Planting Fields Entry Drive Trees, Walk and Drive Repair Bid Instructions & Bid Form

ISSUE: **27 February 2023**

PRE-BID ONSITE: **Monday March 6th at 2:00 PM**

BID DUE: Wednesday March 15th by 4:00 PM
Sealed Envelope, Hand Delivered to Planting Fields Foundation

Request for BIDS
Planting Fields Foundation Entry Drive: Trees, Walk and Drive Repair
1395 Planting Fields Road, Oyster Bay, NY 11771

Site Overview: Planting Fields is a 409-acre public garden, historic site, and state park located on the north shore of Long Island in Oyster Bay, NY. It features over 10,000 different types of plants, 22 different gardens, 2 1/2 acres of greenhouses, and over 20 historic buildings.

Project Description
Planting Fields Foundation, working collaboratively with NYS Parks, Long Island Capitol District, is implementing landscape improvements as identified in the 2022 adopted Cultural Landscape Report. This report highlights the need to re-establish several important historic landscape features on the property. This bid request addresses the planting of 110 oak trees, the construction of an accessible walk, new pedestrian walk, the repair of the entry drive to establish a uniform width and other small elements related to this work. Related work includes removal of several deciduous, evergreen and ornamental trees within the project area. This work follows a 2022 project which removed much of the plantings along the main drive for new tree planting and walk construction.

Project Drawings, Specifications and Supplemental Bidding Requirements
Planting Fields Foundation and Heritage Landscapes have prepared the following contract documents for planting, walk construction and drive modifications along the Main Entry Drive from Planting Fields Road.

1. Drawings Set: "Planting Fields Arboretum Entry Drive: Trees, Walk, and Drive Repair" Dated 27 February 2023 Construction Bid Set
2. Project Manual: "Planting Fields Arboretum Main Entry Drive: Trees, Walks and Drive Repair" dated February 27, 2023
3. New York State, Parks, Recreation and Historic Preservation "Supplemental Bidding Requirements" Revised 2021.
4. Contractor Supplemental Qualifications Form

Bidding Criteria: This project involves two primary work components. The contractor is to provide a bid to undertake the work under a single contract and bid on the following:

A. Concrete Walk Construction, Asphalt Drive Repair, Modest Masonry with Related Grading

B. Tree Planting, Turf Seeding and Related Soils Management.

Bid Submission

- The Bid Submission must include/Identify the **Prime Contractor** and any/all **Sub-Contractor**s identifying the general responsibility for each, example, excavation and earthwork, concrete work, and plating.

General Information

- The potential Contractor (principal or managerial level staff) is required to walk the project site with Landscape Architect/and or Other representative as designated by the Owner, to review the existing conditions and work scope in advance of providing a Bid Proposal. Attending the pre-Bid Meeting is highly recommended. **The pre-bid meeting will be held on-site at 2:00 pm Monday, March 6, 2023.**
- **Contractors may submit questions up until 4:00 PM on Monday March 13th. 2023**
- The work is indicated on the Drawing Set and in the Project Manual
- The primary area for planting is on both sides of the Planting Field Entry Drive. Walk construction occurs on the west side of the drive and from parking lot east to that drive.
- The drive is the only available entrance and exit for visitors and tenants at Planting Fields and is required to remain passable during construction operations.
- Planting Fields is open to the public year-round, the Contractor is responsible for implementing pedestrian protection warning signs, and other measures to keep visitors outside of all construction activity zones.
- The Contractor shall include the cost of tree removals and disposal off site as part of this contract cost.
- The Contractor shall be aware that soils management for this project shall include the removal and stockpiling of topsoil for reuse. Topsoil not reused for preparation and reestablishment of turf shall remain the property of Planting Fields. Excavated subsoil not used for establishing rough grade shall remain on-site and be placed as directed. If stockpiled topsoil is insufficient for required grading and turf work, Planting Fields will supply topsoil to the project site for the Contractors use in completing the project requirements. The Contractor shall include all labor

necessary to complete the work scope under this Contract. A change order for labor to move/spread/grade Owner supplied topsoil will not be accepted.

- Bid is to include all labor, tools, equipment, and necessary materials to complete the contract work.

Work to be completed by June 1, 2023 or earlier.

New York State required clauses for Bidder Compliance:

1. This project is funded in part by a grant from the NYS Office of Parks, Recreation and Historic Preservation through Title 9 of the Environmental Protection Act of 1993.
2. NYS Parks and Planting Fields Foundation does not pay sales tax, therefore your proposal should not include it.
3. This construction project is subject to New York State prevailing wages. Construction workers are to be paid NYS prevailing wages for comparable job positions. Contact NYS Department of labor for details. Construction firms are subject to audit for prevailing wage compliance.
4. Pursuant to Public Building Law § 8(6), effective January 11, 2020, for any projects where the project design commenced on or after January 1, 2020 and for any contracts over $5,000 for the work of construction, reconstruction, alteration, repair, or improvement of any State building, a responsible and reliable NYS-certified Minority or Women-Owned Business Enterprise that submits a bid within ten percent of the lowest bid will be deemed the apparent low bidder provided that the bid is $1,400,000 or less, as adjusted annually for inflation beginning January 1, 2020. If more than one responsible and reliable MWBE firm meets the requirements, the MWBE firm with lowest bid will be deemed the apparent low bidder. This project commenced design on or after January 1, 2020 and is subject to this provision.

Bidding Contacts:
Site review visits in addition to the pre-bid meeting on March 6, 2023 can be arranged with:
Donna Moramarco via email: dmoramarco@plantingfields.org

Questions should be emailed to:
Peter Viteretto, Project Landscape Architect viteretto@heritagelandscapes.com
Collin Sitz, Project Staff sitz@heritagelandscapes.com

Heritage Landscapes LLC office phone 203-852-9966, Peter mobile 203-858-6110

Provide your bid no later than 4:00 pm on Wednesday, March 15, 2023.
Bids must be submitted in a sealed envelope clearly marked with the Bidders' Name, Address and Project Name: Planting Fields Arboretum, Main Entry Drive: Trees, Walks and Drive Repair."
Hand Delivered to:
Planting Fields Foundation, Coe Hall, 1395 Planting Fields Road, Oyster Bay, NY 11771

BID FORM

Bids must be guaranteed for a period of four months. Company signature indicates such guarantee. Bid submission shall be formatted to provide the following information.

Company Name:

Company Street Address:

Company Representative Signature:

Typed name of Company Signer:

Bidder Contact person:

Contact Phone Number:

Contact email:

Bid Amount for All Work identified in drawings and specifications:

In Numbers $

In Text $

Sub-Contractors Identification

List of Sub-Contractors and responsibilities of each one:

THIS REQUEST FOR BIDS IS NOT A GUARANTEE OF EXECUTION OF A CONTRACT.

Contractor Supplemental Qualification Form

As part of the bid submission, provide supplemental information on **the Contactors**, and **Sub-Contractors** experience with similar work.

- ☐ Handling and Planting of Trees of 5-inch caliper and larger
- ☐ Construction of Concrete Walks, Asphalt Paving and Related Drive work
- ☐ Soils Management and Grading Operations

Three project references are requested.

Contractor Prior Projects Reference Form - Provide 3 Project References

1. Completed Project Reference

Project Name

_____

Project Reference Owner Name and Contacts

Company/Business/Institution Name:_____

Contact Name:_____

Email:_____

Phone number: _____

Project Work Tasks Summary:

- ☐ Tree Planting
- ☐ Excavation, Controlled Backfill
- ☐ Modified Soils
- ☐ Rough and Fine Grading
- ☐ Establish turf
- ☐ Concrete Walks
- ☐ Curbstone Setting
- ☐ Drain Inlets, Pipes
- ☐ Other _____

Project Description:

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2. Completed Project Reference

Project Name

_____

Project Reference Owner Name and Contacts

Company/Business/Institution Name:_____

Contact Name:_____

Email:_____

Phone number: _____

Project Work Tasks Summary:

- ☐ Tree Planting
- ☐ Excavation, Controlled Backfill
- ☐ Modified Soils
- ☐ Rough and Fine Grading
- ☐ Establish turf
- ☐ Concrete Walks
- ☐ Curbstone Setting
- ☐ Drain Inlets, Pipes
- ☐ Other _____

Project Description:

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3. Completed Project Reference

Project Name:

_____

Project Reference Owner Name and Contacts

Company/Business/Institution Name:_____

Contact Name:_____

Email:_____

Phone number: _____

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Project Work Tasks Summary:

- ☐ Tree Planting
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- ☐ Modified Soils
- ☐ Rough and Fine Grading
- ☐ Establish turf
- ☐ Concrete Walks
- ☐ Curbstone Setting
- ☐ Drain Inlets, Pipes
- ☐ Other _____

Project Description:

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(End of Project Supplemental qualification Form, return as part of the bid submission)

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NEW YORK STATE OF OPPORTUNITY. | Parks, Recreation and Historic Preservation

Kathy Hochul
Governor

Erik Kulleseid
Commissioner

SUPPLEMENTAL BIDDING REQUIREMENTS

PROGRAM INFORMATION

Notice to Contractors, Subcontractors, Suppliers and Vendors

Attachment A-1 – Program Specific Terms and Conditions

Minority/Women Owned Business Enterprises Summary

REQUIRED FORMS

Non-Collusive Bidding Certification – *to be submitted with bid*

Grants MWBE Utilization Plan – *to be submitted within seven days of award notification*

SAMPLE FORMS – *for information only*

Equal Employment Opportunity Policy Statement

Contractors Solicitation Log

Cumulative Payment Statement

Monthly Workforce Employment Utilization Report

Waiver Request Form

NYS OPRHP - Long Island Region, Post Office Box 247, Babylon, NY 11702

Revised 2021

NOTICE: Contractors, subcontractors, suppliers and vendors

This project is funded in part by a grant from the NYS Office of Parks, Recreation and Historic Preservation through Title 9 of the Environmental Protection Act of 1993. All contracts and subcontracts for the project are subject to the terms of the NYS Master Contract for Grants -- Standard Terms and Conditions (*MCG*), which can be found online at http://grantsreform.ny.gov, and Attachment A-1 (*A-1*) or Attachment A-2 *(A-2)*, attached hereto.

Note particularly the following requirements:

- The State's right to review and approve every subcontract in excess of $100,000. *MCG IV(B)(2)*
- The requirement that subcontracts contain provisions specifying (1) that work accord with the terms of the Master Contract, (2) that nothing can impair the rights of the State under the Master Contract, and (3) that nothing in the subcontract creates a contractual relationship between the subcontractor and the State. *MCG IV(B)(2)*
- Contractor's responsibility to submit vendor responsibility information to the State, including a Vendor Responsibility Questionnaire for subcontracts that equal or exceed $100,000. *MCG IV(B)(4)*
- Non-discrimination requirements *MCG IV(I) and A-1 I(I)*
- Equal Opportunity provisions, including a requirement that the following provisions be included in construction subcontracts in excess of $25,000:
    - The Contractor shall not discriminate against employees or applicants for employment because of race, creed, color, national origin, sex, age, disability or marital status;
    - The Contractor shall make and document its conscientious and active efforts to employ and utilize minority group members and women in its work force on State contracts;
    - The Contractor shall undertake or continue existing programs of affirmative action to ensure that minority group members and women are afforded equal employment opportunities without discrimination. Affirmative action shall mean recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff, or termination and rates of pay or other forms of compensation;
    - At the request of the State, the Contractor shall request each employment agency, labor union, or authorized representative of workers with which it has a collective bargaining or other agreement or understanding, to furnish a written statement that such employment agency, labor union or representative shall not discriminate on the basis of race, creed, color, national origin, sex, age, disability or marital status and that such union or representative shall affirmatively cooperate in the implementation of the Contractor's obligations herein; and
    - The Contractor shall state, in all solicitations or advertisements for employees, that, in the performance of the State contract, all qualified applicants shall be afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status. *MCG IV(J)*
- MWBE requirements *MCG IV(J)* and *A-1 I(H)* or, if the project uses federal funds, DBE requirements *MC I(V)* and *A-2 II(E)(1)* [or other guidance provided by the federal agency providing funding]
- Wages and Hours Provisions *MCG IV(Q)*
- New York State business requirement *A-1 I(G)*
- Worker's Compensation and Disability Benefits Insurance coverage *A-1 II(E)*

ATTACHMENT A-1
PROGRAM SPECIFIC TERMS AND CONDITIONS
ENVIRONMENTAL PROTECTION FUND

I. Agency Specific Terms and Conditions

A. The **Program Office, Designated Payment Office** and **Designated Refund Office** shall be the STATE AGENCY identified on the face page. Document submission and inquiries should be directed to the Regional Grant Administrator for the Contractor's county of operations.

B. For purposes of notice, the **Contractor's designee** shall be the CONTRACTOR DOS INCORPORATED NAME at the CONTRACTOR PRIMARY MAILING ADDRESS, as identified on the face page.

C. Payment shall be made to CONTRACTOR SFS PAYEE NAME at the CONTRACTOR PAYMENT ADDRESS identified on the Face Page.

D. Special Conditions and Requirements specific to the project, including the timeline for submission of required documents and reports, are contained in Attachment C (Work Plan).

E. Changes to Budget and Program Work Plan. Changes shall not be made in the work described in Attachment C (Work Plan) or the proposed expenditure of funds as shown in Attachment B (Budget), without the prior written approval of the State. Such approval will be granted if the changes are not substantive and do not alter the scope, intent or basic elements of the contract. Changes in the Work Plan or Budget that are substantive or alter the scope, intent or basic elements of the contract, if agreed to by the State, will be implemented by an amendment that may require approval and filing with the New York Attorney General Contract Approval Unit (AG) and the Office of the State Comptroller (OSC or State Comptroller), per Section I(B) of this Master Contract.

F. Procurement. All goods and services required for this project must be procured in a manner so as to assure the prudent and economical use of grant moneys, to facilitate the acquisition of goods and services of maximum quality at the lowest possible cost under the circumstances, and to guard against nepotism, favoritism, improvidence, extravagance, fraud and corruption.

1. If the Contractor is subject to General Municipal Law, documentation of the Contractor's compliance with the procurement and bidding requirements of General Municipal Law shall be included with the applicable request for reimbursement.

2. If the total amount of the goods or services is less than the dollar threshold for competitive bidding, or if the Contractor is not subject to General Municipal Law, the Contractor must follow procurement procedures designed to achieve the purpose of this clause. Such procedures may include, but are not limited to, competitive bidding, the solicitation of three price quotes, written requests for proposals, etc. When submitting a request for reimbursement, the Contractor must include a copy of the organizational procurement policy applicable to the relevant expenditures **and/or documentation of the specific procurement process used for those expenditures.**

G. The Contractor and all users of this contract are strongly encouraged, to the maximum extent practicable and consistent with legal requirements, to use responsible and responsive New York State businesses as subcontractors, suppliers, and in other supporting roles. The Contractor will be required to identify and describe New York State businesses used and the value of subcontracts and supply contracts.

H. New York State Executive Law Article 15-A and 5 NYCRR Parts 140-145 ("MWBE Regulations") Participation.

1. General Provisions

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

b. The contractor to the subject contract (the "Contractor" and the "Contract," respectively) agrees, in addition to any other nondiscrimination provision of the Contract and at no additional cost to the New York State Office of Parks, Recreation and Historic Preservation, to fully comply and cooperate with the New York State Office of Parks, Recreation and Historic Preservation 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 New York State certified minority and women-owned business enterprises ("MWBEs"). The 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.

c. Failure to comply with all of the requirements herein may result in a finding of non-responsiveness, non-responsibility and/or a breach of contract, leading to the withholding of funds or such other actions, liquidated damages pursuant to Section 7 hereof or enforcement proceedings as allowed by the Contract.

2. Contract Goals

a. For purposes of this procurement, the New York State Office of Parks, Recreation and Historic Preservation hereby establishes New York State certified minority-owned business enterprises ("MBE") participation and New York State certified women-owned business enterprises ("WBE") participation (collectively, "MWBE Contract Goals") based on the current availability of qualified MBEs and WBEs as defined in the bidders documentation provided at the time of solicitation. After contract approval, MWBE Contract Goals as defined on the approved utilization plan will be endorsed to determine compliance for the contract term.

b. For purposes of providing meaningful participation by MWBEs on the Contract and achieving the MWBE Contract Goals established in Section 2.a. hereof, the Contractor should reference the directory of New York State Certified MBWEs found at the following internet address: https://ny.newnycontracts.com.

Additionally, the Contractor is encouraged to contact the Division of Minority and Women Business Development ((518) 292-5250; (212) 803-2414; or (716) 846-8200) to discuss additional methods of maximizing participation by MWBEs on the Contract.

c. Where MWBE Contract Goals have been established herein, pursuant to 5 NYCRR § 142.8, the Contractor must document "good faith efforts" 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 it is found to have willfully and intentionally failed to comply with the MWBE participation goals set forth in the Contract, such a finding constitutes a breach of contract and the Contractor shall be liable to the New York State Office of Parks, Recreation and Historic Preservation for liquidated or other appropriate damages, as set forth herein.

3. Equal Employment Opportunity (EEO)

a. The Contractor agrees to be bound by the provisions of Article 15-A and the MWBE Regulations promulgated thereunder by the Division of Minority and Women's Business Development of the New York State Department of Economic Development (the "Division"). If any of these terms or provisions conflict with applicable law or regulations, such laws and regulations shall supersede these requirements.

b. The Contractor shall comply with the following provisions of Article 15-A:

1) Each contractor and subcontractor performing work on the Contract shall undertake or continue existing EEO programs to ensure that minority group members and women are afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status. For these purposes, EEO shall apply in the areas of recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff, or termination and rates of pay or other forms of compensation.

2) The Contractor shall submit an EEO policy statement to the New York State Office of Parks, Recreation and Historic Preservation within seventy two (72) hours after the date of the notice by New York State Office of Parks, Recreation and Historic Preservation to award the Contract to the Contractor.

3) If the Contractor or Subcontractor does not have an existing EEO policy statement, the New York State Office of Parks, Recreation and Historic Preservation may provide the Contractor or Subcontractor a model statement.

4) The Contractor's EEO policy statement shall include the following language:

i. The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, age, disability or marital status, will undertake or continue existing EEO programs to ensure that minority group members and women are afforded equal employment opportunities without discrimination, and shall make and document its conscientious and active efforts to employ and utilize minority group members and women in its work force.

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

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

iv. The Contractor will include the provisions of Subdivisions (i) through (iii) of this Subsection 4) and Paragraph "e" of this Section 3, which provides for relevant provisions of the Human Rights Law, in every subcontract in such a manner that the requirements of the subdivisions will be binding upon each Subcontractor as to work in connection with the Contract.

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

4. MWBE Utilization Plan

a. The Contractor represents and warrants that Contractor has submitted an MWBE Utilization Plan, by submitting evidence thereof through the New York State Contract System ("NYSCS"), which can be viewed at https://ny.newnycontracts.com, provided, however, that the Contractor may arrange to provide such evidence via a non-electronic method to the New York State Office of Parks, Recreation and Historic Preservation, either prior to, or at the time of, the execution of the contract.

b. The Contractor agrees to use such MWBE Utilization Plan for the performance of MWBEs on the Contract pursuant to the prescribed MWBE goals set forth in Section 2.a of this Attachment.

c. The Contractor further agrees that a failure to submit and/or use such MWBE Utilization Plan shall constitute a material breach of the terms of the Contract. Upon the occurrence of such a material breach, New York State Office of Parks, Recreation and Historic Preservation shall be entitled to any remedy provided herein, including but not limited to, a finding of the Contractor non-responsiveness.

5. Waivers

a. For Waiver Requests, the Contractor should use the NYSCS, provided, however, that Bidder may arrange to provide such evidence via a non-electronic method to New York State Office of Parks, Recreation and Historic Preservation.

b. If the Contractor, after making good faith efforts, is unable to comply with MWBE goals, the Contractor may submit a Request for Waiver documenting good faith efforts by the Contractor to meet such goals. If the documentation included with the waiver request is complete, the New York State Office of Parks, Recreation and Historic Preservation shall evaluate the request and issue a written notice of acceptance or denial within twenty (20) days of receipt.

c. If the New York State Office of Parks, Recreation and Historic Preservation, upon review of the MWBE Utilization Plan and updated Quarterly MWBE Contractor Compliance Reports determines that the Contractor is failing or refusing to comply with the MWBE Contract Goals and no waiver has been issued in regards to such non- compliance, the New York State Office of Parks, Recreation and Historic Preservation may issue a notice of deficiency to the Contractor. The Contractor must respond to the notice of deficiency within seven (7) business days of receipt. Such response may include a request for partial or total waiver of MWBE Contract Goals.

6. Quarterly MWBE Contractor Compliance Report. The Contractor is required to submit a Quarterly MWBE Contractor Compliance Report through the NYSCS, provided, however, that Bidder may arrange to provide such evidence via a non- electronic method to the New York State Office of Parks, Recreation and Historic Preservation by the 10th day following each end of quarter over the term of the Contract documenting the progress made towards achievement of the MWBE goals of the Contract.

7. Liquidated Damages – MWBE Participation

a. Where New York State Office of Parks, Recreation and Historic Preservation determines that the Contractor is not in compliance with the requirements of the Contract and the Contractor refuses to comply with such requirements, or if the Contractor is found to have willfully and intentionally failed to comply with the MWBE participation goals, the Contractor shall be obligated to pay to the New York State Office of Parks, Recreation and Historic Preservation liquidated damages.

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

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

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

c. In the event a determination has been made which requires the payment of liquidated damages and such identified sums have not been withheld by the New York State Office of Parks, Recreation and Historic Preservation, the Contractor shall pay such liquidated damages to the New York State Office of Parks, Recreation and Historic Preservation within sixty (60) days after they are assessed by the New York State Office of Parks, Recreation and Historic Preservation unless prior to the expiration of such sixtieth day, the Contractor has filed a complaint with the Director of the Division of Minority and Women's Business Development pursuant to Subdivision 8 of Section 313 of the Executive Law in which event the liquidated damages shall be payable if Director renders a decision in favor of the New York State Office of Parks, Recreation and Historic Preservation.

I. Non-Discrimination:

1. If the project involves development or acquisition of public facilities, the Contractor shall not limit access or discriminate in the operation of the facilities on the basis of place of residence, race, creed, color, national origin, sex, age, disability or marital status.

2. The Contractor agrees to comply with all applicable Federal, State, and local Civil Rights and Human Rights laws with reference to equal employment opportunities and the provisions of service.

J. Termination. In addition to the options available to the State in the Master Contract, in the event the Contractor fails to comply with its terms and conditions regarding completion of the project, the State at its option may require the Contractor to bring the project to a point of educational/interpretive, historical, recreational or conservation usefulness as determined by the State.

K. Documents submitted to the State may be subject to disclosure under the Freedom of Information Law.

L. Non-Sectarian Purposes. The Contractor agrees that funds made available as shown in Attachment B will only be used to achieve the intended public benefit and will not be used for any sectarian purposes.

M. International Boycott Prohibition. In accordance with Section 220-f of the Labor Law and Section 139-h of the State Finance Law, if this contract exceeds $5,000, the Contractor agrees, as a material condition of the contract, that neither the Contractor nor any substantially owned or affiliated person, firm, partnership or corporation has participated, is participating, or shall participate in an international boycott in violation of the federal Export Administration Act of 1979 (50 USC App. Sections 2401 et seq.) or regulations thereunder. If such Contractor, or any of the aforesaid affiliates of Contractor, is convicted or is otherwise found to have violated said laws or regulations upon the final determination of the United States Commerce Department or any other appropriate agency of the United States subsequent to the contract's execution, such contract, amendment or modification thereto shall be

rendered forfeit and void. The Contractor shall so notify the State Comptroller within five (5) business days of such conviction, determination or disposition of appeal (2NYCRR 105.4).

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

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

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

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

Q. Certification of Registration to Collect Sales and Compensating Use Tax by Certain State Contractors, Affiliates and Subcontractors. To the extent this agreement is a contract as defined by Tax Law Section 5-a, if the Contractor fails to make the certification required by Tax Law Section 5-a or if during the term of the contract, the Department of Taxation and Finance or the covered agency, as defined by Tax Law 5-a, discovers that the certification, made under penalty of perjury, is false, then such failure to file or false certification shall be a material breach of this contract and this contract may be terminated, by providing written notification to the Contractor in accordance with the terms of the agreement, if the covered agency determines that such action is in the best interest of the State.

R. Iran Divestment Act. By entering into this agreement, Contractor certifies in accordance with State Finance Law §165-a that it is not on the "Entities Determined to be Non-Responsive Bidders/Offerers pursuant to the New York State Iran Divestment Act of 2012" ("Prohibited Entities List") posted at: http://www.ogs.ny.gov/about/regs/docs/ListofEntities.pdf.

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

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

compliance, recovering damages, or declaring the Contractor in default.

