other materials or substances shall be mixed or dumped within the bioretention area that may be harmful to plant growth or prove a hindrance to planting maintenance operations. The planting soil shall be free of noxious weeds. The soil mixture shall be a mixture of two (2) parts

sand and one (1) part topsoil. By volume, sand shall meet the requirements of NYSDOT § 703.07 Concrete Sand. The topsoil shall meet the requirements of NYSDOT § 713-01 Topsoil-Type A. The mixture shall have a PH range of 5.2 to 7.6.

B. The planting soil shall be tested and shall meet the following criteria:

PH RANGE	5.2 – 7.6
ORGANIC MATTER	1.5% - 4%
MAGNESIUM	35LB/AC
PHOSPHORUS PzO5	75LB/AC
POTASSIUM K2O	85LB/AC
SOLUBLE SALTS	NOT TO EXCEED 550PPM

2.2 FILTER FABRIC

A. Mirafi 140 N or approved equal.

B. 20 mil poly waterproof liner.

2.3 PIPING

A. 8-inch diameter HDPE storm sewer outlet pipe with smooth waterway liner complying with ASTM F2648 U.N.O.

B. 18-inch diameter light duty yard drain basin with domed light duty grate.

2.4 MULCH

A. Round river stone conforming to NYSDOT 2008 Standard Specifications Table 703-4 #3 stone gradation requirements.

2.5 PLANT MATERIALS

A. As shown on the Drawings

PART 3 – EXECUTION

3.1 All bioretention areas shall have a minimum of one (1) test. Each test shall consist of both standard soil test for PH, phosphorous and potassium and additional tests of organic matter, and soluble salts. A textural analysis is required from the site stockpiled topsoil. If topsoil is imported, then the texture analysis shall be performed at each location where the topsoil was excavated.

3.2 Excavation, trenching ad back filling is specified in Section 312000, “Earth Moving.”

3.3 Installation of piping is specified in Section 331001 – Site Storm Utility Drainage Piping and Structures.

3.4 Installation of Plant Materials is specified in Section 329300 Landscaping

END OF SECTION 331002