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

II. Program Specific Terms and Conditions

A. Funding for this project is provided pursuant to the terms of the Environmental Protection Act, Title 9 of Article 54 of the Environmental Conservation Law, and governed by the Rules and Regulations set forth in 9 NYCRR Sections 439-443.

B. Retroactive funding. Notwithstanding the provisions of Section III(A)(2) of this Master Contract, program regulations set forth in 9 NYCRR 440.5 (Project sponsor's match) permit retroactive reimbursement of certain expenses, when those expenses are included in the project Budget.

C. Notwithstanding the provisions of Section III(C)(4) of this Master Contract, the State will **withhold ten percent (10%)** of the Contract Funding Amount identified on the face page of this Master Contract as security until all terms and conditions of this Master Contract have been satisfied by the Contractor to the satisfaction of the State.

D. Project Sign. At the commencement of the work described in the Work Plan, the Contractor shall erect a sign at the project site noting the State's assistance to the project. The project sign specifications and term length for this requirement are set forth in Attachment C (Work Plan).

E. Public Benefit Requirements.

1. In order to ensure a public benefit accrues from an acquisition, development or construction project that is being funded the Contractor shall:

   a. Afford the public reasonable access to or use of the project as specified by the State;

   b. Not impose a fee for use of or access to the project without the prior written approval of the State;

   c. Own or hold by lease or maintain and operate the project as specified by the State;

   d. Not allow operation of the project, or any portion thereof, by any other person, entity, or organization pursuant to any management agreement, license or other arrangement without first obtaining the written approval of the State;

   e. Not alter, demolish, sell, lease or otherwise convey the project, in whole or in part, or permit a change in use of the project, without the prior written approval of the State; and

   f. Submit all plans in writing for restoration, rehabilitation, improvement, demolition or other physical change to the completed project for State approval before work commences.

2. Other public benefit requirements specific to this project, including the term length of any property restriction (e.g., preservation covenant or public access covenant) and the legal mechanism for enforcing the restriction as specified by the State are set forth in Attachment C (Work Plan).

3. Parkland acquired or improved by a municipality shall not be sold, leased, exchanged or otherwise disposed of (collectively, "disposed of") or converted to other than public park purposes without the express authority of an act of the Legislature, which shall provide for the substitution of other land of equal fair market value and reasonably equivalent usefulness and location to that being disposed of or converted, and such other additional requirements as shall be required by the State.

4. Land acquired for recreation or conservation purposes by a not-for-profit organization shall be subject to a conservation easement (see, Title 3 of Article 49 of the Environmental Conservation Law) to be held by the State. Parkland shall not be disposed of by the not-for-profit organization except to the State, a local government unit or another qualifying tax exempt not-for-profit organization that shall be required to use it for recreation or conservation purposes. Disposal to any other entity of parkland acquired for recreation or conservation purposes by a not-for-profit corporation shall require the express authority of an act of the Legislature.

F. It is the Contractor's responsibility, pursuant to Sections 57 and 220(8) of the Workers' Compensation Law, to maintain for State audit and review either proof that they have Workers' Compensation and Disability Benefits Insurance coverage for any employees, or proof of exemption from the New York State Workers' Compensation Board. The Contractor must also obtain from any contractor or subcontractor hired to provide a service pursuant to this Master Contract, similar proof or waivers from the contractor or subcontractor, and must maintain such documentation on file for audit.

G. Archeology. In the event of any unanticipated archeological discoveries, the Contractor shall stop all work and notify the State immediately. Work shall not resume until the State determines how any previously undiscovered archeological remains will be treated. Special attention shall be given to any discovery of burials, graves, or human remains.

H. Preservation of Historic Properties. It is the public policy and in the public interest of the State to preserve New York's historical, archeological, architectural and cultural heritage. All activities under this Master Contract shall be reviewed under either Section 106 of the National Historic Preservation Act or Section 14.09 of the New York State Parks, Recreation and Historic Preservation Law to ensure that adverse effects or impacts on significant properties are avoided or mitigated. Any work that affects historic properties shall conform to The Secretary of the Interior's Standards for the Treatment of Historic Properties 1995, The Secretary of the Interior's Standards and Guidelines for Archeological Documentation or any other applicable Secretary of the Interior's Standards (collectively referenced as STANDARDS), which are available from the State.

I. Planning Requirements.

1. All planning documents, plans and specifications must be accepted by the State before the Contractor awards contracts for the project or the subject property. These must be prepared by a qualified professional accepted by the State.

2. Any documents developed under this Master Contract shall include recognition of funding through the Environmental Protection Fund from the Office of Parks, Recreation and Historic Preservation.

J. Construction Requirements. If the Project described in this Master Contract includes construction, the following shall apply:

1. Contract plans, specifications, and cost estimates shall be submitted to the State for review prior to the letting of any construction contract by the Contractor. The State shall verify that the plans, specifications and cost estimates are in conformance with the work described in Attachment B and shall so notify the Contractor in writing; the State shall further verify that appropriate documents have been prepared by a professional licensed to practice in the State of New York. All plans and specifications as reviewed shall become part of this Master Contract, and no change or revision may be made to such plans and specifications without the express written consent of the State.

2. The Contractor shall be responsible for assuring that the project is designed and constructed in conformance with the Uniform Federal Accessibility Standards (UFAS Appendix A to 41 CFR part 101 19.6), the Americans with Disabilities Act Accessibility Guidelines (ADAAG Appendix A to 28 CFR part 36) and the New York State Uniform Fire Prevention and Building (I) (Code (parts 1219 1228 of Title 19 NYCRR). Where there are discrepancies among the sets

of standards with regard to a particular design/construction requirement, the one providing for the greatest degree of accommodation for the disabled shall apply.

3. It is the Contractor's responsibility to assure that all work on the project complies with the State Environmental Quality Review Act, receives all required permits in advance, and complies with all applicable Federal, State and/or local laws including, but not limited to, zoning ordinances and building codes.

K. Post-Completion Requirements. Following completion of the project, the Contractor shall be responsible for maintaining project records. Where the project involves acquisition of equipment or acquisition of or improvement of real property, the Contractor shall be responsible for maintaining and operating the equipment, property, and/or improvements; providing public access; maintaining public signage related to the project; and seeking any required State approvals. The State shall have the right and responsibility to audit records and inspect the project and property for compliance.

MINORITY/WOMEN OWNED BUSINESS ENTERPRISES SUMMARY

The following procedures shall be followed to satisfy the requirements of the Omnibus Procurement Act with regard to the procurement of subcontractors and suppliers.

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

Empire State Development
Division Minority and Women's Business Development
Albany, NY 12245
Phone: (518) 292-5250
https://ny.newnycontracts.com (MWBE Directory search)

II. Definition. For the purposes of these clauses, the following definition shall apply:

A. "Certified business" shall mean either a business certified as a minority or women-owned business enterprise pursuant to section 314 of the Executive Law.

B. "Director" shall mean the Director of the Division of Minority and Women's Business Development established by section 311 of the Executive Law.

C. "Minority group member" shall mean a United States citizen or permanent resident alien who is and can demonstrate membership in one of the following groups:

1. Black persons having origins in any of the Black African racial groups;

2. Hispanic persons of Mexican, Puerto Rican, Dominican, Cuban, Central or South American of either Indian or Hispanic origin, regardless of race;

3. Native American or Alaskan native persons having origins in any of the original peoples of North America;

4. Asian and Pacific Islander persons having origins in any of the Far East countries, South East Asia, the Indian subcontinent or the Pacific Islands.

D. "Minority-owned business enterprises" shall mean a business enterprise, including a sole proprietorship, partnership or corporation that is:

1. at least fifty-one percent owned by one or more minority group members;

2. an enterprise in which such minority ownership is real, substantial and continuing;

3. an enterprise in which such minority ownership has and exercises the authority to control independently the day-to-day business decisions of the enterprise; and

4. an enterprise authorized to do business in this state and independently owned and operated.

E. "Subcontract" shall mean an agreement providing for total expenditures in excess of $25,000 for the construction, demolition, replacement, major repair, renovation, planning or design of real property and improvements thereon between a contractor and any individual or business enterprise, including a sole proprietorship, partnership, corporation or not-for-profit corporation, in which a portion of a contractor's obligation under a state contract is undertaken or assumed.

F. "Women-owned business enterprise" shall mean a business enterprise, including a sole proprietorship, partnership or corporation that is:

1. at least fifty-one percent owned by one or more United States citizens or permanent resident aliens who are women;

2. an enterprise in which the ownership interest of such women is real, substantial and continuing;

3. an enterprise in which such women ownership has and exercises the authority to control independently the day-to-day business decisions of the enterprise ; and

4. an enterprise authorized to do business in this state and independently owned and operated.

III. Good Faith Efforts. In order to show good faith efforts comply with the M/WBE participation goals of this contract, the contractor shall submit such documentation as will enable the STATE to make a determination in accordance with the following criteria:

A. Did the contractor submit a completed, acceptable utilization plan and EEO program aimed at meeting the goals for the participation of minorities and women in the contract?

B. Did the contractor place advertisements in appropriate general circulation, trade and minority or woman-owned publications in a timely fashion?

C. Did the contractor make written solicitations to women and minority-owned business enterprises listed in the directory of certified businesses in a timely fashion and include plans, specifications and contract terms. Did the businesses solicited respond in a timely fashion?

D. Could the contractor have reasonably structured the work to be performed under subcontracts so as to increase the likelihood of participation by certified businesses?

E. Did the contractor attend any pre-bid or pre-award meetings scheduled by the STATE with M/WBE's which the STATE determined were capable of performing work or supplying materials on the contract?

F. Were the subcontract terms and conditions offered to M/WBE's comparable to those offered in the ordinary course of the contractor's business to other subcontractors on the contract?

IV. Utilization Plans

A. If goals have been established by the STATE for the participation of certified M/WBE's on this agreement, at the direction of the STATE, but in no case later than execution of the agreement the contractor shall submit to the STATE a utilization plan on forms to be provided by the STATE. The utilization plan shall list all subcontractors and suppliers the contractor intends to use on the contract and indicate which are certified M/WBE's.

B. The STATE will review the utilization plan and will issue to the contractor a written notice of acceptance or deficiency within twenty days of receipt. A notice of deficiency shall include;

1. the name of any M/WBE which is not acceptable for the purpose of complying with M/WBE participation goals;

2. elements of the contract scope of work which the STATE has determined can be reasonably structured by the contractor to increase the likelihood of participation of M/WBES; and

3. other information which the STATE determines to be relevant to the utilization plan.

C. The contractor shall respond to the notice of deficiency within seven days of receipt by submitting to the STATE a written statement which remedies the deficiencies in the original plan. If the written remedy which the contractor submits is not timely or is found by the STATE to be inadequate, the STATE shall so notify the contractor within five days and direct the contractor to submit a request for a partial or total waiver of M/WBE participation goals on forms to be provided by the STATE. The request for waiver must be submitted within five days of the contractors receipt of a notice that the statement of remedy was untimely or inadequate.

D. A contractor who has made good faith efforts to obtain commitments from M/WBE subcontractors and suppliers prior to submitting its utilization plan may request a waiver at the same time it submits its utilization plan. If a request for waiver is submitted with the utilization plan, and is not accepted by the STATE at that time, the provisions of clauses (b) and (c), regarding the notice of deficiency and written remedy will apply. In this case, the contractor may submit a second request for waiver as directed by the STATE.

E. If the contractor does not submit a request for waiver, or if the STATE determines that the utilization plan does not indicate that the M/WBE participation goals will be met and that the good faith efforts of the contractor have been inadequate to justify the granting of the request for waiver, the STATE shall

terminate the contract, or if the contract has not been executed, the STATE shall withdraw from contract negotiations. Notice of termination or withdrawal, along with a denial of a request for waiver, where applicable, shall be delivered to the contractor no later than twenty days after the STATE receives the request for waiver.

F. The contractor shall attempt to utilize, in good faith, any MBE or WBE identified within its utilization plan, at least to the extent indicated in the plan.

V. Administrative Hearing on Disqualification of Contractor.

A. If the STATE disqualifies the contractor on the ground that the contractor has failed to remedy deficiencies in its utilization plan or document good faith efforts to remedy such deficiencies, the contractor shall be entitled to an administrative hearing, on the record, before a hearing officer appointed by the STATE, to review the determination of disqualification of the contractor.

B. The hearing officer's determination shall be a final administrative determination of the STATE and shall be reviewable by a proceeding brought pursuant to the Civil Practice Law and Rules, provided such proceeding is commenced within thirty days of notice given by certified mail, return receipt requested, rendering such final administrative determination in accordance with the provisions of section 313 of the Executive Law.

C. Such review shall be commenced in the Supreme Court, Appellate Division, Third Department, and shall be heard and determined in preference to all other civil business pending therein, except election matters, irrespective of position on the calendar. Appeals taken to the Court of Appeals of the State of New York shall be subject to the same preference.

VI. Reports.

The contractor shall submit, and shall require subcontractors to submit, reports showing the participation of all business enterprises on this contract, including minority and women-owned business enterprises on forms and at intervals to be established by the STATE. Reports not submitted at such times as shall be required by the STATE shall be cause for the STATE to delay implementing scheduled payments to the contractor.

VII. Contractor's Failure or Inability to Meet M/WBE Participation Goals.

A. If the contractor, after making good faith efforts, is unable to comply with a contract's M/WBE participation goals, the contractor may submit a request for a partial or total waiver on forms provided by the STATE. If the documentation required with the request for a waiver is complete, the STATE shall evaluate the request and issue a written notice of acceptance or denial within twenty days of receipt.

B. If the STATE, upon review of the contractor's utilization plan and compliance reports, determines that the contractor is failing or refusing to comply with M/WBE participation goals, and no waiver has been issued in regards to such non-compliance, the STATE may issue a notice of deficiency to the contractor. The contractor must respond to the notice within seven days of receipt. This response may include a request for partial or total waiver of M/WBE participation goals.

VIII. Contractor and Agency Complaints, Arbitration.

A. If the contractor submits a request for a waiver of M/WBE participation goals and the STATE denies the request or fails to respond within twenty days of receiving it, the contractor may file a complaint with the Director according to the provisions of section 316 of Article 15-A of the Executive Law. The complaint must be filed within twenty days of the STATE's receipt of the request for waiver, if the STATE has not responded in that time, or within twenty days of a notification that the request has been denied by the STATE.

B. If the contractor fails to respond to a notice of deficiency, the STATE may file a complaint with the Director pursuant to section 316 of Article 15-A of the Executive Law.

C. A complaint shall set forth the facts and circumstances giving rise to the complaint together with a demand for relief.

D. The party filing a complaint, whether the contractor or the STATE, shall deliver a copy to the other party. Both the complaint and the copy shall be delivered by either personal service or by certified mail, return receipt requested.

E. Upon receipt of a complaint, the Director shall provide the party against whom the complaint has been filed with an opportunity to respond to the complaint. If within thirty days of receipt of the complaint, the Director is unable to resolve the complaint to the satisfaction of the STATE and the contractor, the complaint shall be referred to the American Arbitration Association for resolution pursuant to section 316 of Article 15-A of the Executive Law and the applicable requirements of Article 75 of the Civil Practice Law and Rules.

F. Upon conclusion of the arbitration proceedings, the arbitrator will submit to the Director his or her award regarding the alleged violation of the contract or the refusal of the STATE to grant a waiver request by the contractor. The award of the arbitrator with respect to an alleged violation of the contract or the refusal of the state agency to grant a waiver shall be final and may be vacated or modified only as provided by Article 75 of the Civil Practice Law and Rules.

G. Upon conclusion of the arbitration proceedings and the rendition of an award, the arbitrator will also recommend to the Director a remedy, including, if appropriate, the imposition of sanctions, fines or penalties. The Director will either;

1. adopt the recommendation of the arbitrator;

2. determine that no sanctions, fines or penalties should be imposed; or

3. modify the recommendation of the arbitrator, provided that such modification shall not expand upon any sanction recommended or imposed by any new sanction, or increase the amount of any recommended fine or penalty.

H. The Director, within ten days of receipt of the arbitrator's award and recommendations, will file a determination of such matter and shall cause a copy of such determination to be served upon the parties by personal service or by certified mail, return receipt requested. The determination of the Director as to the imposition of any fines, sanctions, or penalties shall be reviewable pursuant to Article 78 of the Civil Practice Law and Rules.

I. The determination of the STATE or the contractor to proceed with a complaint shall not preclude the STATE, in its discretion, from pursuing any-other remedies which it may have pursuant to law and the contract.

IX. Subcontracts. The contractor will include the provisions of sub-paragraphs (V) and (VIII) above in every subcontract, as defined in sub-paragraph (II), in such a manner that such provisions will be binding upon the subcontractor as to work in connection with this contract.

NON-COLLUSIVE BIDDING CERTIFICATION REQUIRED BY SECTION 139-D OF THE STATE FINANCE LAW

SECTION 139-D, Statement of Non-Collusion in bids to the State:

BY SUBMISSION OF THIS BID, BIDDER AND EACH PERSON SIGNING ON BEHALF OF BIDDER CERTIFIES, AND IN THE CASE OF JOINT BID, EACH PARTY THERETO CERTIFIES AS TO ITS OWN ORGANIZATION, UNDER PENALTY OF PERJURY, THAT TO THE BEST OF HIS/HER KNOWLEDGE AND BELIEF:

[1] The prices of this bid have been arrived at independently, without collusion, consultation, communication, or agreement, for the purposes of restricting competition, as to any matter relating to such prices with any other Bidder or with any competitor;

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

A BID SHALL NOT BE CONSIDERED FOR AWARD NOR SHALL ANY AWARD BE MADE WHERE [1], [2], [3] ABOVE HAVE NOT BEEN COMPLIED WITH; PROVIDED HOWEVER, THAT IF IN ANY CASE THE BIDDER(S) CANNOT MAKE THE FOREGOING CERTIFICATION, THE BIDDER SHALL SO STATE BY AFFIXING A SIGNED STATEMENT WHICH SETS FORTH IN DETAIL THE REASONS THEREFORE.

Subscribed to under penalty of perjury under the laws of the State of New York, this _____ day of _____, 20____ as the act and deed of said corporation of partnership.

IF BIDDER(S) (ARE) A PARTNERSHIP, COMPLETE THE FOLLOWING*:

NAMES OF PARTNERS OR PRINCIPALS	**LEGAL RESIDENCE**
_____	_____
_____	_____
_____	_____
_____	_____

IF BIDDER(S) (ARE) A CORPORATION, COMPLETE THE FOLLOWING*:

NAME	**LEGAL RESIDENCE**
_____	_____
President	
_____	_____
Secretary	
_____	_____
Treasurer	

*Attach additional sheets as deemed necessary

Identifying Data

Potential Contractor _____

Address _____
Street

_____
City, Town, etc.

Telephone _____ Title _____

If applicable, Responsible Corporate Officer

Name _____ Title _____

Signature _____

Joint or combined bids by companies or firms must be certified on behalf of each participant.

_____ _____
Legal name of person, firm or corporation Legal name of person, firm or corporation

By _____ _____
Name Name

_____ _____
Title Title

Address _____ Address _____
Street Street

_____ _____
City State City State

NEW YORK STATE OF OPPORTUNITY. Parks, Recreation and Historic Preservation

Revised 2015

Select to Clear Form

New York State Office of Parks, Recreation and Historic Preservation
Bureau of Affirmative Action & Equal Opportunity
Albany, New York 12238
(518) 486.2636

GRANTS MWBE UTILIZATION PLAN

Section 1: Grant Project Information		
Grant Contract Number:	**MWBE Goals Assigned:** MBE 13% WBE 17%	**Grant Program: (Please check all that apply)** ☐ CFA ☐ EPF ☐ RTP ☐ OTHER _____
Description of Project:	**Total Dollar Value of Grant Award: $** **Total Cost/Value of Grant Project: $**	**Is this project part of a multi-phase Contract?** ☐ Yes ☐ No ☐ Select if this is the final phase of the project.
Amount of non-discretionary purchases associated with this grant project: $ (e.g. purchases made under NYS Contract, a city/county/municipal/village contract, operating expenses such as salary, forced account labor, rent, and acquisitions of land).		**If federal funds are being used for a portion of this grant project please indicate the amount:** $
Section 2: Grant Recipient Information		
Name of the Grant Recipient:	**Contact Person:**	**Telephone Number:**
Street Address:	**City, State, Zip Code:**	**E-Mail Address:**
Section 3: Prime Contractor (IF APPLICABLE)		
Name and Address of Prime Contractor: **FEIN:**	**Contact Person:** **Telephone Number:**	**E-Mail Address:** **Certified NYS MWBE?** ☐ Yes ☐ No **If yes:** ☐ MBE ☐ WBE
Total Cost/Value of this Contract: $		

Section 4, 5, 6 MUST be completed on page 2

APPROVALS				
FOR NYS OPRHP USE ONLY:				
Approved	Approved as Noted	Rejected	MBE: _____% MBE $ _____	WBE: _____% WBE $ _____
Notes:				
Authorized Signature:				Date

Section 4: Certified MWBE sub contractors/suppliers/vendors that the Grant Recipient intends to use

Certified MWBE Subcontractors / Suppliers Name, Address, Telephone Number and E-mail Address	MBE	WBE	Federal ID Number (FEIN)	Description of Subcontracting / Supplies	Total Contract Value of Subcontracting /Supplies
	☐	☐			
	☐	☐			
	☐	☐			
	☐	☐			
	☐	☐			
	☐	☐			

Section 5: Grant Recipient's Affirmation and Signature

Pursuant to Executive Law Article 15-A, as the grant recipient, I will engage in good faith efforts to achieve the MWBE goals on this contract. I understand that making false representations or including information evidencing a lack of good faith as part of, or in conjunction with, the submission of a Utilization Plan is prohibited by law and may result in penalties including, but not limited to, termination of a contract for cause, loss of eligibility to submit future bids, and/or withholding of payments. Firms that do not perform commercially useful functions may not be counted toward MWBE utilization. I understand that all listed subcontractors/suppliers will be contacted for verification of solicitation.

Authorized Signature of Grant Recipient:	Date:	Print Name and Title:

Section 6: Prime Contractor's Affirmation and Signature (IF APPLICABLE)

Pursuant to Executive Law Article 15-A, my firm will engage in good faith efforts to achieve the MWBE goals on this contract. I understand that making false representations or including information evidencing a lack of good faith as part of, or in conjunction with, the submission of a Utilization Plan is prohibited by law and may result in penalties including, but not limited to, termination of a contract for cause, loss of eligibility to submit future bids, and/or withholding of payments. Firms that do not perform commercially useful functions may not be counted toward MWBE utilization. I understand that all listed subcontractors/suppliers will be contacted for verification of solicitation.

Authorized Signature of Prime Contractor:	Date:	Print Name and Title:

Article 15A

EQUAL EMPLOYMENT OPPORTUNITY POLICY STATEMENT

It is the policy of the _____ (Legal Name of Your Organization) to provide equal employment opportunity to all people without regard to race, color, sex, religion, age, national origin, disability, sexual preference, or Vietnam Era Veteran status. As head of the organization, I am personally committed to assuring that our organization will act affirmatively to develop avenues of entry and mobility for minorities, women, individuals with disabilities, and Vietnam Era Veterans through the following activities:

- Development of programmatic approaches to the elimination of all unjust exclusionary employment practices, policies and consequences;
- Development of educational and training programs for all employees, with emphasis on our goals for upgrading minorities, women, individuals with disabilities and Vietnam Era Veterans;
- Development of personnel practices, policies and career ladders to assist and encourage upward mobility of employees restricted to lower levels;
- Development of mechanisms for swift and judicious resolution of complaints of discrimination consistent with our policy, and other applicable statutes; and
- Provision of reasonable accommodations to enable qualified individuals with disabilities to enjoy equal employment opportunities and equal terms, conditions and privileges of employment.

To effectuate this policy, we have designed a plan which conforms with all relevant Federal and State non-discrimination laws and regulations including but not limited to: The Civil Rights Act of 1964, as amended, the Rehabilitation Act of 1973, as amended, the Americans with Disabilities Act, the Vietnam Era Veteran's Readjustment Act of 1974, and the New York State Human Rights Law. The plan applies to all job classifications and titles in this organization's jurisdiction. It governs all our employment policies, practices and actions including, but not limited to: recruitment, hiring, discipline, rate of pay or other compensation, advancement, reclassification, reallocation, promotion, demotion, discharge and employee benefits. I will see that the Affirmative Action Office is provided with all available resources necessary for the execution of its program responsibilities. Moreover, all managers, supervisors, and employees must make consistently diligent efforts to implement this policy in day-to-day program and employment decisions. Affirmative Action considerations will be an integral part of all organizational activities performed in the furtherance of our mission and in meeting our responsibilities to the State's citizens.

Signature of Agency Head _____

Printed Name of Agency Head _____

New York State Office of Parks, Recreation and Historic Preservation

Contractor's Solicitation Log

Project No: _____ Region: _____ Date Submitted: _____ Page _____ of _____

Contractor/Firm Name & Address: _____ County: _____

_____ Contact Person: _____

_____ E-Mail: _____

_____ Telephone No: _____

	Firm Name Address, City, State, Zip Contact Person	Program	Telephone No Fax No E-Mail Address	Date of Contact Follow-up Date	Deadline Response Date	Method(s) of Contact	M / WBE Response Code	Bidder Action Code
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

M/WBE Response Codes:

11 - Submitted Written Quote
12 - Submitted Verbal Quote
13 - Negotiating With Prime
14 - Developing Quote
21 - Not Certified for Item(s)
22 - Location Unacceptable
23 - No Price Agreement
24 - No Time For Bid
25 - Schedule Unacceptable

Bidder Action Codes:

31 - Selected
32 - Unavailable
33 - No Longer in Business
34 - Undeliverable
35 - Unreachable
36 - Unresponsive
37 - Not Selected

Method of Contact:

41 - Mail
42 - E-Mail
43 - Phone
44 - FAX
45 - Face to Face

Program:

MBE
WBE
DBE
Other

New York State Office of Parks, Recreation and Historic Preservation
Bureau of Affirmative Action & Equal Opinportunity
Albany, New York 12238
(518) 486-2636

MWBE PAYMENT STATEMENT – GRANTS

INSTRUCTIONS: *As a condition of the contract awarded, this form is to be properly completed by the primary contractor and submitted with each payment application indicating ALL subcontractors and suppliers utilized on the project.*

Grant Contract Number:	MWBE Goals Assigned: MBE _____ % WBE _____ %	Name of Prime Contractor:
Name of Grant Recipient:	Total Dollar Value of Grant Award:	Contact Person:
Description of Project:	Total Cost/Value of this Contract:	Certified NYS MWBE: ☐ Yes ☐ No

Subcontractor / Supplier Name and Address	Designation (Check all that apply)	FEIN	Total Dollar Value of Contract	Payments This Report Period Only	Total Payments made to date
	☐ MBE ☐ WBE ☐ Supplier ☐ Sub				
	☐ MBE ☐ WBE ☐ Supplier ☐ Sub				
	☐ MBE ☐ WBE ☐ Supplier ☐ Sub				
	☐ MBE ☐ WBE ☐ Supplier ☐ Sub				
	☐ MBE ☐ WBE ☐ Supplier ☐ Sub				
	☐ MBE ☐ WBE ☐ Supplier ☐ Sub				

DECLARATION: Under penalty of perjury, I attest as follows: I certify that I am a representative of the above-stated Contractor and that I am authorized to make this DECLARATION on behalf of the Contractor. All information stated on this Payment Statement is true and correct. Payments stated on this form were made by the Contractor for work actually performed by the subcontractor(s) and/or supplier(s) listed, including MWBE. The Contractor has complied with all contract provisions and laws, including those related to use of MWBEs, equal opportunity and affirmative action.

Signature of Contractor:	Date:
Print Name and Title:	

FOR NYS OPRHP USE ONLY	DOLLAR VALUE	% OF TOTAL AWARD
Total value of contract for services and/or supplies assigned to MBE		
Total value of contract for services and/or supplies assigned to WBE		
Total overall dollar value and percentage of contract assigned to MWBE		

MWBE PAYMENT STATEMENT - GRANTS *Extension Pages* **Contract No. ______________**

Sub Contractors/ Suppliers Name & Address	Designation (Please check all that apply)	FEIN	Total Dollar Value of Contract	Payments This Reporting Period Only	Total Payments made to MWBE to Date
	☐ MBE ☐ WBE ☐ Supplier ☐ Sub	FEIN:			
	☐ MBE ☐ WBE ☐ Supplier ☐ Sub	FEIN:			
	☐ MBE ☐ WBE ☐ Supplier ☐ Sub	FEIN:			
	☐ MBE ☐ WBE ☐ Supplier ☐ Sub	FEIN:			
	☐ MBE ☐ WBE ☐ Supplier ☐ Sub	FEIN:			
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	☐ MBE ☐ WBE ☐ Supplier ☐ Sub	FEIN:			
	☐ MBE ☐ WBE ☐ Supplier ☐ Sub	FEIN:			

MONTHLY WORKFORCE EMPLOYMENT UTILIZATION REPORT - CONSTRUCTION

Agency: _____ Code: _____ Reporting Period: _____

Contractor Firm Name _____ Address: _____
Street City State Zip

Id/Payee Id. No. _____ Contract No. _____ Location of Work: _____
County Zip

Check One: ☐ Prime Contractor ☐ Subcontractor ☐ Grantee

Contract Amount _____ Contract Start Date _____ Percent of Job Completed _____

F-Foreman/Supervisor J-Journeyman A-Apprentice/Trainee		Total Hours Worked During Reporting Period														Total Number of Employees		Total Number of Minority Employees	
Job or Trade Category		Total Hours Worked All Employees		Black (Not of Hispanic Origin)		Hispanic		Asian Pacific Islander		Native American/ Alaskan Native		Minority		Female					
Field Office Staff: Professionals Office/Clerical		M	F	M	F	M	F	M	F	M	F	hr.	%	hr.	%	M	F	M	F
Laborers	F																		
	J																		
	A																		
Equipment Operators	F																		
	J																		
	A																		
Surveyors	F																		
	J																		
	A																		
Truck Drivers	F																		
	J																		
	A																		
Iron workers	F																		
	J																		
	A																		
Carpenters	F																		
	J																		
	A																		
Cement Masons	F																		
	J																		
	A																		
Painters	F																		
	J																		
	A																		
Electricians	F																		
	J																		
	A																		
Plumbers	F																		
	J																		
	A																		
Other:	F																		
	J																		
	A																		
Grand Totals																			

Company Official's Name _____ Title _____

Company Official's Signature _____ Date _____

Telephone Number _____

MONTHLY WORK FORCE EMPLOYMENT UTILIZATION REPORT - CONSTRUCTION
INSTRUCTIONS FOR COMPLETION

PURPOSE: The *Monthly Work Force Employment Utilization Report* is prepared by all construction contractors and subcontractors to document their actual employment of minority group members and women during the period covered by the report. The report has a format similar to forms used by the Federal Government (e.g. U.S. Department of Labor) for reporting equal employment opportunity data. The report covers all hourly workers, including foremen, supervisors or crew chiefs, journey workers and apprentices or trainees working on the project. Professional and office clerical field office staff working on the contract shall also be reported. The completed reports are used by the contracting state agency to monitor the contractor's and subcontractor's compliance with the contract's equal employment opportunity requirements.

GENERAL INFORMATION:

1. *Name of contracting state agency* and state agency code (five-digit code).
2. *Reporting period* covered by report (monthly/year).
3. *Contractor or subcontractor firm name* (prime contractor on summary report submitted to agency) and address (including city name, state and zip code).
4. Contractor or subcontractor *Federal Employer Identification number* or payee identification number (prime contractor I.D. on summary report); check to indicate prime or subcontractor report.
5. *Contract Amount* is dollar amount based on terms of the contract.
6. *Contract number* is the agency assigned number given to the contract (seven digits).
7. *Location of work* including county and zip code where work is performed.
8. *Contract start date* is month/day/year work on contract actually began.
9. Contractor's *estimate of the percentage of work completed* at the end of this reporting period.

JOB OR TRADE CATEGORIES: A field office staff category plus ten job categories are printed on the form. These are trades commonly use in construction. The categories are intended to be general in nature, and may include several occupational job titles. *If trades other than those identified are required to perform work on the contract,* this work should be combined and reported in the 'Other' category. Work level designations of foreman/supervisor (F), journeyworker (J), and apprentice/trainee (A) are included as separate entries for each standard job category; hours worked must be recorded opposite the appropriate work level for each.

TOTAL HOURS WORKED DURING REPORTING PERIOD: Report the total hours worked by all employees during the reporting period, regardless of ethnicity, under each job category in column (1) for males (M) and column (2) for females (F). In columns (3) thru (10) report the total hours worked by male and female *minority group members* of one of the following defined groups:

- *Black (not of Hispanic origin):* all persons having origins in any of the Black African racial groups;
- *Hispanic:* all persons of Mexican, Puerto Rican, Dominican, Cuban, Central or South American or either Indian or Hispanic origin, regardless of race;
- *Asian or Pacific Islander:* all persons having origins in any of the Far East countries, South East Asia, the Indian subcontinent or the Pacific Islands;
- *Native American or Alaskan Native:* all persons having origins in any of the original peoples of North American.

MINORITY % = sum of all employment of minority group members (M and F) in the job category divided by the total hours worked by all employees in that job category (column I ÷ column 2).

FEMALE % = total hours worked by all female employees in the job category (column 2) divided by the total hours worked by all employees in that job category (column I ÷ column 2).

TOTAL NUMBER OF EMPLOYEES: record the *total number of all persons employed* during the reporting period, regardless of ethnicity; report the numbers of male (M) and female (F) employees separately.

TOTAL NUMBER OF MINORITY EMPLOYEES: record the *total number of minority persons employed* during the reporting period; report the numbers of minority male (M) and minority female (F) employees separately.

GRAND TOTALS: column totals should be calculated for all job categories combined. Total minority and female percentages should be calculated as shown above, based on the column grand totals.

SUBMISSION: The monthly work force utilization report is to be completed by both prime and subcontractors and signed and dated by an *authorized representative* before submission. This Company Official's name, official title and telephone number should be printed or typed where indicated on the bottom of the form.

The *prime contractor* shall complete a report for its own force, collect reports completed by each subcontractor, and prepared a summary report for the entire combined contract work force. The reports shall include the total work hours for all employees in each work category for all payrolls completed in the monthly reporting period. The prime contractor shall submit the summary report to the contracting agency as required by *Part 542 of Title 9 Subtitle N of the NYCRR* pursuant to *Article 15-A of the Executive Law.*

NEW YORK STATE OF OPPORTUNITY. Parks, Recreation and Historic Preservation

New York State Office of Parks, Recreation and Historic Preservation
Bureau of Affirmative Action & Equal Opportunity
Albany, New York 12238
(518) 486.2636

Revised 2015

APPLICATION FOR WAIVER OF MWBE PARTICIPATION GOALS

Section 1: Grant Project Information	
Grant Contract Number:	**MWBE Goals Assigned:** MBE 13% WBE 17%
Description of Project:	**Total Dollar Value of Grant Award: $** **Total Cost/Value of Grant Project: $**
Grant Program: (Please check all that apply) ☐ **CFA** ☐ **EPF** ☐ **RTP** ☐ **OTHER** _____	**If federal funds are being used for a portion of this grant project please indicate the amount: $**

Section 2: Grant Recipient Information	
Name of the Grant Recipient:	**Contact Person:**
Street Address:	**Telephone Number:**
City, State, Zip Code:	**E-Mail Address:**

Section 3: Type of MWBE Waiver Requested

MBE Waiver	☐ Total	☐ Partial	Utilization Plan **must** be submitted along with this form to show proposed Goals.
WBE Waiver	☐ Total	☐ Partial	

Section 4: Supporting Documentation

Provide the following documentation as evidence of your good faith efforts to meet the M/WBE goals set forth in the contract and support of your waiver application: (Please check all that apply).

☐ **Attachment A.** Please attach a detailed letter as to why the waiver is being sought.

☐ **Attachment B.** List of the general circulation, trade and MWBE specific publications and dates of publications in which your firm solicited for certified MWBE participation as a subcontractor/supplier and copies of such solicitations.

☐ **Attachment C.** List of the certified MWBEs appearing in the Empire State Development M/WBE directory (www.esd.ny.gov) that were solicited for this contract. Provide proof of dates or copies of the solicitations and copies of the responses made by the certified MWBE. Describe specific reasons that responding certified MWBEs were not selected.

☐ **Attachment D.** Descriptions of the contract documents/plans/specifications made available to certified MWBEs by the contractor when soliciting their participation and steps taken to structure the scope of work for the purpose of subcontracting with or obtaining supplies from certified MWBEs.

☐ **Attachment E.** Description of the negotiations between the contractor and certified MWBEs for the purposes of complying with the MWBE goals of this contract.

☐ **Attachment F.** Identify dates of pre-bid, pre-award or other meetings attended by the contractor and scheduled by OPRHP with certified MWBEs whom OPRHP determined were capable of fulfilling the MWBE goals set in the contract.

☐ **Attachment G.** Other information deemed relevant to the request.

Section 4: Signature and Contact Information

DECLARATION: The undersigned certifies that she or he is authorized by the Contractor identified above to make this Declaration. The Contractor has made good faith efforts, as defined in NYS law, to meet the MWBE goals contained in NYS law and under the applicable contract. The undersigned acknowledges that failure to submit complete and accurate information in connection with a waiver request may result in denial and/or a finding of noncompliance. Failure to establish good faith efforts may result in suspension or termination of a New York State contract.

Prepared By : (Signature)	Date:
Name and Title of Preparer:	

Planting Fields Arboretum
Main Entry Drive:
Trees, Walks and Drive Repair

27 February 2023

Project Manual
Construction Bid Set
Project ID: PFF Entry 0306-2023
Contract No. PFF 030623
Bid Date: 15 March 2023

Client:

Long Island Capitol District
625 Belmont Avenue
West Babylon, NY 11704

Planting Fields Foundation
1395 Planting Fields Road
Oyster Bay, New York, 11771

Consultants:

Heritage Landscapes LLC
Preservation Landscape Architects and Planners
34 Wall Street Norwalk CT 06850
501 Lake Road Charlotte VT 05445
(203) 852 9966 | (802) 425 4330

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Planting Fields Arboretum
Entry Drive, Trees, Walks and Drive Repair

Table of Contents

Project Specifications

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SECTION 000107 – PROFESSIONAL SEALS AND CERTIFICATIONS

PROJECT

Name: Entry: Trees, Walks and Drive Repair
Location: Planting Field Arboretum and State Park
1395 Planting Fields Road
Oyster Bay, New York, 11771

PROFESSIONALS OF RECORD

The following design professionals have signed and sealed the original plans and specifications for this project/contract:

Landscape Architect:	Name of Firm	Heritage Landscapes LLC
	Address	501 Lake Road Charlotte VT 05445
	and	32-36 Wall Street, 2nd Floor, Norwalk CT 06850
	Founder, Partner	Patricia M. O'Donnell, PLA # 001438 -1 New York

Sign & Seal

24 February 2023
Date

END OF DOCUMENT 000107

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SECTION 01 1000 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Access to site.
4. Coordination with occupants.
5. Work restrictions.
6. Specification and drawing conventions.

1.3 PROJECT INFORMATION

A. Project Title

Planting Fields Arboretum, Main Entry Drive: Walks, and Drive Repair

B. Project Location:
Planting Fields Arboretum
1395 Planting Fields Road
Oyster Bay, NY 11771

C. Owner:
New York State Parks, Recreation and Historic Preservation
Long Island District
635 Belmont Ave.
West Babylon, NY 11702

D. Client/Owners Representative:
Planting Fields Foundation
1395 Planting Fields Road
Oyster Bay, NY 11771
Gina Wouters, President, CEO

E. Project Landscape Architect
Heritage Landscapes LLC,
Preservation Landscape Architects & Planners
34 Wall Street, Norwalk, CT 06850 &
501 Lake Road Charlotte, VT 05445

Contact: Peter Viteretto (viteretto@heritagelandscapes.com)
Phone: (203) 852-9966 / Vermont Office (802) 425-4330

1.4 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents for the restoration of the lower gardens, walks, arbors and tennis court landscape on this historic property. The work consists of and not limited to the following:

1. Installation of sedimentation and erosion control measures, construction area set up and general mobilization.
2. Removal of misc. site elements, bicycle rack, boulders, bollard, signage etc. as indicated on the contract documents. Reinstallation of selected signs.
3. Removal of selected pedestrian light fixtures and storage for reinstallation.
4. Removal of trees as indicated on the contract drawings, selective clearing and grubbing of areas to be fine graded and seeded.
5. Selective removals of asphalt drive to reduce overall travel lane width at the north end, the synoptic garden lay by area and the interaction of the drive and visitor/members parking area.
6. Removal of gravel paths including base material for installation of turf and lawn.
7. Removal and stockpiling of granite cobble stone curb associated with drive edge modifications. Reinstallation of stockpiled granite cobble for new edge of drive configuration
8. Removal and stockpiling of brick pavers at the synoptic garden entry terrace. Reinstallation of brick paving to meet the edge of new concrete walk paving at the synoptic garden terrace.
9. Reconstruction and patching of the asphalt drive to meet new drive edge alignment and repair areas, construction of the service drive asphalt apron.
10. Layout and survey work for concrete walks and final grading
11. Modest re-grading and construction of exposed aggregate concrete walk west of the main drive
12. Grading and construction of the east drive at the visitor parking lot including drop apron at the intersection with the ADA designated parking spaces
13. Construction of a river work stone retaining wall.

14. Electrical service extension for reinstallation of the stored light fixtures along the east walk, provision of and installation of new pedestrian light fixtures along the west walk south segment.

15. Coordination for delivery and unloading of the oak trees from Elhannon Nursery, Hoosick Falls NY. Storage and maintenance of oak tree on site prior to and during planting operations.

16. Installation of oak trees along the main drive, installation of the remaining spare oak trees on the grounds as located by the Landscape Architect.

17. Coordination of turf removal with the Planting Fields horticultural staff in areas to be reseeded with no-mow mix.

18. Fine grading and seeding of no-mow mix in designated areas, seeding of mown turf mix in areas disturbed by vegetation and not otherwise indicated to have no-mow turf mix.

19. Clean up and project Close-out

B. Type of Contract:
   1. Project will be constructed under a single prime contract.

1.5 ACCESS TO SITE

A. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.

B. Use of Site: Limit use of Project site to areas within the project scope work area as indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
   1. Limits: Confine construction operations to area indicated on drawings.
   2. Limits: Confine construction equipment and materials storage to the designated contractor staging area.

C. Condition of Existing Features and Buildings: Protect the existing features and buildings to remain from damage during construction activities. Repair any and all damage caused by construction operations to the satisfaction of the Landscape Architect.

1.6 COORDINATION WITH OCCUPANTS

A. Partial Owner Occupancy: Owner, their Tennant(s) and the Public, will occupy adjacent premises and have access to the Park Grounds during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate uses. Perform the Work to avoid interference with Owner/Tenant operations and public access. Control access to construction area. Do not block access to adjacent areas.

   1. Do not close or obstruct the drive, walkways, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.

1.7 WORK RESTRICTIONS

A. Work Restrictions, General: Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.

B. On-Site Work Hours: Limit work to working hours of 7 a.m. to 5 p.m., Monday through Friday, unless otherwise indicated.

1. Weekend Hours: Not permitted without express permission of the Owner
2. Hours for interruption of Main Drive Access to be coordinated with the Owner
3. Hours for Utility Shutdowns: Coordinate with Owner.

C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
1. Notify Owner not less than two days in advance of proposed utility interruptions.
2. Obtain Owner's written permission before proceeding with utility interruptions.
3. Maintain uninterrupted electrical service to the building to ensure fire alarm and sump-pump operation.

D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise, odors, or other possible disruptions to occupancy with Owner.

1. Notify Owner not less than two days in advance of proposed disruptive operations.
2. Obtain Owner's written permission before proceeding with disruptive operations.

E. Nonsmoking Building and Grounds: Smoking is not permitted within any building on the project site other than designated smoking areas. Smoking on the ground is not permitted.

F. Controlled Substances: Use of tobacco products and other controlled substances within the existing building or on the grounds is not permitted.

1.8 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mode and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:

1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
2. Abbreviations: Materials and products are identified by abbreviations as scheduled on Drawings and published as part of the U.S. National CAD Standard.
3. Keynoting: Materials and products are identified by notes referencing Specification Section numbers found in this Project Manual.

PART 2 - PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION 01 1000

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SECTION 01 3300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

B. Related Requirements:

1. Division 01 Section "Project Management and Coordination" for project management, meetings and close out.
2. Division 01 Section "Closeout Procedures" for submitting record Drawings, record Specifications, and record Product Data.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Landscape Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."

B. Informational Submittals: Written and graphic information and physical samples that do not require Landscape Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

C. File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.

D. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.4 ACTION SUBMITTALS

A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making

corrections or revisions to submittals noted by Landscape Architect and additional time for handling and reviewing submittals required by those corrections.

1. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 30 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.

1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

A. Landscape Architect's Digital Data Files: Electronic digital data files of the Contract Drawings will be provided by Landscape Architect for Contractor's use in preparing submittals.

1. Landscape Architect will furnish Contractor one set of digital data drawing files of the Contract Drawings for use in preparing Shop Drawings and Project record drawings.

    a. Landscape Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
    b. Digital Drawing Software Program: The Contract Drawings are available in AutoCAD 2018
    c. Contractor shall execute a data licensing agreement in the form of Agreement form acceptable to Owner and Landscape Architect.

B. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Landscape Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 10 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Landscape Architect will advise Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow 10 days for review of each resubmittal.

C. Paper Submittals: Place a permanent label or title block on each submittal item for identification.

1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. Include the following information for processing and recording action taken:

    a. Project name.
    b. Date.
    c. Name of Landscape Architect.
    d. Name of Contractor.
    e. Name of subcontractor.
    f. Name of supplier.
    g. Name of manufacturer.
    h. Submittal number or other unique identifier, including revision identifier.

i. Number and title of appropriate Specification Section.
j. Drawing number and detail references, as appropriate.
k. Other necessary identification.

3. Additional Paper Copies: Unless additional copies are required for final submittal, and unless Landscape Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.

4. Transmittal for Paper Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Landscape Architect will return without review submittals received from sources other than Contractor.

D. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Landscape Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.

E. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked with approval notation from Landscape Architect's action stamp.

F. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

G. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Landscape Architect's action stamp.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

1. Action Submittals: Submit three paper copies of each submittal unless otherwise indicated. Landscape Architect will return two copies.
2. Informational Submittals: Submit two paper copies of each submittal unless otherwise indicated. Landscape Architect will not return copies.

3. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

    a. Provide a digital signature with digital certificate on electronically submitted certificates and certifications where indicated.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

    a. Manufacturer's catalog cuts.
    b. Manufacturer's product specifications.
    c. Standard color charts.
    d. Statement of compliance with specified referenced standards.
    e. Testing by recognized testing agency.
    f. Application of testing agency labels and seals.
    g. Notation of coordination requirements.
    h. Availability and delivery time information.

4. For equipment, include the following in addition to the above, as applicable:

    a. Wiring diagrams showing factory-installed wiring.
    b. Printed performance curves.
    c. Operational range diagrams.
    d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

5. Submit Product Data before or concurrent with Samples.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data, unless submittal based on Landscape Architect's digital data drawing files is otherwise permitted.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

    a. Identification of products.
    b. Schedules.
    c. Compliance with specified standards.
    d. Notation of coordination requirements.
    e. Notation of dimensions established by field measurement.
    f. Relationship and attachment to adjoining construction clearly indicated.
    g. Seal and signature of professional engineer if specified.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 24 by 36 inches.
3. Submit Shop Drawings in the following format:
   a. Three (3) opaque (bond) and PDF Electronic File copies of each submittal. Landscape Architect will return two (2) copy (s).

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Attach label on unexposed side of Samples that includes the following:

   a. Generic description of Sample.
   b. Product name and name of manufacturer.
   c. Sample source.
   d. Number and title of applicable Specification Section.
   e. Specification paragraph number and generic name of each item.

3. 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.

4. 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.

   a. Number of Samples: Submit three (3) full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Landscape Architect will return submittal with options selected.

5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or 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.

   a. Number of Samples: Submit three (3) sets of Samples. Landscape Architect] will retain **two** (2) Sample sets; remainder will be returned.

      1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
      2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three (3) sets of paired units that show approximate limits of variations.

E. Coordination Drawing Submittals: Comply with requirements specified in Division 01 Section "Project Management and Coordination."

F. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section " Project Management and Coordination

G. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Division 01 Section "Quality Requirements."

H. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Division 01 Section "Closeout Procedures."

I. Maintenance Data: Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."

J. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of Landscape Architects and owners, and other information specified.

K. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

L. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

M. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

N. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

O. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

P. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

Q. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

R. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

1. Name of evaluation organization.
2. Date of evaluation.
3. Time period when report is in effect.
4. Product and manufacturers' names.
5. Description of product.
6. Test procedures and results.
7. Limitations of use.

S. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

T. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

U. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

V. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

2.2 DELEGATED-DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Landscape Architect.

B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file and three (3) paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Landscape Architect.

B. Project Closeout and Maintenance Material Submittals: See requirements in Division 01 Section "Closeout Procedures."

C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 LANDSCAPE ARCHITECT'S and OWNER ACTION

A. Action Submittals: Landscape Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Landscape Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.

B. Informational Submittals: Landscape Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Landscape Architect will forward each submittal to appropriate party.

C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Landscape Architect.

D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

E. Submittals not required by the Contract Documents may be returned by the Landscape Architect without action.

END OF SECTION 01 3300

SECTION 01 5000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes requirements for:
   1. Temporary utilities, support facilities, and security and protection facilities
   2. Sedimentation and Erosion Control

B. Related Requirements:
   1. Division 01 Section "Summary" for work scope
   2. Division 02 Section Soil Erosion and Sedimentation Control
   3. Division 32 Section "Asphalt Paving" for construction and maintenance of asphalt pavement for temporary roads and paved areas.
   4. Division 32 Section "Concrete Paving" for construction of cement concrete pavement for temporary roads and paved areas.

1.3 USE CHARGES

A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, testing agencies, and authorities having jurisdiction.

B. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

C. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.4 INFORMATIONAL SUBMITTALS

A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

B. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.

1.5 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.6 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Portable Chain-Link Fencing: Minimum 2-inch (50-mm), 0.148-inch- (3.8-mm-) thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high with galvanized-steel pipe posts; minimum 2-3/8-inch- (60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts, with 1-5/8-inch- (42-mm-) OD top and bottom rails. Provide concrete or galvanized-steel bases for supporting posts.

B. Porous Pavement Ground Protection Materials:
1. Marine grade ¾” thick plywood 4’x8’ sheets with 2” x 8” hardwood planks
2. Mirafi 140N non woven filter fabric or approved equivalent
3. Shredded hardwood bark

C. Protection Board:
1. Megadeck Ground Protection Matting
   a. 7.5’L x 14’Wx 4” ht”
2. Available at Signature Systems, Orlando Fl 972 684 5736
3. Or approved Equivalent

2.2 TEMPORARY FACILITIES

A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.

1. Field Office on site is at the discretion of the Contractor.
2. In lieu of a Field Office the Contactor may make arrangements with the Owner for regular project meetings to be housed in a nearby (walkable 5-10 Min) from the project site.
3.

B. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

1. Store combustible materials apart from building(s).

2.3 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

1. Locate facilities to limit site disturbance as specified in Division 01 Section "Summary."

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.

1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.

C. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

D. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.

1. Install electric power service overhead unless otherwise indicated.

3.3 SUPPORT FACILITIES INSTALLATION

A. Temporary Use of Permanent Roads, Paved Areas and Access Aprons: Existing roads and gravel service drives roads are to be protected from damage caused by equipment and machine

access. The contractor is responsible for protection and care during construction and planting operations.

B. Temporary Access: Protect existing soils to remain from compaction by equipment and machine operations for walk construction, road modifications and planting operations by use of protection board.

1. Coordinate the location and placement of protection board with final planting and walk locations so as not to impede the schedule or accessibility for completion of either work operation. Review locations of protection board access with the Landscape Architect for acceptance in advance of board placement.
2. Place protection board atop sub-soil only. Remove existing topsoil and subgrade in a location acceptable to the Landscape Architect on site for re-placement following removal of protection board and restoration of lawn areas.
3. De-compact subgrade once protection board has been removed in advance of placing topsoil and re-seeding, Secure Landscape Architect's approval on sub-soil decompaction in advance of topsoil placement and lawn establishment.

C. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

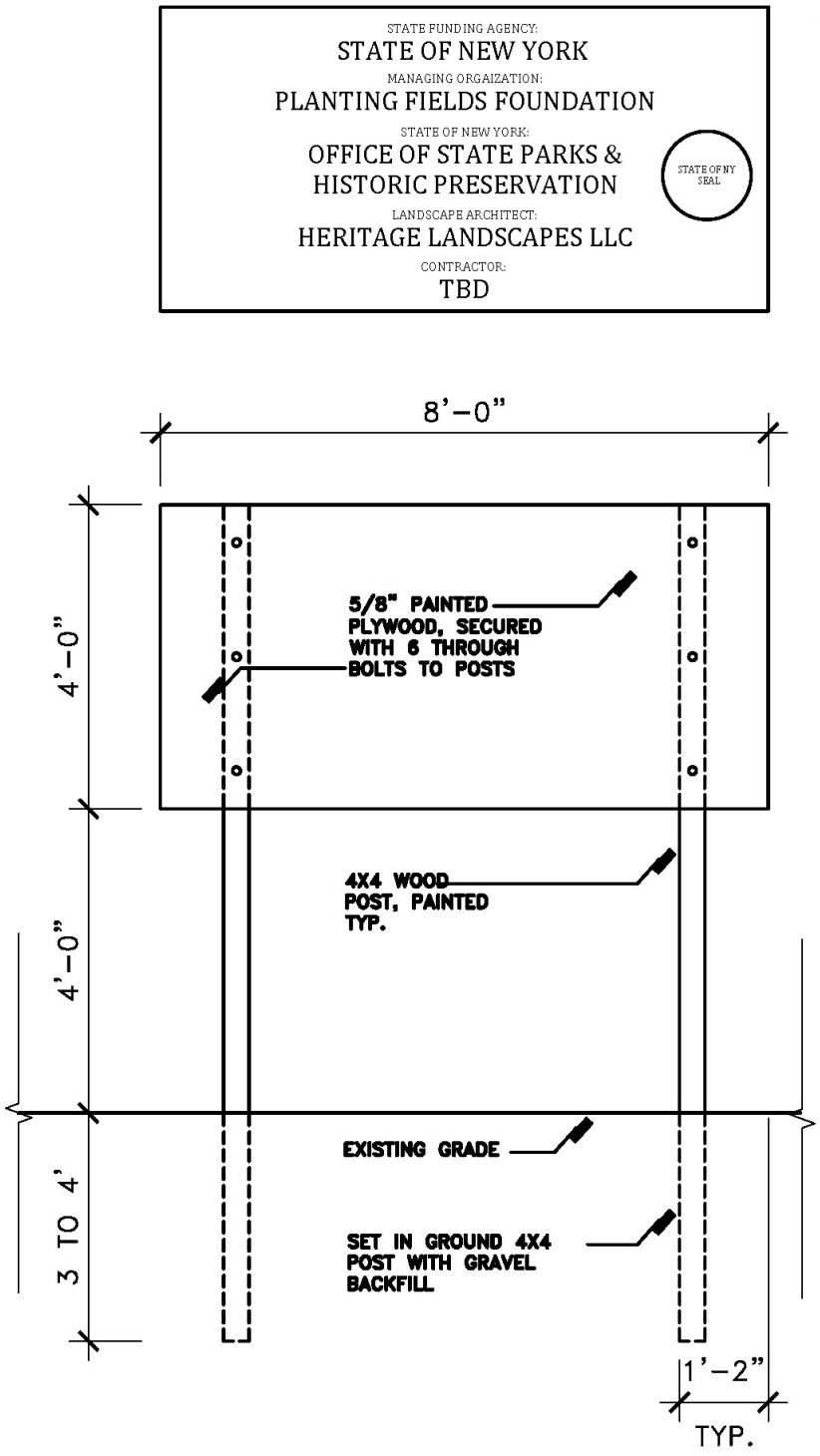
D. Parking: Parking areas for construction personnel.
1. Parking for Contractor, Sub-Contractors, Labors etc. is available in the membership lot within designated parking spaces as directed by the Owner.

E. Project Signs: Provide Project signs as required by the funding agency. Unauthorized signs are not permitted.

1. Identification Signs: Provide Project identification signs as indicated in this specification section. Locate project sign on site, review location with Landscape Architect for approval, modify as requested.

2. Signs must include the:
   a. Property Owner, NYS Office Recreation, Parks and Historic Preservation
   b. Client: Planting Fields Foundation
   c. Landscape Architect:
   d. A&E Project Team Members

3. Maintain and touchup signs so they are legible at all times.
   a. Sample sign as follows:



NOTES:

- SIGN TO BE PAINTED ON BOTH FRONT AND BACK.
- BACKGROUND AND LETTERING TO BE CONTRASTING COLORS. COLOR TO BE SELECTED BY OWNER'S REPRESENTATIVE.
- ABOVE GROUND PORTION OF POST TO BE PAINTED.
- LETTERING TO RANGE IN SIZE FROM LESS THAN 1 1/2 INCHES IN HEIGHT FOR SUPPORTING TEXT WITH 6 AND 4 INCH LETTERING FOR PRIMARY TEXT. STATE AND CITY SEALS (DIGITAL GRAPHIC) TO BE PROVIDED.
- CONTRACTOR TO SUBMIT GRAPHIC LAYOUT FOR REVIEW AND APPROVAL OF SIGN PRIOR TO SIGN FABRICATION
- SIGN LOCATION ON SITE TO BE APPROVED BY THE OWNER'S REPRESENTATIVE.

F. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Division 01 Section "Execution."

G. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

3.4 FACILITIES INSTALLATION

A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.

B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

1. Comply with work restrictions specified in Division 01 Section "Summary."

C. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to erosion- and sedimentation-control Drawings and requirements of 2003 EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.

1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree- or plant- protection zones.
2. Inspect, repair, and maintain erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
3. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from Project site during the course of Project.
4. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

D. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.

E. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

F. Construction area Enclosure Fence: Before construction operations begin, furnish and install pedestrian fencing to enclose the work area in a manner that will prevent people and from easily entering work area except designated entrance locations.

1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
   a. Review location and extent of pedestrian fencing with Landscape Architect for approval, modify as requested.
2. Maintain security by limiting number of accessible points.

G. Barricades and Warning Signs,: Comply with requirements of authorities having jurisdiction for erecting structurally adequate pedestrian barricades, including warning signs.

H. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.

3.5 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.

C. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
3. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures."

END OF SECTION 01 5000

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SECTION 01 7300 – EXECUTION LAYOUT AND GRADING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. Installation of the Work.
4. Cutting and patching

B. Related Requirements:
1. Division 01 Section "Submittal Procedures" for submitting surveys.
2. Division 01 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.
3. Division 02 Section "Selective Structure Demolition" for demolition and removal of selected portions of the building.

1.3 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.

B. Patching: Fitting and repair work required to restore construction to original condition after installation of other work.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For land Surveyor / Surveying Technician

1.5 QUALITY ASSURANCE

A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in the jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.

B. Surveying Technician Qualifications: A trained professional who has completed an accredited, Certified Survey Technician Program (CST), and that has completed a minimum of 3 years apprenticeship with a licensed land surveyor.

C. Construction Contractor Surveying Qualifications: Construction Contractors Surveying team shall be full time employees of the Construction Firm having a minimum of five years' experience in use of rotary laser and station pole for establishing existing grades, proposed grades and station point locations. Surveying staff shall remain on the project team as part of the construction crew.

D. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

1. Paving Elements: When cutting and patching paving elements, notify Landscape Architect of locations and details of cutting and await directions from Landscape Architect before proceeding. Support pavement edges during cutting and patching. Do not cut and patch pavements in a manner that could change their load-carrying capacity or increase deflection at the edge conditions or reduce the visual appearance and aesthetic qualities.

2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational elements include and are not limited to the following**:**
   a. Electrical service for pedestrian light fixtures
   b. Communication services
   c. Water service/supply lines
   d. Irrigation system

E. Cutting and Patching Conference: Incorporate issues of cutting and patching during the pre-construction site meeting with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION AND PREPARATION

A. Existing Conditions: The existence and location of underground and other utilities and construction are not available. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction affecting the Work.

1. Anticipated buried utilizes include: electrical supply line, communications line and water supply line.

2. Before construction, coordinate and pay for utility identification services in the project area, contact:
   a. Premier Private Locating, 1546 Locust Ave. Bohemia NY 11716 (631) 527 3138.
   b. Or approved equivalent

3. Irrigation supply lines and heads are located within the lawn and garden within the project area.

B. Examination and Acceptance of Conditions: Before proceeding with identify conditions that differ from the information provided and may affect the work with the Landscape Architect.
1. Provide a proposed resolution of conflicted areas to the Landscape Architect.

C. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Landscape Architect.

3.2 CONSTRUCTION LAYOUT, FIELD ENGINEERING AND GRADING

A. General: Execution of the layout and grading work shall be undertaken as an interactive process between the Contractor and the A&E Team to adjust walk alignment and determine finish grades on site to fit actual field conditions. The work includes:
1. Pedestrian Walks: stake walk layouts using information provided on the construction drawings, and review with Landscape Architect, adjusting fit field conditions. Walk segments shall meet ada compliance, Segments include:
   a. The west walk aligned to the main drive intersecting with the Synoptic Garden entrance plaza and ending at the Coe Hall circular drive
   b. The east walk between the Visitor Parking area and the south end of the west walk with crossing
2. Asphalt Drive Width Reduction: install offset staking to identify the reduced lane widths and areas of re-paving and review with Landscape Architect making modest adjustments as requested. Areas of focus include,
   a. Reduction of lane width at the north entrance by Planting Fields Road gate
   b. Removal of the drop off at the Synoptic Garden Entry terrace
   c. Reduction of lane width and reorganization of the vehicular drive to the members and visitor parking areas.

3. Pedestrian Walk Finish Grade: field survey to identify and document existing elevations for determination of final grades along the west and east pedestrian walks. on site field spot elevations for determination of final grade and surface drainage. The work includes.
   a. Establishment of temporary benchmarks for use on this project
   b. Documentation of spot elevations for use in directing and determining finish walk elevations.
   c. Documentation of spot elevations for use in determining the extent slope re-shaping for the west walk.
   d. Setting of grade stakes for layout and grading of pedestrian walks
   e. Setting of grade stakes for re-grading of sloped areas at the west walk

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, Review the layout information shown on Drawings, in relation to the main drive, curb, parking area, pavements etc. with respect to removals, asphalt repair, concrete walk constriction and tree planting. Identify potential survey and existing benchmarks and possible locations for new temporary project benchmarks. Discuss findings and overall layout approach with the Landscape Architect in advance of demolition and removal operations.

B. Contractor is to work with a land surveyor, surveying technician and or the Contractors designated Surveying staff to lay out the Work using accepted surveying practices.

1. Establish project specific benchmarks and control points to set lines and levels for use within the project areas of construction and elsewhere as needed to locate each element of Project.
2. Document grades and elevation using a engineering decimal unit of measure.
3. Establish dimensions within acceptable tolerance indicated. Do not scale Drawings to obtain required dimensions.
4. Inform installers of lines and levels to which they must comply.
5. Check the location, level and plumb, of every major element as the Work progresses.
6. Notify Landscape Architect when deviations from required lines and levels exceed allowable tolerances.
7. Maintain a record of final elevations for use in compiling as build documents.

C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and other elevations as required to compete the work.

D. Record Log: Maintain a log of layout control work and final finish elevations for use in compiling as-built documents.

3.4 FIELD ENGINEERING

A. Identification: Owner will identify existing benchmarks, control points, and property corners.

B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.

1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Landscape Architect before proceeding.
2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

C. Project Benchmarks: Establish and maintain a minimum of (3) three temporary project benchmarks on Project site, referenced to data established by survey control points.
1. Project benchmarks may be stakes or established points on existing fixed structure or that are within the project area and will not be disrupted by construction operations.
2. Record benchmark locations, with horizontal and vertical data, on Project Record Documents. Provide a copy to the Landscape Architect at the onset of the project work.
3. Provide Back-up benchmarks locations for reestablishing project benchmarks should they be disturbed or removed during construction operations.
4. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

3.5 INSTALLATION, LAYOUT AND GRADING

A. General: Locate the East and West walks on site using the contract documents, in correct alignment as indicated.

1. Layout using wood surveyor stakes along the proposed centerline at intervals of 25 foot on center for long straight walk sections and at 10 foot on center for tight curves and radii where.

2. Review on site with the Landscape Architect, adjusting as requested to actual field conditions and desired alignment.

B. Provide spot elevations along the center line of the East and West Walk for use in determining finish grades of each walk segment.
1. Provide spot elevations at staked locations including at least one elevation of existing grade to either side of the walk at an a distance as agreed to by the Contractor and Landscape Architect for determination of proper slope gradients and direction of surface drainage for positive flows away from the paved walk surface.
2. Provide additional spot elevations as requested along the East walk for determination and establishing the extent of slope grading required to meet existing grades.
3. Include spot elevations of abutting pavements, fixed surfaces, and intersecting curbs, walks or other elements that are affected by construction of the pedestrian walks.
4. Document existing elevations on layout plans as provided by the Landscape Architect and as conserved grading worksheets for determination of desired finish grades.

C. Determination of Finish Grades: Using the compiled spot elevations, work with the Landscape Architect in determination of finish grades for the East and West Walks to achieved ADA compliance and positive surface drainage. Anticipated annotated plans for grades:
1. West Walk
2. East Walk
3. Slope gradient along the East Walk

D. Offset Staking and Elevations: The Contactor shall provide offset staking for the East and West Walks which will remain in place during walk construction. Staking shall not be limited to the intervals set during the intimal layout and spot elevation operations, they shall also include locations of intersecting walks and areas where tighter tolerances are needed for walk construction both horizontally and vertically.
   1. When necessary two stakes may be used for walk alignment and finish grade.

E. Stakes shall be installed to ensure the best possible results and be maintained Substantial Completion unless approved for removal by the landscape architect in advance.
   1. Stakes damaged or dislodged during construction operations shall be promptly replaced.

F. Document final spot elevations for use in as-built drawing prior to removing stakes.

G. Upon acceptance, remove stakes entirely from the ground, cutting or pounding stakes flush with grade will not be acceptable.

3.6 CUTTING AND PATCHING

A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

   1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Temporary Support: Provide temporary support of work to be cut.

C. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.

E. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage pavements or other elements retained or adjoining construction.

   1. In general, use hand or small power tools designed for sawing and grinding, not hammering, and chopping. Undertake work neatly to minimum disturbance of adjacent surfaces.
   2. Finished Asphalt Surfaces: Saw Cut for clean edges without breakage or cracking where edges are to be backfilled with soil and lawn. For edges where new asphalt is to be installed or repaired undertake removal in a two-part process to provide a clean saw cut joint that can have asphaltic tack coat applied and new abutting pavement placed accordingly.
   3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.

4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
5.

F. Asphalt Patching: See Asphalt Paving Specifications Section 32 1216 for asphalt repair and replacement work.

G. Patching: Patch Miscellaneous site elements that may be affected by removals, construction and planting operation by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of repair work and refinishing.

H. Cleaning: Clean areas and materials where cutting and patching are performed

3.7 CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

END OF SECTION 01 7300

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SECTION 01 7700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Project Record Drawings.
2. Closeout Submittals.
3. Substantial Completion and Final Inspection.
4. Final Acceptance of the Work.
5. Warranties.

1.2 PROJECT RECORD DRAWINGS

A. Maintain one complete full-size set of contract drawings and one full-size set of vendor-supplied drawings. Clearly mark changes, deletions, and additions using drafting standards to show actual construction conditions. Show additions in RED, deletions in GREEN and special instructions in BLUE.

B. Keep record drawings current. Make record drawings available to the Landscape Architect for inspection at the time of monthly progress payment requests. If project record drawings are not current, the Landscape Architect may retain an appropriate amount of the progress payment in accordance with fixed-Price Construction Contracts.

C. On completion of the contract, submit complete record drawings. Include all shop drawings, sketches, and additional drawings that are to be included in the final set, with clear instructions showing the location of these drawings.

1.3 CLOSEOUT SUBMITTALS

A. Submit the following: The intent is to provide an overall summary of requirements and not a comprehensive list. The terms and conditions of the contract still require you to satisfy the requirements of the individual specification sections regardless of what is shown on the list. Submit the following before requesting final inspection:

1. Submit specific warranties, guarantees, workmanship bonds, final certifications, and similar documents.
2. Submit Project Record Documents, operation and maintenance manuals, final completion construction digital images recorded on CD-R or DVD-R with index and descriptions, and similar final record information.
3. Posted Operating Instructions: As specified in the individual sections. Furnish operating instructions attached to or posted adjacent to equipment. Include wiring diagrams, control diagrams, control sequence, start-up, adjustment, operation, lubrication, shut-down, safety

precautions, procedures in the event of equipment failure, and other items of instruction recommended by the manufacturer.

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

    a. Special Tools: One set of special tools required to operate, adjust, dismantle, or repair equipment. Special tools are those not normally found in possession of mechanics or maintenance personnel.

5. Keys and Keying Schedule: Submit all keys including duplicates. Wire all keys for each lock securely together. Tag and plainly mark with lock number, equipment identification, or panel or switch number, and indicate location, such as building and room name or number.
6. Terminate and remove temporary facilities from the site, along with mockups, construction tools, and similar elements.
7. Complete final cleaning requirements, including touchup painting.
8. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
9. Instruct Owner Designated personnel in operation, adjustment, and maintenance of products, equipment, and systems.

1.4 SUBSTANTIAL COMPLETION AND FINAL INSPECTION

A. When the work is substantially complete, request in writing a final inspection. Upon receipt of written request that work is substantially complete, the Landscape Architect will proceed with inspection within 10 days of receipt of request or will advise the Contractor of items that prevent the project from being designated as substantially complete.

B. If, following final inspection, the work is determined to be substantially complete, Landscape Architect will prepare a Punch List to be corrected before final acceptance and issue a Letter of Substantial Completion. Contractor shall complete the work described on the Punch List within 30 calendar days, as weather permits. If the Contractor fails to complete the work within this time frame, the Landscape Architect may either replace or correct the work with an appropriate reduction in the contract price or charge for re-inspection costs in accordance with the Inspection of Construction clause of the contract.

C. If, following final inspection, the work is not determined to be substantially complete; Landscape Architect will notify Contractor in writing. After completing work, Contractor shall request a new final inspection. All re-inspection costs may be charged against the Contractor in accordance with the Inspection of Construction clause of the contract.

1.5 FINAL ACCEPTANCE OF THE WORK

A. Prior to requesting inspection for verification of completion of all outstanding items:

B. After all deficiencies have been corrected, a Letter of Final Acceptance will be issued.

1.6 WARRANTIES

A. Submittal Time: Submit written warranties on request of Landscape Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (215-by-280-mm) paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

C. Provide additional copies of each warranty for inclusion in the operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

A. See Division 01 Specification Section “Execution” for information on cleaning agents.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for the entire project:

a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.

d. Remove tools, construction equipment, machinery, and surplus material from the project site.
e. Remove snow and ice to provide safe access to building.
f. Clean exposed exterior and hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
h. Remove labels that are not permanent.
i. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
j. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
k. Replace parts subject to unusual operating conditions.
l. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
m. Leave Project clean and ready for occupancy.

END OF SECTION 01 7700

SECTION 02 2700- SOIL EROSION AND SEDIMENT CONTROL

PART 1 GENERAL

1.01 SUMMARY

A. Work Included: The Contractor shall install and maintain all erosion and sediment control devices and measures in accordance with the State of New York Standards and Specifications for Erosion and Sediment Control, November 2016 or current edition.

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Said measures and control devices shall include but not be limited to:

1. Instituting and maintaining Soil Erosion and Sediment Control measures to prevent silt and fines from migrating from the area of construction;
2. Catch basin inlet sediment protection.

1.02 COMPLIANCE

A. The Contractor shall hold the Owner and Landscape Architect harmless as to any violations of Federal, State, County and Local environmental regulations or codes due to untimely or faulty installation or maintenance of soil erosion and sediment control measures.

1.03 REFERENCES

A. ASTM D 4355 - Test Method for Grab Breaking Load and Elongation of Geotextiles.

B. ASTM D 4491 - Test Method for Water Permeability of Geotextiles by Permittivity.

C. ASTM D 4533 - Test Method for Trapezoid Tearing Strength of Geotextiles.

D. ASTM D 4632 - Test Method for Grab Breaking Load and Elongation of Geotextiles.

E. ASTM D 4751 - Apparent Opening Size (U.S. sieve).

F. ASTM D 4833 - Test Method for Puncture Strength of Geotextiles.

1.04 SUBMITTALS

A. Submit under provisions of Submittals Section.

B. Submit product literature and specifications.

C. Submit samples of geotextiles.

D. Submit manufacturer's certificate that products meet or exceed specified requirements.

1.05 SEQUENCING AND SCHEDULING

A. Implement soil erosion and sediment control measures, prior to disturbance of pavement and soil, within the drainage basin of the construction site.

1. Trench excavation along roads may be divided into subdrainage basins for practical phasing of implementation.

B. Remove temporary soil erosion and sediment control measures, except permanent vegetation measures, upon completion of all restoration work.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Silt Fence:

1. Erosion Control Technologies, Inc., Branchburg, NJ, 800-437-6746; MISF 180.
2. Amoco Fabrics & Fibers Co., Atlanta, GA., 800-445-7732; No. 2130.
3. Webtec, Inc., Charlotte, NC., 800-438-0027; TerraTex SC.

B. Inlet Sediment Protection:

1. ACF Environmental, Inc., Richmond, VA., 800-644-9223; regular flow Siltsack; represented by Erosion Control Technologies.
2. Or equal.

C. Composite Filter Sock: Silt Sock

1. Filtrexx International/MKB Company
2. Or Approved Equivalent

2.02 MATERIALS

A. All materials used for Soil Erosion and Sediment Control shall be in accordance with the standards of the Westchester County Best Management Practices Manual for Erosion and Sediment Control.

B. Silt Fence:

1. Provide woven polypropylene geotextile with ASTM D 4751 apparent opening size range of 30 to 40 US sieve, ASTM D 4491 permittivity range of 10 to 15 gallons per minute per square foot, minimum ASTM D 4833 puncture strength of 60 pounds, minimum ASTM D 4533 trapezoid tear strength of 80 pounds, and minimum ASTM D 4632 grab breaking load and tensile elongation of 120 pounds and 15 percent, respectively.
2. Provide minimum 36-inch width.
3. Provide steel posts, minimum 0.75 lb./ft., minimum five (5) foot long, "T" shaped with studs.
4. Provide minimum steel clip fasteners, 5 clips per post.

C. Inlet Sediment Protection:

1. Provide Siltsack manufactured from a woven polypropylene and sewn by a double needle machine using a high strength nylon thread.
2. The siltack seams shall have a certified average wide strength per ASTM D 4884 of 165 lbs./in.
3. The Siltsack will be manufactured to fit the opening of the catch basin or drop inlet. The Siltsack will have the following features: two dump straps attached at the bottom to facilitate the emptying of the Siltsack; the Siltsack shall have lifting loops as an integral part of the system to be used to lift the Siltsack from the basin; the Siltsack shall have a restraint cord approximately halfway up the sack to keep the sides away from the catch basin walls, this yellow cord is also a visual means of indicating when the sack should be emptied. Once the strap is covered with sediment, the Siltsack should be emptied, cleaned and placed back into the basin.

4. The Siltsack geotextile fabric shall have the following properties:

Property	**Test Method**	**Test Result**
Grab Tensile	ASTM D-4632	300 lbs.
Grab Elongation	ASTM D-4632	20%
Puncture	ASTM D-4833	120 lbs.

Property	Test Method	Test Result
Mullen Burst	ASTM D-3786	800 P.S.I.
Trapezoid Tear	ASTM D-4533	120 lbs.
UV Resistance	ASTM D-4355	80%
Apparent Opening	ASTM D-4751	40 US Sieve
Flow Rate	ASTM D-4491	40 Gal/Min/Ft2.
Permittivity	ASTM D-4491	0.55 sec-1

C. Silt Sock:

1. Provide a prefilled compost filter sock comprised of mesh material and for perimeter sedimentation and erosion control.
2. Use a Multi-Filament Polypropylene (MFPP) 8 inch diameter filter sock with tensile strength MD: 670lbs, TD 423 lbs, (ASTM D4595) Green
3. Material: Filtrexx Silt Soxx

PART 3 EXECUTION

3.01 SILT FENCE INSTALLATION

A. Install silt fence in accordance with this Section and as shown on the Contract Drawings or as directed by the Owner. Silt fence construction shall be adequate to handle the stress due to sediment loading. Posts shall be installed at least 18 in. deep into the ground. When an 18 in. depth is impossible to achieve, the posts should be adequately secured to prevent overturning of the fence due to sediment loading.

B. Saw geotextile splice joints. Splice joints with a minimum overlap of 18 in. The bottom geotextile edge of the silt fence shall be buried to a minimum depth of 6 in. tangent under turn such that no water flow can pass beneath the silt fence.

C. Provide wire support fence, when needed with the wire buried a minimum of 2 in. and extending a maximum of 32 in. above the original ground surface.

D. The silt fence shall remain in place until the Owner directs that it be removed. The Contractor shall maintain the silt fence until it is removed, and shall remove and dispose of soil accumulations at the silt fence when so directed by the Owner.

E. It is the Contractor's responsibility to maintain the integrity of silt fences as long as necessary to contain sediment runoff. The Contractor shall inspect all silt fences immediately after each rainfall and at least daily during prolonged rainfall. Any deficiencies shall be immediately corrected by the contractor. In addition, the Contractor shall make a daily review of the location of silt fences or posts in areas where construction activities have changed the natural contour and drainage runoff to ensure that the silt fences are properly located for effectiveness. Where deficiencies exist, additional silt fences or posts shall be installed as directed by the Owner. The silt fence should be promptly repaired or replaced should it become damaged or otherwise ineffective.

F. Sediment deposits shall either be removed when the deposit reaches approximately one-half of the height of the silt fence or a second silt fence shall be installed as directed by the Owner. Silt fence that has been removed shall become the property of the Contractor. Upon removal of the silt fence, the Contractor shall remove and dispose of excess soil accumulations, restore the area and vegetate all bare areas in accordance with the Contract Documents.

3.02 INLET SEDIMENT PROTECTION

A. Install the inlet sediment protection Siltsack in accordance with this Section and as shown on the Contract Drawings.

B. To install the Siltsack in the catch basin, remove the grate and place the sack in the opening. Hold out approximately six inches of the sack outside the frame. This is the area of the lifting straps. Replace the grate to hold the sack in place.

C. The Siltsack is full and shall be emptied when the restraint cord is no longer visible.

D. To remove the Siltsack, take two pieces of 1" diameter rebar and place through the lifting loops on each side of the sack to facilitate the lifting of the Siltsack.

E. To empty the Siltsack, place it in a container, empty the contents and dispose of the accumulate soil. Place the rebar through the lift straps (connected to the bottom of the sack) and lift. This will turn the Siltsack inside out and empty the contents. Clean out and rinse. Return the Siltsack to its original shape and place back in the basin.

F. The Siltsack is reusable. Once completion of site construction, remove the Siltsack from the basin and clean. The Siltsack shall be stored out of the sunlight until reused.

G. Install the alternate inlet sediment protection in accordance with this Section as shown on the Contract Drawings.

H. Inlet protection to remain in place until directed by the Owner to be removed.

I. Inspect and maintain Inlet Protection.

J. Remove and dispose of soil accumulations when deposit reaches approximately one-half of height of aggregate mount and the expansion restraint in the Siltsack.

K. Removed barrier material shall become the property of the Contractor.

3.03 SILT SOCK PROTECTION

A. Install compost filled filter Sock as per manufactures instructions for sedimentation and erosion control.
   a. Install using 2 inch square hard wood stakes installed at 10 inches on center along the length of the filter sock installation
   b. To not butt ends, overlap filter sock lengths by 6 inch minimum.

B. Maintain filter sock in operational condition until substantial completion is accepted and turf is successfully germinated at 80 percent ground coverage.

C. Upon acceptance, remove the filter sock and stakes in their entirety and make necessary repairs to turf area.

3.03 GENERAL REQUIREMENTS

A. Institute and maintain Soil Erosion and Sediment Control measures to prevent silt and fines from migrating from the area of construction.

B. Install silt fencing, inlet sediment protection and check dams in the locations shown on the Contract Documents.

C. Clean and maintain silt fences, inlet protection and check dams after each and every rainfall.

D. Repair of any soil erosion and sediment control measured damaged during the lift of the project.

E. Stockpile topsoil.

F. Provide temporary vegetative cover and mulch within 48 hours of construction or disturbance.

G. Provide permanent vegetative cover, mulch and mulch netting on the disturbed areas.

H. Removal of soil erosion and sediment control measures (i.e. silt fence).

3.04 REMOVAL

A. Upon the establishment of permanent vegetative cover and landscaping, the Contractor shall carefully, without injury to new established growths of vegetation, remove all Soil Erosion and Sediment Control structures, measures and devices. This shall mean to also include all silt and mulch netting.

END OF SECTION 02 2700

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SECTION 02 4119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Asphalt Pavement
2. Concrete Pavement
3. Cobble Stone Curb
4. Brick Paving
5. Gravel Walk & Timber
6. Bollards
7. Bicycle Rack
8. Chain Link Fencing
9. Dismantle and Stockpile stone from the stone wall
10. Salvage of existing items to be reused
    a. Pedestrian Light fixtures for re-installation
    b. Sign Board
    c. Directional sign panels

B. Related Requirements:
1. Division 31 Section 31 1000 "Site Clearing" for site clearing and removal of above- and below-grade vegetation and utilities.

1.3 DEFINITIONS

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

B. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner.

C. Remove and Reinstall: Detach items from existing construction in a manner to prevent damage, prepare for reuse, and reinstall where indicated.

D. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 MATERIALS OWNERSHIP

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

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

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

1.5 PREINSTALLATION MEETINGS

A. Predemolition Conference: Conduct conference at Project site.

1. Inspect and discuss condition of construction to be selectively demolished.
2. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
3. Review areas where existing construction is to remain and requires protection.

1.6 INFORMATIONAL SUBMITTALS

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

1. Submit Proposed Protection Measure Plans for review and approval prior to commencement of removal operations. Make modifications as requested by Owner and Landscape Architect. Plan to address the following
   a. Pedestrian access to Owner’s buildings during construction.
   b. Pedestrian and vehicular access to the public display gardens and open public spaces adjacent to the areas under construction.
      1) Access to the parking lot must remain open at all times.
   c. Construction vehicle access to site during construction operations

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

1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity.

C. Inventory: Submit a list of items to be removed and salvaged and deliver to Owner prior to start of demolition.

1.7 CLOSEOUT SUBMITTALS

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

1.8 FIELD CONDITIONS

A. Owner will occupy the building on the grounds. Conduct selective demolition so Owner's operations will not be disrupted.
   1. The park is open to the public during every day from 9:00 to 5:00 PM with Special Events and Programs scheduled throughout the year.
      a. Schedule operations disruptive to the main drive access at time that do not conflict with special events or scheduled programs.
   2. The site is open to staff and tenants 24 hours a day.
      a. Maintain vehicular access at all time.

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

C. Notify Landscape Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

   1. Hazardous materials will be removed by Owner before start of the Work.
   2. If suspected hazardous materials are encountered, do not disturb; immediately notify Landscape Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

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

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

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

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

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

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

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

B. Review record documents of existing construction provided by Owner. The Owner does not guarantee that existing conditions are same as those indicated in record documents.

C. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Landscape Architect.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

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

1. Comply with requirements for existing services/systems interruptions specified in Division 01 Section "Summary."

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

1. Arrange to shut off indicated utilities with utility companies. Notify Owner 10 days in advance of pending utility shut-off.
   a. Obtain acceptance of utility shut-off from Owner prior to utility interruption.
2. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.

3.3 PREPARATION

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

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

1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied areas of the garden and grounds.

2. Provide a pedestrian access plan for approval in advance of demolition operations. The plan shall indicate means and methods for protection of pedestrians during each anticipated phase of construction.

3.4 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

B. Work in Historic Areas: Selective demolition may be performed only in areas of the Project that are not designated as historic. In historic spaces, areas or adjacent to historic surfaces, the terms "demolish" or "remove" shall mean historic "removal" or "dismantling". Review means and methods for work with Landscape Architect.
   1. Provide protection measures for historic surfaces, structures.

C. Removed and Salvaged Items
   1. Clean savaged items of loose surface debris and organic matter
   2. Store items in a secure area until Re-installation
   3. Store on-on site at a location determined by the Owner.
   4. Protect items from damage during transport and storage.

D. Removed and Reinstalled Items:

   1. Clean and repair materials to functional condition adequate for intended reuse.
      a. Remove organic material using water, mild soap and hard bristled brushes.
      b. Remove mortar by mechanical means using methods that do not alter the character or appearance of the natural stone for stone walls, cobble stone or brick pavers.
   2. Stockpile on wooden pallets or plywood sheets to protect from ground surface contamination, excess moisture and organic debris or deleterious materials.
   3. Protect items from damage during transport and storage.
   4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
   5. Relocate remaining stockpiled materials on site in a location as directed by Owner.

E. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Landscape Architect, items may be removed to a suitable, protected storage location during selective demolition, cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Compacted Gravel: Remove compacted gravel for construction of new sidewalks, planting beds and turf.
   1. Remove gravel to full depth and de-compact the subgrade prior to placing of planting soils.

B. Asphalt: Demolish in sections. Saw cut to full depth at junctures with construction to remain and at regular intervals using power-driven saw, then remove asphalt between saw cuts.
   1. Remove base material to full depth to allow for soil fills and turf/lawn establishment.

C. Masonry Cobble Stone: Demolish in small sections. Remove to full stone units at joint with construction to remain, using power-driven saw.

1. Remove setting mortar in its entirety.

D. Brick Pavers: Remove brick pavers by hand, salvage and clean the necessary amount of paver needed for reconstruction of the brick paver walk.
   1. Stockpile remaining pavers on wooden pallets and store on site at a location as directed by the Owner.

E. Stone for Stone Wall: Dismantle the stone retaining wall by hand without use of backhoe or bucket that would mare or damage the stone.
   1. Clean and stockpile stone on site for reuse.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.

   1. Do not allow demolished materials to accumulate on-site.
   2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.7 CLEANING

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

3.8 SELECTIVE DEMOLITION SCHEDULE

A. Existing Items to Be Removed and Reinstalled:
   1. Pedestrian Light Fixtures and concrete footings
   2. Informational Sign Board

B. Existing Items to Be Removed/salvaged Partial Reinstalled and Stockpiled on site:
   1. Stone from stone retaining wall
   2. Cobble Stone Curb
   3. Brick Paving

C. Existing Items to Be Removed Stored on site:
   1. Bollards
   2. Bicycle Rack
   3. Path Boulders

D. Existing Items to Be Removed and disposed of:
   1. Asphalt Pavement
   2. Gravel Walk & Timber
   3. Chain Link Fencing

END OF SECTION 02 4119

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SECTION 03 3000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 Summary:

A. This Section Includes the Following.
1. Materials and Quality Control for the use of Cast-In-Place Concrete
2. Placement of forms and finishes for Cast-In-Place Concrete
3. Cast-In-Place Concrete for and not limited to the following.
a. Setting Granite Cobble Curbing
b. Stabilizing Stone Wall

1.01 RELATED WORK SPECIFIED ELSEWHERE:

A. Related Sections Include:
1. 32 1313 Exposed Aggregate Cement Paving
2. 31 2000 Earth Moving
3. 32 1373 Joint Sealants

1.02 QUALITY ASSURANCE:

A. Codes and Standards: Comply with provisions of following Codes, Specifications and standards, except where more stringent requirements are shown or specified:

1. American Concrete Institute, ACI, "Specifications for Structural Concrete for Buildings" (ACI 301 - latest revision).

2. Concrete Reinforcing Steel Institute, CRSI, "Manual of Standard Practice" latest edition.

B. Concrete Testing Service: Employ at contractor's expense a testing laboratory to perform materials evaluation test and to design concrete mixes.

C. Owner: Employ separate testing laboratory to evaluate concrete delivered to and placed at site.

D. Certificates: Signed by concrete producer and Contractor, may be submitted in lieu of material testing when acceptable to Landscape Architect.

1.03 SUBMITTALS:

A. Manufacturer's Data: Submit manufacturer's product data with installation instructions for proprietary materials including reinforcement and forming accessories, admixtures, joint materials, hardeners, curing materials and others as requested by Landscape Architect.

B. Laboratory Reports: Submit 2 copies of laboratory test or evaluation reports for concrete materials and mix designs.

PART 2 - PRODUCTS

2.01 FORM MATERIALS:

A. Provide form materials with sufficient stability to withstand pressure of placed concrete without bow or deflection.

2.02 REINFORCING MATERIALS:

A. Reinforcing Bars: ASTM A615, Grade 60, deformed, epoxy coated.

B. Welded wire fabric (WWF): ASTM A185, welded steel wire fabric, epoxy coated.

2.03 CONCRETE MATERIALS:

A. Portland Cement: ASTM C 150, Type 1 use one brand of cement throughout project.

B. Normal weight aggregates: ASTM C33, Provide aggregates from a single source for exposed concrete.

C. Water: Potable.

D. Air Entraining Admixture: ASTM C260.

E. Water reducing Admixture: ASTM C494, Type A. and not contain more chloride ions than are present in municipal drinking water.

2.04 RELATED MATERIALS:

A. Membrane-Forming Curing Compound: ASTM C 309, Type 1.

2.05 PROPORTIONING AND DESIGN OF MIXES:

A. Prepare design mixes for each type and strength of concrete in accordance with ACI 301 Section 3.9 "Proportioning on the Basis of Previous Field Experience or Trial Mixtures", Chapter 3 as indicated on drawings.

B. Mix designs may be adjusted when material characteristics, job conditions, weather, test results or other circumstances warrant. Do not use revised concrete mixes until submitted to and accepted by Landscape Architect.

C. Use air entraining admixture in all concrete, providing not less than 4% nor more than 8% entrained air for concrete exposed to freezing and thawing, and from 2% to 4% for other concrete.

D. Do not use admixtures containing calcium chloride.

2.06 CONCRETE MIXING:

A. Ready mix concrete shall be in accordance with ASTM C94.

B. For Job-site mixing use drum type batch machine mixture, mixing not less than 1-1/2 minutes for one cu. yd. or smaller capacity. Increase mixing time at least 15 seconds for each additional cu. yd. or fraction thereof.

PART 3 - EXECUTION

3.01 FORMWORK:

A. Construct formwork complying with ACI 347 "Recommended Practice for Concrete Formwork", so that concrete members and structures are of correct size, shape, alignment, elevation and position.

B. Provide openings in formwork to accommodate work of other trades. Accurately place and securely support items built into forms.

C. Clean and adjust forms prior to concrete placement. Apply form release agents or wet forms, as required, re-tighten forms during concrete placement if required to eliminate leaks.

3.02 PLACING REINFORCEMENT:

A. Comply with CRSI, recommended practice for "Placing Reinforcing Bars".

B. Position, support and secure reinforcement against displacement. Locate and support with metal chairs, runners, bolsters, spacers and hangers, as required. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.

C. Install welded wire fabric in as long lengths as practical, lapping at least one mesh.

3.03 JOINTS:

A. Provide construction, isolation, and control joints as indicated or required. Locate construction joints so as to not impair strength and appearance of structure. Place isolation and control joints in slabs- on-ground to stabilize differential settlement and random cracking.

3.04 INSTALLATION OF EMBEDDED ITEMS:

A. Set and build into work, anchorage devices and other embedded items required for other work that is attached to, or supported by, cast-in- place concrete. Use setting diagrams, templates and instructions provided by others for locations and setting.

3.05 CONCRETE PLACEMENT:

A. Comply with ACI 304, placing concrete in a continuous operation within planned joints or sections. Do not begin placement until work of other trades affecting concrete is completed.

B. Consolidate placed concrete using mechanical vibrating equipment with hand rodding and tamping, so that concrete is worked around reinforcement and other embedded items and into forms.

C. Protect concrete from physical damage or reduced strength due to weather extremes during mixing, placement and curing.

In cold weather comply with ACI 318-83

In hot weather comply with ACI 318-83

3.07 CONCRETE CURING AND PROTECTION:

A. Begin initial curing as soon as free water has disappeared from exposed surfaces. Where possible, keep continuously moist for not less than 72 hours. Continue curing by use of moisture-retaining cover or membrane-forming curing compound. Cure formed surfaces by moist curing until forms are removed. Provide protection as required to prevent damage to exposed concrete surfaces.

3.08 SHORE AND SUPPORTS:

A. For shoring and reshoring comply with ACI 347 "Recommended Practice of Concrete Formwork".

B. Keep reshores in place until concrete has attained its required 28 day strength and heavy loads due to construction operations have been removed.

3.09 QUALITY CONTROL:

A. Owner's testing laboratory will perform sampling and testing during concrete placement, which may include the following, as directed by Engineer. This testing does not relieve Contractor of responsibility of providing concrete in compliance with specifications. Contractor may perform additional testing as necessary, at no expense to Owner, to ensure quality of concrete.

1. Sampling: ASTM C 172.

2. Slump: ASTM C 143, one for each set of compressive strength specimens.

3. Air content: ASTM C 173, one for each set of compressive strength specimens.

4. Compressive strength: ASTM C 39, one set for each 50 cu. yds, or fraction thereof of each class of concrete; 1 specimen tested at 7 days, 2 specimens tested

at 28 days, and one retained for later testing if required.

When the total quantity of given class of concrete is less than 50 cu. yds., strength tests may be waived by Engineer if field experience indicates evidence of satisfactory strength.

B. Test results will be reported in writing to Landscape Architect, Contractor, and concrete producer on same day tests are made.

END OF SECTION 03 3000

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SECTION 04 4313 - STONE MASONRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Stone masonry set with concrete
    a. Cobble Stone Curb
    b. River Worn Stone Retaining Wall

B. Related Requirements:
1. Division 02 Section 02 4119 Selective Demolition
2. Division 03 Section 03 3000 Cast-in-Place Concrete

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.3 SYSTEM PERFORMANCE REQUIREMENTS

A. General: Stone work to match-in-kind existing stone masonry work. Matching requires that the additional stone to be of the same composition and color as the existing natural Stone. Mortar to be composed of the same materials as the existing mortar and construction methodology and finished appearance to be the same as that of the historic stone masonry work.
1. Clean disassembled stone for reuse as outline in Selective Demolition.

B. Contractor to arrange to have existing stone mortar tested for composition and provide mixed to the Landscape Architect of comparison to the original mix composition. Testing shall be arranged and paid for by the Contractor.

1.4 ACTION SUBMITTALS

A. Product Data: For each variety of stone, stone accessory, and manufactured products as required.

B. Samples for Initial Selection: For colored mortar and other items involving color selection.

C. Samples for Verification:

1. Sone retaining wall: type in sets of for each color, grade, finish type and variety of stone required, consisting of full-size stones not less than 12 inches in the shortest dimension, include four (4) or more stones in each set of samples showing the full range of variation

in appearance characteristics to be expended in completed work, Stone to match –in-kind, size and color the existing historic stone.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For the firm and persons specified in "Quality Assurance" that demonstrate their capabilities and experience with this type of stone masonry reconstruction. Include list of completed projects with project names, addresses of Owner, and other information that is useful in determining qualification for this work.

B. List of Materials Used in Constructing Mockups: List generic product names together with manufacturers, manufacturers' product names, supply sources, and other information as required to identify materials used. Include mix proportions for mortar and source of aggregates.

1. Neither receipt of list nor approval of mockups constitutes approval of deviations from the Contract Documents contained in mockups unless Landscape Architect approves such deviations in writing.

1.6 QUALITY ASSURANCE

A. Retain all existing original stone materials. Any stone that is damaged or deteriorated with visible cracks or structural faults will not be used and will be replaced to match.

B. Installer Qualifications: A qualified installer who employs experienced stonemasons and stone fitters. Mason Contractor to have been in practice for not less than seven (7) consecutive years, having experience in project work of similar construction methods and commercial projects in public landscapes which has resulted in construction with a record of successful in-service performance.
1. Mason Contractor to provide three (3) client references

C. Mockups: Build mockup to demonstrate aesthetic effects and to set quality standards for materials and execution.

1. Build mockups for stone retaining wall veneer wall 60 inches long by height and width to match existing to remain.
2. Build mock-up as part of the existing wall structure.
3. Review Mock-up with the Landscape Architect and make revisions as directed.
4. When approved by the Landscape Architect, Mock-up may become part of the finished work.

F. Single-Source Responsibility for Mortar Materials: Obtain mortar ingredients for each application of a uniform quality, including color for exposed masonry, from one manufacturer for each mortar component and from one source or producer for each aggregate.
1. Test mortar properties per test methods of ASTM C 270. Compressive strength (psi) of set mortar to be lower than compressive strength (psi) of each stone.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

B. Store aggregates where grading and other required characteristics can be maintained, and contamination avoided.

C. Deliver preblended, dry mortar mix in moisture-resistant containers designed for use with dispensing silos. Store preblended, dry mortar mix in delivery containers on elevated platforms, under cover, in a dry location, or in covered weatherproof dispensing silos.

1.8 FIELD CONDITIONS

A. Protection of Stone Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed stone masonry when construction is not in progress.

1. Extend cover a minimum of 24 inches down both sides and hold cover securely in place.

B. Stain Prevention: Immediately remove mortar and soil to prevent them from staining stone masonry face.

1. Protect base of walls from rain-splashed mud and mortar splatter using coverings spread on the ground and over the wall surface.
2. Turn scaffold boards near the wall on edge at end of each day to prevent rain from splashing mortar and dirt on completed stone masonry.

C. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace stone masonry damaged by frost or freezing conditions. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and above and will remain so until masonry has dried, but not less than seven days after completing cleaning.

D. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

1.9 COORDINATION

A. Advise installers of other work about specific requirements for placement of flashing and similar items to be built into stone masonry.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Stone for Stone Retaining Wall. Provide additional stone to match as required to complete the work contained in the contract documents. Additional Stone to be blended in walls as acceptable to the Landscape Architect.

B. Make additional stone materials available for inspection by the Landscape Architect. The Landscape Architect reserves the right to reject for use any stone which doesn't' match in character, color size and form of the historic stone.

C. Source Limitations for Stone: Obtain stone from single quarry with resources to provide materials of consistent quality in appearance and physical properties.

D. Source Limitations for Mortar Materials: Obtain mortar ingredients of uniform quality for each cementitious component from single manufacturer and each aggregate from single source or producer.

2.2 STONE FOR RETAINING WALL AND COBBLE CURB

A. General:

1. Re-use existing historic stone for each type of construction. Provide additional stone required to complete construction specified in Quality Assurance section.
    a. Use existing wall stone to the extent possible. Provide additional stone to match as required to complete the work contained in the contract documents. Additional Stone to be blended in walls as acceptable to the Landscape Architect.

2. Re-use removed and salvaged cobble stone curbing from drive width reduction operations.

3. Clean stone and stone curbing of old, mortar, staining and biological growth.

4. Pressure wash with potable water and cleaners as specified with low pressure power wash for preliminary cleaning.

5. If biological growth, staining, or mortar remains, Scrub by hand with natural bristle brushes and detergent cleaners. Repeat and rinse until satisfactory removal is achieved.

6. Remove any remaining mortar by mechanical means without damage to exposed faces of stone and stone cubing.

2.3 MORTAR MATERIALS

A. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.

B. Sand for mortar mix
   1. Royal Blend
   2. Equivalent as determined by mortar testing and approval of Landscape Architect

C. Hydrated Lime: ASTM C 207, Type S.

D. Portland Cement-Lime Mix: Packaged blend of Portland cement complying with ASTM C 150, Type I or III, and hydrated lime complying with ASTM C 207.

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

      a. Lehigh Cement Company; Lehigh Custom Color Portland/Lime Cement.
      b. Or approved Equivalent

E. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes. Use only pigments with a record of satisfactory performance in stone masonry mortar.

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

      a. Davis Colors; True Tone Mortar Colors.
      b. Or approved Equivalent

F. Colored Cement Product: Packaged blend made from portland cement and lime and mortar pigments, all complying with specified requirements, and containing no other ingredients.

   1. Formulate blend as required to produce color indicated or, if not indicated, as selected from manufacturer's standard colors.
   2. Pigments shall not exceed 10 percent of portland cement by weight.
   3. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

      a. Colored Portland Cement-Lime Mix:
         1) Lehigh Cement Company; Lehigh Custom Color Portland/Lime Cement.
         2) or approved equivalent.

G. Aggregate: ASTM C 144 and as follows:

   1. For pointing mortar, use aggregate graded with 100 percent passing No. 16 sieve.

H. Cold-Weather Admixture: Nonchloride, noncorrosive, accelerating admixture complying with ASTM C 494/C 494M, Type C, and recommended by manufacturer for use in masonry mortar of composition indicated.

   1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
      a. Grace Construction Products, a unit of W. R. Grace & Co. - Conn.; Morset.
      b. or approved equivalent.

I. Water: Potable.

2.4 MASONRY CLEANERS

A. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar and grout stains, efflorescence, and other new construction stains from stone masonry surfaces without discoloring or damaging masonry surfaces; expressly approved for intended use by cleaner manufacturer and stone producer.

1. Manufacturers: Subject to compliance with requirements, products by one of the following:
   a. Prosoco, Inc.
   b. Or approved Equivalent

2.5 MORTAR MIXES

A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.

B. General: Comply with referenced standards and with manufactures written instruction for mix proportions, mixing equipment mixer speeds, mixing containers, mix time and procedures needed to produce mortar of uniform quality with optimum performance characteristics and as required to match historic mortar as determined by mortar testing.
1. Contractor will use mortar as determined to match existing cobble stone curbing and as sample as approved by the Landscape Architect.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces indicated to receive stone masonry, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of stone masonry.

B. Refer to grading plan worksheets as approved by the Landscape Architect for finish stone masonry elevations.

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

3.2 PREPARATION

A. Clean dirty or stained stone surfaces by removing soil, stains, and foreign materials before setting. Clean stone by thoroughly scrubbing with fiber brushes and then drenching with clear water. Use only mild cleaning compounds that contain no caustic or harsh materials or abrasives.

3.3 SETTING STONE MASONRY

A. General: Reconstructed stone items are to utilize the original stone in its historic arrangement. The Contractor is to match the existing wall construction, make a determination as to how and reset the stone in its arrangement.

B. Sort stone before it is placed to reconstruct the stone assembly in their arrangement and joint alignments in wall to remove stone that does not comply with requirements relating to aesthetic effects, physical properties, or fabrication, or that is otherwise unsuitable for intended use.

C. Use stone in its original size and from, without splitting or use of small chinkers.

D. Set stone to comply with the approved mock-up section using mortar as necessary to secure stone masonry in place
   1. Mortar shall be recessed and shall not be visible.
   2. Consult Landscape Architect for direction in stone arrangements and patterns in the or to clarify the appropriate arrangement and placement of stone.

E. Maintain joint widths that replicate the historic stone masonry construction. Consult Landscape Architect for approval on joint with minimum and maximum tolerances to be used.

3.4 CONSTRUCTION TOLERANCES

A. Variation from Plumb: For vertical lines and surfaces, do not exceed 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2 inch in 40 feet or more. For external corners, expansion joints, control joints, and other conspicuous lines, do not exceed 1/4 inch in 20 feet or 1/2 inch in 40 feet.

B. Variation from Level: For bed joints and other conspicuous lines, do not exceed 1/4 inch in 20 feet or 1/2 inch in 40 feet.

C. Variation of Linear Building Line: For position shown in plan, do not exceed 1/2 inch in 20 feet or 3/4 inch in 40 feet or more.

D. Measure variation from level, plumb, and position shown in plan as a variation of the average plane of each stone face from level, plumb, or dimensioned plane.

E. Variation in Mortar-Joint Thickness: Do not vary from joint size range indicated.

F. Variation in Plane between Adjacent Stones: Do not exceed one-half of tolerance specified for thickness of stone.

3.5 INSTALLATION OF ANCHORED GRANITE (COBBLE) CURB

A. General: Reconstructed granite cobble curb items are to utilize the removed and salvaged cobble curb stone, cleaned and made ready for re-installation.

B. Sort cobble stone before it is placed to reconstruct the stone curbing assembly in their arrangement and joint alignments, to remove stone that is damaged, not cleaned or does not

otherwise satisfy with requirements relating to aesthetic effects, physical properties, or that is otherwise unsuitable for intended use.

C. Maintain joint widths that match the existing curb construction. Consult Landscape Architect for approval on joint with minimum and maximum tolerances to be used.

D. Rake out joints for pointing with mortar to depth of not less than 3/4 inch before setting mortar has hardened. Rake joints to uniform depths with square bottoms and clean sides.

3.6 POINTING

A. Prepare granite cobble-joint surfaces for pointing with mortar by removing dust and mortar particles. Where setting mortar was removed to depths greater than surrounding areas, apply pointing mortar in layers not more than 3/8 inch deep until a uniform depth is formed.
   1. Obtain mortar depth and finish approval from Landscape Architect before pointing of stone.

B. Point stone joints by placing and compacting pointing mortar in layers of not more than 3/8 inch deep. Compact each layer thoroughly and allow to it become thumbprint hard before applying next layer.

C. Tool joints, when pointing mortar is thumbprint hard, with a smooth jointing tool to produce the following joint profile:

   1. Joint Profile: Beaded to match the existing and as approved by Landscape Architect.

3.7 ADJUSTING AND CLEANING

A. Remove and replace stone masonry of the following description:

   1. Broken, chipped, stained, or otherwise damaged stone. Stone may be repaired if methods and results are approved by Landscape Architect.
   2. Defective joints.
   3. Stone masonry not matching approved samples and mockups.
   4. Stone masonry not complying with other requirements indicated.

B. Replace in a manner that results in stone masonry matching approved samples and mockups, complying with other requirements, and showing no evidence of replacement.

C. In-Progress Cleaning: Clean stone masonry as work progresses. Remove mortar fins and smears before tooling joints.

D. Final Cleaning: After mortar is thoroughly set and cured, clean stone masonry as follows:

   1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
   2. Test cleaning methods on mockup; leave one-half of panel uncleaned for comparison purposes. Obtain Landscape Architect's approval of sample cleaning before cleaning stone masonry.

3. Protect adjacent stone and non-masonry surfaces from contact with cleaner by covering them with liquid strippable masking agent, polyethylene film, or waterproof masking tape.
4. Wet wall surfaces with water before applying cleaner; remove cleaner promptly by rinsing thoroughly with clear water.
5. Clean stone masonry by bucket and brush hand-cleaning method described in BIA Technical Note No. 20, Revised II, using job-mixed detergent solution.

3.8 EXCESS MATERIALS AND WASTE

A. Excess Stone: Stack excess stone where directed by Owner for Owner's use.

B. Excess Masonry Waste: Remove excess clean masonry waste that cannot be used as fill, as described above, and other waste, and legally dispose of off Owner's property.

END OF SECTION 04 4313

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SECTION 31 1000 - SITE CLEARING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Removing existing trees, shrubs, groundcovers and herbaceous materials that are not to remain.
2. Removing above and below grade site improvements in areas to receive new construction.
3. Disconnecting, capping or sealing, and abandoning site utilities in place.

B. Related Sections

1. Division 02 Section 02 4119 Selective Structure Demolition
2. Division 31 Section 31 2000 Earth Moving
3. Division 31 Section 31 9100 Soils

1.2 DEFINITIONS

A. Topsoil: Surface soil to be stripped and stockpiled. Natural or cultivated surface-soil layer containing organic matter and sand, silt, and clay particles; friable, pervious, and brown or red in color, darker than underlying subsoil reasonably free of subsoil, clay lumps, gravel, stones and other objects more than 2 inches (50 mm) in diameter; and free of subsoil and weeds, roots, toxic materials, or other nonsoil materials. Requirements for satisfactory soil materials are specified in Division 32 Section 32 9100 "Soils".

B. Vegetation Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction,and defined by the drip line of individual trees or the perimeter drip line of groups of trees, and as indicated on site plan.

1.3 MATERIAL OWNERSHIP

A. Except for stripped topsoil or other materials indicated to remain Owner's property, cleared materials and debris shall become Contractor's property and shall be removed from Project site and disposed of legally.

1.4 SUBMITTALS

A. Means and method for selective removal of existing vegetation in the base project area and hillside step construction add alternate work.
1. Submit means and methods for physical operations to remove existing vegetation in preparation for new plantings in the base bid project work area.

2. Submit means and methods for the physical operations to remove existing vegetation on the slope for construction of the hillside steps, Add Alternate No. 2
3. Submit means and methods for removal of existing vegetation in preparation for new plantings in the base bid project work area via herbicide application.
4. Submit means and methods for removal of existing vegetation in preparation for grading and re-seeding in the area for construction of the hillside steps.

B. Product Data: for materials used including and not limited to herbicides for chemical vegetation removal.

1.5 QUALITY ASSURANCE

A. Pre-installation Conference: Conduct conference at Project site to review items to be removed and methods for removal and disposal operations.

B. Means and Methods Procedure: Contractor to provide a written description of the means and methods for selective removal of invasive species and woody materials. Selective may include, physical, and chemical removal. Provide a written document that:
1. States the objectives and goals of selective removal operations
2. Schedule for selective removals that is coordinated with site construction operations and seeding of desired grass mix.
3. Methods for maintaining slope stability and prevention of surface material slides and erosion.
4. Protection of vegetation and site features to remain.
5. Identify local code requirements for undertaking a controlled vegetation burn and how the requirements are being addressed.
6. Identify local code and EPA requirements for undertaking chemical vegetation control. And how the requirements are being met.
7. Method for removal of surface debris
8. Maintenance and Management of cleared slope following clearing operations and establishment of proposed turf grass.

1.6 PROJECT CONDITIONS

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

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways as required by authorities having jurisdiction.
3. Minimize duration of any street closure. Provide temporary bridging over trenches as required to maintain safe traffic.

B. Improvements on property beyond the work scope area: Authority for performing site clearing indicated on property as outlined on the contract drawings will be obtained by Owner before award of Contract.

1. Do not proceed with work beyond the project boundary until directed by Landscape Architect.

C. Salvable Improvements: Carefully remove items indicated to be salvaged or reinstalled and store on Owner's premises where indicated. Review Specifications section for “Demolition”

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

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

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. Satisfactory Soil Materials: Requirements for satisfactory soil materials are specified in Division 32 Section 32 9100 "Soils"

1. Obtain approved soil materials off-site when satisfactory soil materials are not available on-site.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect and maintain benchmarks and survey control points from disturbance during construction on this project or associated projects by others.

B. Locate and clearly flag trees and woody vegetation to be removed.

1. Review tree flags with Landscape Architect prior tree and vegetation removal operations. Secure in writing Owners’ Acceptance of items for removal.

2. Review hillside turf areas for selective removal and excavation.

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

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

3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

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

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

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

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

E. Temporary erosion and sedimentation control measures are intended as supplemental to erosion and sedimentation erosion control measured required under the base contract work.

3.3 UTILITIES

A. Owner will arrange for disconnecting and sealing indicated utilities that serve existing structures before site clearing, when requested by Contractor.

1. Provide Owner with notification of intent to cut utilities not less than 24 hours in advance of Work.

2. Verify that utilities have been disconnected and capped before proceeding with site clearing.

B. Locate, identify, disconnect, and seal or cap off utilities indicated to be removed.

1. Arrange with utility companies to shut off indicated utilities.
2. Owner will arrange to shut off indicated utilities when requested by Contractor.

C. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Landscape Architect not less than two days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Landscape Architect’s written permission.

D. Excavate for and remove underground utilities indicated to be removed or caped and abandoned.

3.4 CLEARING AND GRUBBING

A. Remove obstruction, trees, shrubs, grass and other vegetation to permit installation of new construction including areas for excavation to install structures and walks.
1. Remove vegetation, woody materials including tree stumps in their entirety within required excavation areas.

B. Remove herbaceous vegetation, invasive species, vines, and forbs by either mechanical, chemical or burn operations.

1. Review and determine herbaceous spices removal requirements with Landscape Architect prior to removal operations.

2. Satisfy local and regulatory codes in performing removal operations

3. Obtain all required permits and coordinate burn or chemical applications with authorities having jurisdiction for use of applied materials and methods.

3.5 TOPSOIL STRIPPING

A. Remove turf or surface vegetation before stripping topsoil.

B. Strip topsoil to whatever depths are encountered in a manner to prevent intermingling with underlying subsoil or other waste materials.

1. Remove subsoil and non-soil materials from topsoil, including trash, debris, weeds, roots, and other waste materials.

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

1. Limit height of topsoil stockpiles to 72 inches (1800 mm).
2. Do not stockpile topsoil within tree protection zones.
3. Stockpile locations to be approved by Landscape Architect.

3.6 SITE IMPROVEMENTS

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

B. Store items indicated including those to be reused on site in a location approved by the Landscape Architect. The items are limited however the following may be found on site, these include and are not limited to:
1. Storm water basins frame and grates.
2. Light fixture footings
3. Historical or archaeological artifacts.

3.7 DISPOSAL

A. Disposal: Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property. Retain subparagraph below where recycling programs exist and recycling facilities can accept materials such as concrete or asphalt paving.

END OF SECTION 31 1000

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SECTION 31 2000 – EARTH MOVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:
   1. Excavating, filling, rough grading and preparing subgrades for walks and pavements.
   2. Excavating, rough grading and preparing subgrades for turf, lawns and plantings
   3. Excavation and backfilling trenches for buried electrical utilities.

B. Related Sections include the following:

   1. Division 2 Section "Site Clearing" for site stripping, grubbing, stripping and stockpiling topsoil, and removal of above- and below-grade improvements and utilities.
   2. Division 32 “Soils” for testing of soil materials and approved soils requirements
   3. Division 03 Section “Cast-in-Place Concrete” for concrete construction
   4. Division 04 Section “Stone Masonry” for stone walls and curbs construction
   5. Division 32 Section “Exposed Aggregate Concrete Paving”
   6. Division 32 Section “Turf and Grasses” for lawn preparation
   7. Division 32 Section “Planting” for plant and tree bed preparation.

1.3 DEFINITIONS

A. Backfill: Subsoil 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. Approved Soil: Satisfactory soil for use as fill or backfill imported from off-site or mixed on-site and off-site materials. See Section 32 9100 “Soils” specification.

C. Stabilized Soil: Satisfactory soil for use as fill or backfill manufactured from approved soils and stone aggregate materials. See Section 32 9100“Soil” specification.

D. Subsoil: Native soils located below surface topsoil layer. Satisfactory for use as backfill if free of large stones above 6 inches in any dimension.

E. Base Course: Course placed between the subbase course and hot-mix asphalt paving.

F. Bedding Course: Course placed over the excavated subgrade in a trench before laying pipe.

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

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

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

1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Landscape Architect. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
2. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Landscape Architect. Unauthorized excavation, as well as remedial work directed by Landscape Architect, shall be without additional compensation.

J. Fill: Approved soil materials used to fill utility trenches and other excavations to final grades. See section 02310 “Soils” Specification..

K. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material that exceed 1 cu. yd. (0.76 cu. m) for bulk excavation or 3/4 cu. yd. (0.57 cu. m) for footing, trench, and pit excavation that cannot be removed by rock excavating equipment with not less than 95-hp flywheel power and 17,000-lbf breakout force. On site rock has been defined through borings. Boring logs indicate that subsurface rock is below proposed excavations levels with the exception of the Upper Parking Lot where weathered sandstone was encountered at 5.5 feet in depth and gray and white sandstone was encountered at 7 feet in depth. Excavation in this area for parking lot paving is proposed at approximately 6 feet below current surface grades.

L. Bulk Excavation: Late-model, track-mounted loader; rated at not less than 210-hp (157-kW) flywheel power and developing a minimum of 48,510-lbf (216-kN) breakout force with a general-purpose bare bucket; measured according to SAE J-732.

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

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

O. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.

P. Subsoil: Soil removed below topsoil to the required depth of excavation, tested and stockpiled with erosion control as directed by Landscape Architect disposed of off site.

Q. Soil Fill: Subsoil from excavations or imported soil fill as approved by Landscape Architect.

R. Topsoil: Soil removed from surface to an average depth of 4" from the construction site, tested and stockpiled with erosion control as directed by Landscape Architect.

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

1.4 SUBMITTALS

A. Product Data: For the following:
   1. Excavation Machinery to match or equal definitions.
   2. Geotextile filter fabric

B. Samples of the following:
   1. Three samples of each type of plastic warning tape.
   2. Three (3) 12-by-12-inch (300-by-300-mm) Sample of geotextile, filter fabric.
   3. Three (3) 1quart containers for each proposed material used for bedding, back fill and fill.
   4. Three (3) 1quart containers for soil materials.

C. Other samples to be used in excavation work as applicable.

D. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated:

   1. Classification according to ASTM D 2487 of each on-site and borrow soil material proposed for fill and backfill and planting soil.
      a. See testing requirements for borrow materials in Section 31 2100 Soils
   2. Laboratory compaction curve according to ASTM D 698 and ASTM D 1557 for Drainage fill material including pH analysis

E. Blasting Plan: Blasting is not anticipated for this project

1.5 QUALITY ASSURANCE

A. Geotechnical Testing Agency Qualifications: An independent testing agency qualified according to ASTM E 329 to conduct soil materials and rock-definition testing, as documented according to ASTM D 3740 and ASTM E 548.

B. Preexcavation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1.6 PROJECT CONDITIONS

A. Existing Utilities: Do not interrupt utilities serving facilities occupied by Government or others unless permitted in writing by Landscape Architect and then only after arranging to provide temporary utility services according to requirements indicated.

   1. Notify Landscape Architect not less than five (5) days in advance of proposed utility interruptions.

2. Do not proceed with utility interruptions without Landscape Architects written permission.
3. Contact utility-locator service for area where Project is located before excavating.

B. Demolish and completely remove from site existing underground utilities indicated for removal. Coordinate with utility companies to shut off services if lines are active.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. Unsatisfactory Soils: Soils not meeting the Soils specification and not approved by Landscape Architect. Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487 and A-2-6, A-2-7, A-4, A-5, A-6, and A-7 according to AASHTO M 145, 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.

B. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch (37.5-mm) sieve and not more than 12 percent passing a No. 200 (0.075-mm) sieve.

C. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 95 percent passing a 1-1/2-inch (37.5-mm) sieve and not more than 8 percent passing a No. 200 (0.075-mm) sieve.

D. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch (37.5-mm) sieve and not more than 12 percent passing a No. 200 (0.075-mm) sieve.

E. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; except with 100 percent passing a 1-inch (25-mm) sieve and not more than 8 percent passing a No. 200 (0.075-mm) sieve.

F. Drainage Course: Narrowly graded mixture of washed crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch (37.5-mm) sieve and 0 to 5 percent passing a No. 8 (2.36-mm) sieve.

G. Filter Material: Narrowly graded mixture of natural or crushed gravel, or crushed stone and natural sand; ASTM D 448; coarse-aggregate grading Size 67; with 100 percent passing a 1-inch (25-mm) sieve and 0 to 5 percent passing a No. 4 (4.75-mm) sieve.

H. Sand for Pipe bedding: ASTM C 33; fine aggregate, natural, or manufactured sand.

I. Soils: Provide off-site soil materials as approved when sufficient satisfactory soil materials are not available from excavations.

J. Satisfactory Soils and Planting Soil: refer to Section 32 9100 Soils for acceptable material and Soils testing requirements.

2.2 GEOTEXTILES

A. Subsurface Drainage Geotextile: Nonwoven needle-punched geotextile, manufactured for subsurface drainage applications, made from polyolefins or polyesters; with elongation greater than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced: Mirafi Non-Woven Geotextile 14N or approved equivalent to meet the following:

1. Survivability: Class 2; AASHTO M 288.
2. Grab Tensile Strength: 157 lbf (700 N); ASTM D 4632.
3. Sewn Seam Strength: 142 lbf (630 N); ASTM D 4632.
4. Tear Strength: 56 lbf (250 N); ASTM D 4533.
5. Puncture Strength: 56 lbf (250 N); ASTM D 4833.
6. Apparent Opening Size: No. 40 (0.425-mm) sieve, maximum; ASTM D 4751.
7. Permittivity: 0.5 per second, minimum; ASTM D 4491.
8. UV Stability: 50 percent after 500 hours' exposure; ASTM D 4355.

2.3 ACCESSORIES

A. Warning Tape: Acid- and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches (150 mm) wide and 4 mils (0.1 mm) thick, continuously inscribed with a description of the utility; 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 earthwork operations.

B. Preparation of subgrade for earthwork operations including removal of vegetation, topsoil, debris, obstructions, and deleterious materials from ground surface is specified in Division 31 Section "Site Clearing."

C. Protect and maintain erosion and sedimentation controls, which are specified in Division 31 Section "Site Clearing," during earthwork operations.

D. Provide protective insulating materials to protect subgrades and foundation soils against freezing temperatures or frost.

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

3.2 DEWATERING

A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades and soils as placed during construction, and from flooding any area of the 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.
2. Install a dewatering system to keep subgrades dry and convey ground water away from excavations. Maintain until dewatering is no longer required.
   a. Review dewatering operations with Landscape Architect in advance of dewatering operations.
3. Reroute surface water runoff away from exposed planting soil locations and wall construction operations. Do not allow water to accumulate in coverings or plastic coatings that may collect toxic material run off from other materials on site.

3.3 EXPLOSIVES

A. Explosives: Do not use explosives.

3.4 EXCAVATION, GENERAL

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

1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.

2. Strip topsoil and stockpile at direction of Landscape Architect. Average topsoil depth on construction site is 6 inches (150 mm).

3. Remove rock to lines and grades indicated to permit installation of permanent construction without exceeding the following dimensions:
   a. 12 inches (300 mm) outside of concrete forms at footings.
   b. 6 inches (150 mm) outside of minimum required dimensions of concrete cast against grade.
   c. 6 inches (150 mm) beneath pipe in trenches, and the greater of 24 inches (600 mm) wider than pipe.

3.5 EXCAVATION FOR STRUCTURES

A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch (25 mm). If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.

1. Excavations for Footings: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.

3.6 EXCAVATION FOR WALKS AND PAVEMENTS

A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

B. Fill surfaces under walks and pavements to indicated lines, grades and levels as required to establish subgrade and place specified base course.

3.7 EXCAVATION FOR UTILITY & STORM WATER TRENCHES

A. Excavate trenches for utilities as indicated gradients, lines, depths, and elevations.

1. Beyond building perimeters, excavate trenches to allow installation of top of pipe as directed on plans and detail sections at the depths required. These depths are not less than below frost line unless otherwise specified. Consult Landscape Architect promptly if conditions warrant clarification or adjustment. Form excavations for positive pipe drainage in directions indicated.

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 (300 mm) higher than top of pipe or conduit, unless otherwise indicated. Provide indicated clearances.

C. Trench Bottoms: Excavate trenches 4 inches (100 mm) deeper than bottom of pipe elevation to allow for a sand bedding course of that depth.
1. Excavate trenches 4 inches (100 mm) deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

3.8 EXCAVATION FOR TURF, LAWNS AND PLANTING BEDS

A. All soils are prepared in Soils specification. See Section 32 9100 Soils.

B. Limit subgrade preparation to areas to be seeded with specified seeds.

C. Subgrades: Scrape or machine-tooth undisturbed or newly graded subgrade for an irregular, toothed profile. Remove stones larger than 1-1/2 inches (38 mm) in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose.

1. Spread planting soil mix in six (6) inch lifts to specified depths of one (1) inch to twenty-four (24) inches but not less than required to meet finish grades. Compact in lifts to 85% dry density. Do not spread if soil or subgrade is frozen, muddy, or excessively wet.
   a. Leave finish elevation approximately one-half (1/2") inch below finished pavement surfaces.

D. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus one-quarter 1/4 inch (6.5 mm) of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted in the immediate future.

E. Fine grade as required to repair any damage to soil surfaces prior to seeding turf areas. Restore areas if eroded or otherwise disturbed after finish grading and before planting.

3.9 SUBGRADE INSPECTION

A. Notify Landscape Architect when excavations have reached required subgrade.
   1. Landscape Architect to review excavations of drive and walk pavement to ensure full removal of pavement and base materials. Secure Landscape Architect approval of subgrade prior continuance of earthwork and grading operations.

B. If Landscape Architect determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.

C. Proof-roll subgrade below the pavements, asphalt and concrete with heavy pneumatic-tired equipment for parking areas 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 (5 km/h).
   2. Proof-roll with a loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons (13.6 tonnes).
   3. Excavate soft spots, unsatisfactory subsoils, and areas of excessive pumping or rutting, as determined by Landscape Architect, and replace with compacted backfill or fill as directed.

D. Proof roll or compact narrow walks with narrow mobile compaction machinery as submitted to Landscape Architect and approved. Compact base materials to 90% dry density under paving.

E. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.

F. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Landscape Architect, without additional compensation.

3.10 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 (17.2 MPa), may be used when approved by Landscape Architect.

1. Fill unauthorized excavations under other construction or utility pipe as directed by Landscape Architect.

3.11 SOIL MATERIALS STORAGE AND MANAGEMENT

A. Control excavation piles on site during operations. Maintain neat piles in areas that are readily accessible. Avoid access routes under tree canopies and over unprotected site improvements to remain.
   1. For trench excavation place excavated soils adjacent to trench for backfilling.
   2. For planting excavation place plywood or other surface adjacent to excavation. Deposit excavated soil on rigid surface for removing debris, grass clumps, rocks and for mixing required soil amendments.

B. Stockpile all soil materials and excavated satisfactory soil materials into distinct, identifiable piles without intermixing.
   1. Place, grade, and shape stockpiles to drain surface water.
   2. Cover stockpiles to control soil moisture and prevent windblown dust.
   3. Surround with erosion control measures to limit erosion and siltation.
   4. Stockpile soil materials away from edge of excavations.
   5. Store stockpiles only in approved locations. Do not store under canopies within drip line of trees to remain.

3.12 BACKFILL

A. Place and compact backfill in excavations promptly, but not before completing the following:
   1. Locating underground utilities for Record Documents.
   2. Testing and inspecting underground utilities.
   3. Removing concrete formwork.
   4. Removing temporary shoring and bracing and sheeting.
   5. Removing trash and debris.

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

3.13 UTILITY TRENCH BACKFILL

A. 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.

B. Backfill trenches excavated under footings and within 18 inches (450 mm) of bottom of footings with satisfactory soil; fill with concrete to elevation of bottom of footings. Concrete is specified in Division 03 Section "Cast-in-Place Concrete".

C. Place and compact initial backfill of bedding course and subgrade material, free of particles larger than 1 inch (25 mm) in any dimension, to a height of 12 inches (300 mm) over the utility pipe or conduit.

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

D. Backfill voids with satisfactory soil while installing and removing any shoring and bracing.

E. Place and compact final backfill of satisfactory soil to final subgrade elevation.

F. Install warning tape directly above utilities, 10 inches (250 mm) below finished grade, except position at 6 inches (150 mm) below subgrade under pavements and slabs.

3.14 SOIL FILL

A. Place stockpiled subsoil from excavations as soil fill as approved by Landscape Architect.

B. Plow, scarify, bench, or provide toothed profile on sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.

C. Place and compact fill material and planting soil in layers to required elevations as follows:

1. Under grass and planted areas, use approved planting soil material.
2. Under walks and pavements, use specified fills over subgrade.
3. Under footings use engineered fill.

D. Place soil fill and plating soils on subgrades free of mud, frost, snow, or ice.

3.15 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.

3.16 COMPACTION OF SOIL BACKFILLS AND FILLS

A. Place backfill and fill soil materials in layers not more than 8 inches (200 mm) in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches (100 mm) 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 D 698 and ASTM D 1557:

1. Under foundation and pavements, scarify and recompact top 6 inches (150 mm) below subgrade and compact each layer of backfill or fill soil material at 95 percent.
2. Under walkways, scarify and recompact top 6 inches (150 mm) below subgrade and compact each layer of backfill or fill soil material at 95 percent.
3. Under lawn or unpaved areas, scarify and recompact top 6 inches (150 mm) below subgrade and compact each layer of backfill or fill soil material at 85 percent.

3.17 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 Grading: Slope grades to direct water away from structures and walks and to prevent ponding. Finish subgrades to required elevations within the following tolerances:

1. Lawn or Unpaved Areas: Plus or minus 1 inch (25 mm).
2. Walks: Plus or minus 1 inch (25 mm).
3. Pavements: Plus or minus 1/2 inch (13 mm).

3.18 SUBBASE AND BASE COURSES

A. Place subbase and base course on subgrades free of mud, frost, snow, or ice.

B. On prepared subgrade, place subbase and base course under pavements and walks as follows:

1. Place base course material over subbase course under walk/pathway pavements
2. Shape subbase and base course to required crown elevations and cross-slope grades.
3. Place subbase and base course 6 inches (150 mm) or less in compacted thickness in a single layer.
4. Place subbase and base course that exceeds 6 inches (150 mm) in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches (150 mm) thick or less than 3 inches (75 mm) thick.
5. Compact subbase and base 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 D 698 and ASTM D 1557.

3.19 FIELD QUALITY CONTROL

A. Testing Agency: The Owner will engage a qualified independent geotechnical engineering testing agency to perform field quality-control testing.

B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earthwork only after test results for previously completed work comply with requirements.

C. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Landscape Architect.

D. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable. Tests will be performed at the following locations and frequencies:
   1. Foundation Wall Backfill: At each compacted backfill layer, at least 1 test for each 100 feet (30 m)or less of wall length, but no fewer than 2 tests.
   2. Trench Backfill: At each compacted initial and final backfill layer, at least 1 test for each 150 feet (46 m) or less of trench length, but no fewer than 2 tests.

E. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil to depth required; recompact and retest until specified compaction is obtained.

3.20 PROTECTION

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

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

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

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

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

3.21 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Remove waste materials, including excess soils, unsatisfactory soil, trash and debris, and legally dispose of it off the Owner’s property.

END OF SECTION 31 2000

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SECTION 32 1216 - ASPHALT PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:
   1. Hot-mix asphalt patching for asphalt pavement
   2. Pavement Markings

B. Related Requirements:

   1. Section 02 4119 "Selective Demolition" for demolition and removal of existing asphalt pavement.
   2. Section 31 2000 "Earth Moving" for subgrade preparation, fill material, unbound-aggregate subbase and base courses, and aggregate pavement shoulders.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

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

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

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

   1. Include technical data and tested physical and performance properties.
   2. Job-Mix Designs: Certification, by authorities having jurisdiction, of approval of each job mix proposed for the Work.
   3. Job-Mix Designs: For each job mix proposed for the Work.
   4. Paint Markings: Materials and Templates

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer and testing agency.

B. Material Certificates: For each paving material.

C. Material Test Reports: For each paving material, by a qualified testing agency.

D. Field quality-control reports.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: A paving-mix manufacturer registered with and approved by authorities having jurisdiction or the DOT of state in which Project is located.
   1. The County of Nassau, New York

B. Testing Agency Qualifications: Qualified according to ASTM D 3666 for testing indicated.

C. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements the County of Nassau for asphalt paving work.

   1. Measurement and payment provisions and safety program submittals included in standard specifications do not apply to this Section.

1.7 FIELD CONDITIONS

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

   1. Prime Coat: Minimum surface temperature of 60 deg F (15.6 deg C).
   2. Tack Coat: Minimum surface temperature of 60 deg F (15.6 deg C).
   3. Slurry Coat: Comply with weather limitations in ASTM D 3910.
   4. Asphalt Base Course: Minimum surface temperature of 40 deg F (4.4 deg C) and rising at time of placement.
   5. Asphalt Surface Course: Minimum surface temperature of 60 deg F (15.6 deg C) at time of placement.

PART 2 - PRODUCTS

2.1 AGGREGATES

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

B. Coarse Aggregate: ASTM D 692/D 692M, sound; angular crushed stone, crushed gravel, or cured, crushed blast-furnace slag.

C. Fine Aggregate: ASTM D 1073 or AASHTO M 29, sharp-edged natural sand or sand prepared from stone, gravel, cured blast-furnace slag, or combinations thereof.

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

D. Mineral Filler: ASTM D 242/D 242 or AASHTO M 17, rock or slag dust, hydraulic cement, or other inert material.

2.2 ASPHALT MATERIALS

A. Asphalt Binder: AASHTO M 320, PG 58-28.

B. Asphalt Cement: ASTM D 3381/D 3381M for viscosity-graded material ASTM D 946/D 946M for penetration-graded material.

C. Cutback Prime Coat: ASTM D 2027, medium-curing cutback asphalt, MC-250.

D. Emulsified Asphalt Prime Coat: ASTM D 977 emulsified asphalt, or ASTM D 2397 cationic emulsified asphalt, slow setting, diluted in water, of suitable grade and consistency for application.

E. Tack Coat: ASTM D 977 or emulsified asphalt, or ASTM D 2397 cationic emulsified asphalt, slow setting, diluted in water, of suitable grade and consistency for application.

F. Water: Potable.

G. Undersealing Asphalt: ASTM D 3141/D 3141M; pumping consistency.

2.3 AUXILIARY MATERIALS

A. Joint Sealant: ASTM D 6690or AASHTO M 324, Type II or III, hot-applied, single-component, polymer-modified bituminous sealant.

2.4 MIXES (Replace with Porous Asphalt design Mix.)

A. Hot-Mix Asphalt: Dense-graded, hot-laid, hot-mix asphalt plant mixes approved by authorities having jurisdiction and complying with the following requirements:

1. Provide mixes with a history of satisfactory performance in geographical area where Project is located.
2. Base Course: Class I.
3. Surface Course: Class II.

B. Emulsified-Asphalt Slurry: ASTM D 3910, Type 2.

2.5 PAVEMENT MARKINGS

A. Pavement-Marking Paint: Alkyd-resin type, lead and chromate free, ready mixed, complying with AASHTO M 248, Type N; colors complying with FS TT-P-1952.

1. Colors:
   a. White for parking spaces and pedestrian cross walks
   b. Blue for designated handicapped parking space and painted walk area.

PART 3 - EXECUTION

3.1 EXAMINATION

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

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

1. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph (5 km/h).
2. Proof roll with a loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons (13.6 tonnes).
3. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.

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

3.2 PATCHING

A. Asphalt Pavement: Saw cut perimeter of patch and excavate existing pavement section to sound base. Excavate rectangular or trapezoidal patches, extending 12 inches (300 mm) into perimeter of adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Remove excavated material. Recompact existing unbound-aggregate base course to form new subgrade.

B. Tack Coat: Before placing patch material, apply tack coat uniformly to vertical asphalt surfaces abutting the patch. Apply at a rate of 0.05 to 0.15 gal./sq. yd. (0.2 to 0.7 L/sq. m).

1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

C. Placing Patch Material: Partially fill excavated pavements with hot-mix asphalt base mix and, while still hot, compact. Cover asphalt base course with compacted, hot-mix surface layer finished flush with adjacent surfaces.

3.3 REPAIRS

A. Leveling Course: Install and compact leveling course consisting of hot-mix asphalt surface course to level sags and fill depressions deeper than 1 inch (25 mm) in existing pavements.

1. Install leveling wedges in compacted lifts not exceeding 3 inches (75 mm) thick.

B. Crack and Joint Filling: Remove existing joint filler material from cracks or joints to a depth of 1/4 inch (6 mm).

1. Clean cracks and joints in existing hot-mix asphalt pavement.
2. Use emulsified-asphalt slurry to seal cracks and joints less than 1/4 inch (6 mm) wide. Fill flush with surface of existing pavement and remove excess.
3. Use hot-applied joint sealant to seal cracks and joints more than 1/4 inch (6 mm) wide. Fill flush with surface of existing pavement and remove excess.

3.4 SURFACE PREPARATION

A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving.

B. Herbicide Treatment: Apply herbicide according to manufacturer's recommended rates and written application instructions. Apply to dry, prepared subgrade or surface of compacted-aggregate base before applying paving materials.

1. Mix herbicide with prime coat if formulated by manufacturer for that purpose.

C. Emulsified Asphalt Prime Coat: Apply uniformly over surface of compacted unbound-aggregate base course at a rate of 0.10 to 0.30 gal./sq. yd. per inch depth (0.5 to 1.40 L/sq. m per 25 mm depth). Apply enough material to penetrate and seal, but not flood, surface. Allow prime coat to cure.

1. If prime coat is not entirely absorbed within 24 hours after application, spread sand over surface to blot excess asphalt. Use enough sand to prevent pickup under traffic. Remove loose sand by sweeping before pavement is placed and after volatiles have evaporated.
2. Protect primed substrate from damage until ready to receive paving.

D. Tack Coat: Apply uniformly to surfaces of existing pavement at a rate of 0.05 to 0.15 gal./sq. yd. (0.2 to 0.7 L/sq. m).

1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

3.5 PLACING HOT-MIX ASPHALT

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

1. Place hot-mix asphalt base course in number of lifts and thicknesses indicated.
2. Place hot-mix asphalt surface course in single lift.
3. Spread mix at a minimum temperature of 250 deg F (121 deg C).
4. Begin applying mix along centerline of crown for crowned sections and on high side of one-way slopes unless otherwise indicated.
5. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.

B. Place paving in consecutive strips not less than 10 feet (3 m) wide unless infill edge strips of a lesser width are required.

1. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Overlap mix placement about 1 to 1-1/2 inches (25 to 38 mm) from strip to strip to ensure proper compaction of mix along longitudinal joints.
2. Complete a section of asphalt base course before placing asphalt surface course.

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

3.6 JOINTS

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

1. Clean contact surfaces and apply tack coat to joints.
2. Offset longitudinal joints, in successive courses, a minimum of 6 inches (150 mm).
3. Offset transverse joints, in successive courses, a minimum of 24 inches (600 mm).
4. Construct transverse joints at each point where paver ends a day's work and resumes work at a subsequent time. Construct these joints using either "bulkhead" or "papered" method according to AI MS-22, for both "Ending a Lane" and "Resumption of Paving Operations."
5. Compact joints as soon as hot-mix asphalt will bear roller weight without excessive displacement.
6. Compact asphalt at joints to a density within 2 percent of specified course density.

3.7 COMPACTION

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

1. Complete compaction before mix temperature cools to 185 deg F (85 deg C).

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

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

1. Average Density: 96 percent of reference laboratory density according to ASTM D 6927 or AASHTO T 245, but not less than 94 percent or greater than 100 percent.
2. Average Density: 92 percent of reference maximum theoretical density according to ASTM D 2041, but not less than 90 percent or greater than 96 percent.

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

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

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

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

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

3.8 INSTALLATION TOLERANCES

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

1. Base Course: Plus or minus 1/2 inch (13 mm).
2. Surface Course: Plus 1/4 inch (6 mm), no minus.

B. Pavement Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 10-foot (3-m) straightedge applied transversely or longitudinally to paved areas:

1. Base Course: 1/4 inch (6 mm).
2. Surface Course: 1/8 inch (3 mm).
3. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch (6 mm).

3.9 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.

B. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined according to ASTM D 3549.

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

D. In-Place Density: Testing agency will take samples of uncompacted paving mixtures and compacted pavement according to ASTM D 979 or AASHTO T 168.

1. Reference maximum theoretical density will be determined by averaging results from four samples of hot-mix asphalt-paving mixture delivered daily to site, prepared according to ASTM D 2041, and compacted according to job-mix specifications.
2. In-place density of compacted pavement will be determined by testing core samples according to ASTM D 1188 or ASTM D 2726.

    a. One core sample will be taken for every 1000 sq. yd. (836 sq. m) or less of installed pavement, with no fewer than three cores taken.
    b. Field density of in-place compacted pavement may also be determined by nuclear method according to ASTM D 2950 and correlated with ASTM D 1188 or ASTM D 2726.

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

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

3.10 PAVEMENT MARKING

A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with landscape Architect.

B. Allow paving to age for 30 days before starting pavement marking.

C. Sweep and clean surface to eliminate loose material and dust.

D. Apply paint with mechanical equipment to produce pavement markings, of dimensions indicated, with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils (0.4 mm).

1. Broadcast glass beads uniformly into wet pavement markings at a rate of 6 lb/gal. (0.72 kg/L).

3.11 WASTE HANDLING

A. General: Dispose of asphalt-paving waste off site at a facility for recycling of asphaltic concrete materials.

END OF SECTION 32 1216

SECTION 32 1313 – INTEGRAL EXPOSED AGGREGATE CONCRETE PAVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes Concrete Paving Including the Following:
   1. Walks.

B. Related Requirements:

   1. Section 033000 "Cast-in-Place Concrete" for general applications of concrete.
   2. Section 321373 "Concrete Paving Joint Sealants" for joint sealants in expansion and contraction joints within concrete paving and in joints between concrete paving and asphalt paving or adjacent construction.

1.2 DEFINITIONS

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

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

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project Site.

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

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

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

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

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

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

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

1. Exposed Aggregate: 3-lb Sample of each mix.

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

1.5 INFORMATIONAL SUBMITTALS

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

B. Material Certificates: Signed by manufacturers certifying that each of the following materials used in the project complies with requirements:

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

C. Field quality-control reports.

D. Pavement Joint Layout Plan: Plan to show joint locations and typical dimensions for review and approval by the Contracting Officer.

1.6 SHOP DRAWINGS

A. Reinforcement Shop Drawing: Submit shop drawings, minimum of 2 copies or electronically in PDF format for fabrication, bending, and placement of concrete reinforcement.
1. Comply with ACI 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures" (latest edition), showing bar schedules, stirrup spacing, diagrams of bent bars, placing plans elevations showing arrangement of concrete reinforcement.
2. Reproduction of the Contract Drawings are not acceptable for use as shop drawings.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: Experienced installer who has completed pavement work similar in material, design, and extent to that indicated for Project and whose work has resulted in construction with a record of successful in-service performance.

B. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant and each aggregate from one source.

C. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

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

D. Testing Agency Qualifications: Qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.

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

E. Aggregate Samples and Test Panels: Submit aggregate samples and construction of test panels for selection of exposed aggregate materials and finish.
1. Aggregate Samples: The Contractor shall submit four (4) three (3 lbs.) pound bags of the aggregate for initial selection of aggregate for use.
    a. Aggregate shall be angular crushed quarry stone No. 8 in size (3/8 to 5/8" dia.)
    b. Aggregate shall be from a regional quarry source (within 500 miles of the project location.).
    c. Aggregate shall range in color from grey and black to beige
2. Color Admixture: The Contractor shall submit the manufacturer's standard dolor chart for initial selection of color admixture to be used with the test panels.

3. Test Panel Mixtures: Up to two (2) color aggregates and two (2) color admixtures, one no color admixture may be selected for use in constructing up to five (5) test panels for initial selection of desired finish and color. Combinations will be determined by the Owner and Landscape Architect.

F. Test Panels: Contractor shall construct not less than five (5) test panels of selected aggregates and colors for review and selection of the preferred exposed aggregate concrete paving mock-up panel.
1. Test samples shall:
    a. Be constructed as 5 foot x 5 foot square panels
    b. The five sample panels for the prescribed aggregate and color mixes, will incorporate concrete color admixture. The test panels will be used to test for the color and exposed aggregate finished appearance, color and finishing techniques for exposing the integral aggregate. Prescribed mixes will be determined at the time of test panel construction with the Owner and Landscape Architect.
    c. One of the five (5) panels will be selected for a final mock-up.

G. Mockups: Cast mockups of full-size sections of concrete pavement to demonstrate typical joints, surface finish, texture, color, and standard of workmanship.
   1. Build a 5 foot wide by 8 foot in length mock-up on site. At a location as determined by the Owner and Landscape Architect.
   2. Notify the Landscape Architect seven days in advance of dates and times when mockups will be constructed.
   3. Obtain approval from Landscape Architect before starting mockup construction.
   4. Maintain approved mockups during construction in an undisturbed condition as a standard for judging the completed pavement.
   5. Demolish and remove approved mockups from the site when directed by Contracting Officer.

1.8 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Engage a qualified independent testing agency to perform preconstruction testing on concrete paving mixtures.
   1. Before submitting design mixes, review concrete pavement mix design and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with concrete pavement to attend, including the following:
      a. Contractor's superintendent.
      b. Independent testing agency responsible for concrete design mixes.
      c. Ready-mix concrete producer.
      d. Concrete subcontractor.

1.9 FIELD CONDITIONS

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

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

   1. When air temperature has fallen to or is expected to fall below 40 deg F (4.4 deg C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F (10 deg C) and not more than 80 deg F (27 deg C) at point of placement.
   2. Do not use frozen materials or materials containing ice or snow.
   3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in design mixtures.

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

   1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F (32 deg C) at time of placement. Chilled mixing water or chopped ice may be used to control

temperature, provided water equivalent of ice is calculated in total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.

2. Cover steel reinforcement with water-soaked burlap, so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
3. Fog-spray forms and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

D. Coordination and Scheduling: Coordinate with other trades and arrange scheduling to avoid damage to other work including grading, site utilities and piping, asphalt paving, landscaping and irrigation systems.

E. Field Measurements: Verify dimensions and existing conditions shown on the drawings by taking field measurements prior to start of work. Report discrepancies to the Contracting Officer for clarification and make minor adjustments in layout as required by field conditions and as approved by the Contracting Officer, at no additional cost to the Government.

F. Environmental Requirements: Perform work only under suitable weather conditions. Comply with the environmental requirements of PennDOT Standard Specifications Section 1000 for concrete placement.

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

A. ACI Publications: Comply with ACI 301 (ACI 301M) unless otherwise indicated.

2.2 FORMS

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

1. Use flexible or uniformly curved forms for curves with a radius of 100 feet (30.5 m) or less. Do not use notched and bent forms.
   a. Faceted form work will not be accepted.

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

2.3 STEEL REINFORCEMENTS

A. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60 (Grade 420) epoxy coated steel bars;. Cut bars true to length with ends square and free of burrs.

B. Reinforcing Bars: ASTM A615, Grade 60, deformed , epoxy coated

C. Welded Wire Fabric (WWF) ASTM, welded steel wire fabric, epoxy coated

2.4 CONCRETE MATERIALS

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

1. Portland Cement: ASTM C 150/C 150M, gray portland cement Type I.
2. Fly Ash: ASTM C 618, Class C
3. Slag Cement: ASTM C 989/C 989M, Grade 100.
4. Blended Hydraulic Cement: ASTM C 595/C 595M, Type IP, portland-pozzolan cement.
5. Cement Concrete: meeting PennDOT Class C Concrete.

B. Normal-Weight Aggregates: Provide aggregates from a single source.

1. Aggregate size and color shall be same as specified for exposed aggregate.

C. Exposed Aggregate: Selected, hard, and durable; washed; free of materials with deleterious reactivity to cement or that cause staining; from a single source, with gap-graded coarse aggregate as follows:
1. Exposed Aggregate shall be stone type #8 washed stone sourced from (identify NYS local quarry/supplier for project)
2. Top Cast 50%: Acid etch 1/8” to 3/8” into top of concrete
3. As approved in the mock up.

D. Air-Entraining Admixture: ASTM C 260/C 260M.

E. Chemical Admixtures: Admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material. Chemical admixtures shall meet the following, or PennDOT Standard Specification Section 711:

1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
2. Retarding Admixture: ASTM C 494/C 494M, Type B.
3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

F. Water: Potable and complying with ASTM C 94/C 94M.

2.5 CURING MATERIALS

A. Absorptive Cover: AASHTO M 182, Class 3, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m) dry or cotton mats.

B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

C. Water: Potable.

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

2.6 RELATED MATERIALS

A. Joint Fillers: ASTM D 1751, asphalt-saturated cellulosic fiber or ASTM D 1752, cork or self-expanding cork in preformed strips.

B. Bonding Agent: ASTM C 1059/C 1059M, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

C. Epoxy-Bonding Adhesive: ASTM C 881/C 881M, two-component epoxy resin capable of humid curing and bonding to damp surfaces; of class suitable for application temperature, of grade complying with requirements, and of the following types:

1. Types I and II, nonload bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

2.7 CONCRETE MIXTURES

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

1. Use a qualified independent testing agency for preparing and reporting proposed concrete design mixtures for the trial batch method.
2. When automatic machine placement is used, determine design mixtures and obtain laboratory test results that comply with or exceed requirements.
3. Do not use the Project field quality-control testing agency as the independent testing agency.

B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows**:**

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

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

1. Air Content: 5-1/2 percent plus or minus 1-1/2 percent for 1-1/2-inch (38-mm) nominal maximum aggregate size.

2. Air Content: 6 percent plus or minus 1-1/2 percent for 1-inch (25-mm) nominal maximum aggregate size.
3. Air Content: 6 percent plus or minus 1-1/2 percent for 3/4-inch (19-mm) nominal maximum aggregate size.

D. Limit water-soluble, chloride-ion content in hardened concrete to 0.30 percent by weight of cement.

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

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

F. Concrete Mixtures: Normal-weight concrete.

1. Compressive Strength (28 Days): 3500 psi
2. Maximum W/C Ratio at Point of Placement: 0.45
3. Slump Limit: 2 to 4 inches.

G. Concrete Sidewalk Mixtures: Normal-weight concrete.

1. Compressive Strength (28 Days): 3500 psi
2. Maximum W/C Ratio at Point of Placement: 0.45
3. Slump Limit: 2 to 4 inches.

2.8 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M and ASTM C 1116/C 1116M. Furnish batch certificates for each batch discharged and used in the Work.

1. When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.
2. Project-Site Mixing: There will be no Project-Site Mixing.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Subgrade shall be tested by Geotechnical Engineer and pass required tests prior to concrete pavement placement.

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

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

1. Completely proof-roll subbase in one direction. Limit vehicle speed to 3 mph (5 km/h).
2. Correct subbase with soft spots and areas of pumping or rutting exceeding depth of ½ inch according to requirements in Section 312000 "Earth Moving."

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

3.2 PREPARATION

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

3.3 EDGE FORMS AND SCREED CONSTRUCTION

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

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

3.4 JOINTS

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

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

B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.
1. Butt Joints: Use bonding agent at joint locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

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

1. Locate expansion joints at intervals of 20 feet maximum unless otherwise indicated.
2. Extend joint fillers full width and depth of joint.
3. Terminate joint filler not less than 1/2 inch (13 mm) or more than 1 inch (25 mm) below finished surface if joint sealant is indicated.
4. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.

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

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

1. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- (3-mm-) min. wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.

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

3.5 CONCRETE PLACEMENT

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

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

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

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

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

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

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

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

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

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

J. Walks: Minimum 4" thick, with expansion joints at intervals of 20 feet maximum and saw cut contraction joints at intervals equal to width of walks or maximum 5-foot intervals. Tool edges to rounded profile and finish as noted herein or shown on the drawings. Pitch walks ¼" per foot for drainage unless otherwise indicated.

3.6 SPECIAL FINISHES

A. Monolithic Exposed-Aggregate Finish: Expose coarse aggregate in paving surface as follows:

1. Immediately after float finishing, spray-apply chemical surface retarder to paving according to manufacturer's written instructions. Surface retarded shall be applied in a way to avoid contamination onto surrounding areas. Alternative methods of application may be presented for approval.
2. Cover paving surface with plastic sheeting, sealing laps with tape, and remove when ready to continue finishing operations.
3. Without dislodging aggregate, remove mortar concealing the aggregate by lightly brushing surface with a stiff, nylon-bristle broom. Do not expose more than one-third of the average diameter of the aggregate and not more than one-half of the diameter of the smallest aggregate.
4. Fine-spray surface with water and brush. Repeat cycle of water flushing and brushing until cement film is removed from aggregate surfaces to depth required.
5. Top Cast 50%: Acid etch 1/8" to 3/8" into top of concrete.

3.7 CONCRETE PROTECTION AND CURING

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

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

C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete but before float finishing.

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

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

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

a. Water.
b. Continuous water-fog spray.
c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with 12-inch (300-mm) lap over adjacent absorptive covers.

2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive. Immediately repair any holes or tears occurring during installation or curing period, using cover material and waterproof tape.
3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating, and repair damage during curing period. Power spray for applying curing compound shall only be used if the work can be performed without contamination onto surrounding areas.

3.8 PAVING TOLERANCES

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

1. Elevation: 1/4 inch (19 mm).
2. Thickness: Plus 3/8 inch (10 mm), minus 1/4 inch (6 mm).
3. Surface: Gap below 10-feet- (3-m-) long; unleveled straightedge not to exceed 1/4 inch (13 mm).
4. Alignment of Tie-Bar End Relative to Line Perpendicular to Paving Edge: 1/2 inch per 12 inches (13 mm per 300 mm) of tie bar.
5. Lateral Alignment and Spacing of Dowels: 1 inch (25 mm).
6. Vertical Alignment of Dowels: 1/4 inch (6 mm).
7. Alignment of Dowel-Bar End Relative to Line Perpendicular to Paving Edge: 1/4 inch per 12 inches (6 mm per 300 mm) of dowel.
8. Joint Spacing: 3 inches (75 mm).
9. Contraction Joint Depth: Plus 1/4 inch (6 mm), no minus.
10. Joint Width: Plus 1/8 inch (3 mm), no minus.

3.9 FIELD QUALITY CONTROL

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

B. Testing Services: Testing and inspecting of composite samples of fresh concrete obtained according to ASTM C 172/C 172M shall be performed according to the following requirements:

1. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. (76 cu. m)or fraction thereof of each concrete mixture placed each day.

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

2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
3. Air Content: ASTM C 231/C 231M, pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
4. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F (4.4 deg C) and below and when it is 80 deg F (27 deg C) and above, and one test for each composite sample.
5. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one set of three standard cylinder specimens for each composite sample.
6. Compressive-Strength Tests: ASTM C 39/C 39M; test one specimen at seven days and two specimens at 28 days.

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

C. Strength of each concrete mixture will be satisfactory if average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi (3.4 MPa).

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

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

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

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

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

I. Prepare test and inspection reports.

3.10 REPAIR AND PROTECTION

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

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

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

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

END OF SECTION 32 1313

SECTION 32 1373 - EXTERIOR JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Expansion and contraction joints within exterior concrete walks
2. Joints between exterior vertical walls, curbs, horizontal pavements

B. Related Sections:

1. 03 3000 Cast-in-Place Concrete
2. 31 2000 Earth Moving
3. 32 1313 Exposed Aggregate Concrete Pavement
4.

1.2 SUBMITTALS

A. Product Data: For each joint-sealant product indicated.

1. Submit three (3) copies of each submittal.

B. Samples for Verification: For each type and color of joint sealant required. Install joint-sealant samples in 1/2-inch- (13-mm-) wide joints formed between two 6-inch- (150-mm-) long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

1. For each type of application, materials and color paving stone installations.
   a. Concrete Paving

C. Product Certificates: For each type of joint sealant and accessory, signed by product manufacturer.

D. Qualification Data: For Installer

E. Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:

1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.

F. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for sealants.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: An employer of workers trained and approved by manufacturer.

B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.

C. Preconstruction Compatibility and Adhesion Testing: Submit to joint-sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.

1. Use ASTM C 1087 manufacturer's standard test methods to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
2. Submit not fewer than eight (8) pieces of each type of material, including joint substrates, shims, joint-sealant backings, secondary seals, and miscellaneous materials.
3. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.
4. For materials failing tests, obtain joint-sealant manufacturers written instructions for corrective measures including use of specially formulated primers.
5. Testing will not be required if joint-sealant manufacturers submit joint preparation data that are based on previous testing of current sealant products for adhesion to, and compatibility with, joint substrates and other materials matching those submitted.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration date, pot life, curing time, and mixing instructions for multi-component materials.

B. Store and handle materials to comply with manufacturer's written instructions to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

1.5 PROJECT CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer.
2. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F (4.4 deg C).
3. When joint substrates are wet or covered with frost.
4. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.

5. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products listed in other Part 2 articles.

B. Products: Subject to compliance with requirements, provide one of the products listed in other Part 2 articles.

2.2 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, backing materials, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer based on testing and field experience.

B. Colors of Exposed Joint Sealants: As selected by Landscape Architect from manufacturer's full range.

1. Colors to be selected for each type of application.

2.3 COLD-APPLIED JOINT SEALANTS

A. Multicomponent Jet-Fuel-Resistant Sealant for Concrete: Pourable, chemically curing elastomeric formulation complying with the following requirements for formulation and with ASTM C 920 for type, grade, class, and uses indicated:

1. Walk and pavement areas not over below grade occupied structures: Two-part chemically-curing cold-applied sealant, type II, Class “A” ASTM C-920-98, Type M, Class 25, Grade NS, Use T,M,A and O.
   a. DynaTred
   b. Or approved equivalent by Landscape Architect and Prefabricated Panel Manufacturer
2. Manufacture:
   a. Pecora Corporation, Harleysville, PA
   b. Or approved equivalent.

2.4 JOINT-SEALANT BACKER MATERIALS

A. General: Provide joint-sealant backer materials that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by joint-sealant manufacturer based on field experience and laboratory testing.

B. Backer Strips for Cold- and Hot-Applied Sealants: ASTM D 5249; Type 2; of thickness and width required to control sealant depth, prevent bottom-side adhesion of sealant, and fill remainder of joint opening under sealant.

2.5 PRIMERS

A. Primers: Product recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

1. Pecora P-150
2. Or approved equivalent.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.

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

3.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions.

B. Joint Priming: Prime joint substrates where indicated or where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

3.3 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Install backer materials of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of backer materials.
2. Do not stretch, twist, puncture, or tear backer materials.
3. Remove absorbent backer materials that have become wet before sealant application and replace them with dry materials.

D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses provided for each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealants from surfaces adjacent to joint.
2. Use tooling agents that are approved in writing by joint-sealant manufacturer and that do not discolor sealants or adjacent surfaces.

F. Provide joint configuration to comply with joint-sealant manufacturer's written instructions, unless otherwise indicated.

G. Provide recessed joint configuration for silicone sealants of recess depth and at locations indicated.

3.4 CLEANING

A. Clean off excess sealants or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage

or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately and replace with joint sealant so installations with repaired areas are indistinguishable from the original work.

END OF SECTION 23 1373

SECTION 32 1420 - BRICK PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:
   1. Concrete pavers set in aggregate and sand setting beds.

B. Related Sections:
   1. Division 31 Section 31 2000 "Earth Moving”
   2. Division 32 Section 321313 Exposed Aggregate Concrete Paving

1.3 ACTION SUBMITTALS

A. Product Data: For materials other than water and aggregates.

B. Product Data: For the following:

   1. Brick Paving
   2. Stone aggregate setting material.
   3. Sand setting and joint material.

C. Sieve Analyses: For aggregate setting-bed materials, according to ASTM C 136.

D. Samples for Initial Selection: For the following:

   1. Sand for brick joint infill

1.4 QUALITY ASSURANCE

A. Source Limitations: Reuse brick pavers from brick paving demolition. Do not use brick that have not been cleaned or that are damaged or broken.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store pavers on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied.

B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

1.6 PROJECT CONDITIONS

A. Cold-Weather Protection: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen subgrade or setting beds. Remove and replace unit paver work damaged by frost or freezing.

PART 2 - PRODUCTS

2.1 CONCRETE PAVERS

A. Brick Pavers: Reuse Owner's Brick savaged from brick paving demolition.

B. Graded Aggregate for Base: Sound, crushed stone or gravel complying with ASTM D 448 for Size No. 8 or ASTM D 2940, base material as detailed.

C. Sand for Leveling Course: Sound, sharp, washed, natural sand or crushed stone complying with gradation requirements in ASTM C 33 for fine aggregate.

D. Sand for Joints: Fine, sharp, washed, natural sand or crushed stone with 100 percent passing No. 16 (1.18-mm) sieve and no more than 10 percent passing No. 200 (0.075-mm) sieve.

1. Provide sand of color needed to produce required joint color.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas indicated to receive paving, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.

B. Where pavers are to be installed over waterproofing, examine waterproofing installation, with waterproofing Installer present, for protection from paving operations, including areas where waterproofing system is turned up or flashed against vertical surfaces.

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

3.2 PREPARATION

A. Remove substances from concrete substrates that could impair mortar bond, including curing and sealing compounds, form oil, and laitance.

B. Sweep concrete substrates to remove dirt, dust, debris, and loose particles.

C. Proof-roll prepared subgrade according to requirements in Division 31 Section "Earth Moving" to identify soft pockets and areas of excess yielding. Proceed with unit paver installation only after deficient subgrades have been corrected and are ready to receive subbase and base course for unit pavers.

3.3 INSTALLATION, GENERAL

A. Do not use brick pavers with chips, cracks, voids, discolorations, or other defects that might be visible or cause staining in finished work.

B. Mix pavers, as they are placed, to produce uniform blend of colors and textures.

C. Cut unit pavers with motor-driven masonry saw equipment to provide clean, sharp, unchipped edges. Cut units to provide pattern indicated and to fit adjoining work neatly. Use full units without cutting where possible. Hammer cutting is not acceptable.

D. Handle protective-coated brick pavers to prevent coated surfaces from contacting backs or edges of other units. If, despite these precautions, coating does contact bonding surfaces of brick, remove coating from bonding surfaces before setting brick.

E. Joint Pattern: Common Bond Match Existing and as detailed on the contract documents.
1. Set pavers with 1/16 th inch joints, sand filled, typ.

F. Tolerances: Do not exceed 1/32-inch (0.8-mm) unit-to-unit offset from flush (lippage) nor 1/8 inch in 10 feet (3 mm in 3 m) from level, or indicated slope, for finished surface of paving.

G. Tolerances: Do not exceed 1/16-inch (1.6-mm) unit-to-unit offset from flush (lippage) nor 1/8 inch in 24 inches (3 mm in 600 mm) and 1/4 inch in 10 feet (6 mm in 3 m) from level, or indicated slope, for finished surface of paving.

H. Coordinate brick paving repair with construction of the adjacent concrete walk to act as the edge restraints.

3.4 AGGREGATE SETTING-BED APPLICATIONS

A. Set aggregate base and sand setting bed as per unit paver manufacturer’s specifications to meet or exceed criteria as herein specified. Should conflict occur consult with Landscape Architect for clarification.

B. Compact soil subgrade uniformly to at least 95 percent of ASTM D 698 and ASTM D 1557 laboratory density.

C. Proof-roll prepared subgrade to identify soft pockets and areas of excess yielding. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.

D. Place aggregate base, compact to 100 percent of ASTM D 1557 maximum laboratory density, and screed to depth indicated.

E. Place leveling course and screed to a thickness of 1 to 1-1/2 inches (25 to 38 mm), taking care that moisture content remains constant and density is loose and uniform until pavers are set and compacted.

F. Set pavers with a maximum joint width of 1/16 inch (1.5 mm) being careful not to disturb leveling base. If pavers have spacer bars, place pavers hand tight against spacer bars. Use string lines to keep straight lines. Do not use pavers less than 4 inches in width, modify adjacent paver to achieve minimum paver size needed in field condition. Cut to fit from full-size unit pavers.

G. Vibrate pavers into leveling course with a low-amplitude plate vibrator capable of a 3500- to 5000-lbf (16- to 22-kN) compaction force at 80 to 90 Hz. Use vibrator with neoprene mat on face of plate or other means as needed to prevent cracking and chipping of pavers. Perform at least three passes across paving with vibrator.

1. Compact pavers when there is sufficient surface to accommodate operation of vibrator, leaving at least 36 inches (900 mm) of uncompacted pavers adjacent to temporary edges.
2. Before ending each day's work, compact installed concrete pavers except for 36-inch (900 mm) width of uncompacted pavers adjacent to temporary edges (laying faces).
3. As work progresses to perimeter of installation, compact installed pavers that are adjacent to permanent edges unless they are within 36 inches (90 mm) of laying face.
4. Before ending each day's work and when rain interrupts work, cover pavers that have not been compacted and cover leveling course on which pavers have not been placed with nonstaining plastic sheets to protect them from rain.

H. Spread dry sand and fill joints immediately after vibrating pavers into leveling course. Vibrate pavers and add sand until joints are completely filled, then remove excess sand. Leave a slight surplus of sand on the surface for joint filling.

I. Repeat joint-filling process 30 days later.

3.5 REPAIRING AND CLEANING

A. Remove and replace unit pavers that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Provide new units to match adjoining units and install in same manner as original units, with same joint treatment and with no evidence of replacement.

B. Cleaning: Remove excess grout from exposed paver surfaces; wash and scrub clean.

1. Remove temporary protective coating as recommended by coating manufacturer and as acceptable to paver and grout manufacturers.
2. Do not allow protective coating to enter floor drains. Trap, collect, and remove coating material.

END OF SECTION 32 1420

SECTION 32 9100 – SOILS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Lawn/Turf and Planting Soil (Soil) for use on the project to include but not limited to:
   a. Lawn Repair and Establishment
   b. Tree Planting

2. Turf Re-establishment
   a. Soil for topdressing and filling depressions

1.2 DEFINITIONS

A. General Contractor: as defined for purposes of work separation shall be the Contractor holding the construction contract with the Owner for construction of the site accessibility alterations.

B. Landscape Contractor: as defined for purposes of work separation shall be the Landscape Contractor undertaking the landscape work that includes providing and installing landscape soils and plant materials.

C. Lawn/Turf and Planting Soil: Manufactured soil to meet soil characteristic as specified in section 2 Products of these specifications. Lawn/Turf and Planting soil may include a mix of standardized topsoil; modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.

D. Topsoil: Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments..

E. Humus for Soil Amendment as required: Composted Pine Bark fines, material shall range in size from 0.1 mm – 15 mm, have a dark brown to black color and be free of wood particles for organic humus matter composted to meet specified soil composition. To be added as required to achieve specified % using fully composted pine bark that is weed free to match approved sample.

F. Excavation: Removal of materials to accommodate specified soil fill above subgrade elevations and to grades, lines and dimensions indicated. See Section 02300 – Earthworks.

G. Fill: Approved soil materials used to fill utility trenches and other excavations to final grades.

H. Final Grade: Finished surface elevation to match grading plan(s) and spot elevation(s) or surrounding undisturbed grades.

I. Grubbing: Removal of surface turf and vegetation to shallow subgrade to receive approved soil for fine grading operations.

J. pH Modification Materials for Soil Amendment: To increase pH if below desired range apply Standard Dolomitic Liming Material, minimum 36% magnesium carbonate passing 100% through a standard No. 20 sieve and retaining 25% passing a No. 100 sieve. To decrease pH if it is above desired range Iron Sulfate or Aluminum Sulfate. Amend soils as required for pH adjustment. Retest for target of 6.0 to 7.0 pH range by area as determined, amending until target pH range is achieved.

K. Sand for Soil Amendment as required based on test results:

1. Very Coarse Sand: Sharp sand with particle size from 1.0 mm to 2.0 mm particle size and neutral pH to match approved sample.
2. Coarse Sand: Sharp sand with particle size from .5 mm to 1.0 mm particle size and neutral pH to match approved sample.
3. Medium Sand: Sharp sand with particle size from .25 mm to .5 mm particle size and neutral pH to match approved sample.
4. Fine Washed Sand: Sand with particle size from .10 to .25 mm particle size and neutral pH to match approved sample.

L. Small Gravel for Soil Amendments as required based on test results: Sharp gravel with particle size from 2 mm to 12.5 mm (1/2 inch) particle size and neutral pH to match approved sample for soil amendment as required to meet percolation specification.

M. Stone Aggregate for Stabilized Soils: Angular crushed stone with particle size from 1 ½ to 2 inch diameter with a pH value between 6.0 and 7.0 to match approved stone sample for soil amendment as required to meet percolation specification.

N. Subgrade: Surface of elevation after completing excavation backfill that may be specified top surface on which approved soil is placed. Level reached after excavation to specified depth or removal to undisturbed subsoil as a prepared and approved surface to place approved soil.

O. Subsoil: Soil removed below topsoil to the required depth of excavation and stockpiled as directed by Landscape Architect or disposed of off site. See Section 31 2000 – Earth Moving.

1.3 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Landscape Contractor. Include list of similar projects completed by Installer demonstrating Installer's capabilities and experience. Include project names, addresses, and year completed, and include names and addresses of Owners' contact persons.

1. Landscape Contractor’s qualifications to be submitted at time of Bid.

B. Product Certificates: For each type of manufactured product, from manufacturer, and complying with the following:

1. Manufacturer's certified analysis of standard products.
2. Analysis of other materials by a recognized laboratory made according to methods established by the Association of Official Analytical Chemists, where applicable.

1.4 SUBMITTALS

A. Soil Analysis: For each soil type, Planting Soil & Lawn Soil, furnish soil analysis and a written report by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; deleterious material; pH; and mineral and plant-nutrient content of the soil.

1. Testing methods and written recommendations shall comply with USDA's Handbook No. 60.
2. Comply with the soil-testing laboratory recommendations for soil sampling, with depth, location, and number of samples to be taken. A minimum of two representative samples shall be taken from varied locations for each soil to be used or amended for planting purposes.
3. Report suitability of tested soil for turf growth.

    a. Based on the test results, state recommendations for soil treatments and soil amendments to be incorporated. State recommendations in weight per 1000 sq. ft. (92.9 sq. m) or volume per cu. yd. (0.76 cu. m) for nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory planting soil suitable for healthy, viable plants.
    b. Report presence of problem salts, minerals, or heavy metals, including aluminum, arsenic, barium, cadmium, chromium, cobalt, lead, lithium, and vanadium. If such problem materials are present, provide additional recommendations for corrective action.

B. Samples: Lawn/Turf Planting Soil to be provided as samples in the following samples sizes. Samples to be accompanied by test results. All soil and amendment testing costs to be paid by Contractor.
1. Two (2) samples to be one (1) quart in separate packages for distribution with testing results as follows:
    a. Sent to project Landscape Architect for review and approval.
    b. Retained on site for comparison to bulk materials provided

C. Soils Testing Laboratory: Information regarding the testing agency qualifications for testing of soils. Information to be reviewed for ability to perform types and testing of soils as outlined in these specifications.

1.5 QUALITY ASSURANCE

A. Soil and Soil Amendments Testing Agency Qualifications: An independent testing agency qualified according to the ASTM E 329 testing required, to conduct soil amendment materials testing, to include ASTM-D698-91 Proctor test as documented according to ASTM D 3740 and ASTM E 548.
1. The testing agency shall be experienced in the soil testing protocols of the United States

Golf Association, Greens Section, and specialize in the testing of turf and landscape soil. The testing agency shall be approved by the Landscape Architect.

2. Testing methods shall comply with the USDA standard format for testing results computation in English measure units.

2. Testing of Approved soil shall be performed by either:

CLC Labs	or Hummel & Co., Inc
325 Venture Drive	35 King Street
Westerville, Ohio 43081	Trumansburg, NY 14886
614 888 1663	607 387 5694

or other testing agency approved in advance by the Landscape Architect.
Note: Soil Testing labs require several weeks to provide test results. Contractor to anticipate (2) two rounds of testing to satisfy specification requirements.

PART 2 - PRODUCTS

2.1 LAWN/TURF AND PLANTING SOIL

A. Lawn / Planting Soil: Soil for turf and planting areas will be imported topsoil or manufactured topsoil from off-site sources. Obtain topsoil displaced from naturally well-drained construction or mining sites where topsoil occurs at least 4 inches (100 mm) deep; do not obtain from agricultural land, bogs or marshes.

1. Additional Properties of Imported Topsoil or Manufactured Topsoil: Screened and free of stones 1 inch (25 mm) or larger in any dimension; free of roots, plants, sod, clods, clay lumps, pockets of coarse sand, paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, building debris, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, acid, and other extraneous materials harmful to plant growth; free of obnoxious weeds and invasive plants including quackgrass, Johnsongrass, poison ivy, nutsedge, nimblewill, Canada thistle, bindweed, bentgrass, wild garlic, ground ivy, perennial sorrel, and bromegrass; not infested with nematodes, grubs, other pests, pest eggs, or other undesirable organisms and disease-causing plant pathogens; friable and with sufficient structure to give good tilth and aeration. Continuous, air-filled, pore-space content on a volume/volume basis shall be at least 15 percent when moisture is present at field capacity. Soil shall have a field capacity of at least 15 percent on a dry weight basis.
2. Mix imported topsoil or manufactured topsoil with the following soil amendments based on soil testing recommendations and to achieve the following characteristics.
    a. Nutrients, N, P, K Mg, and Ca: at normal ranges for lawns and planting specified.
    b. Soluble salts: less than 4 mmho/cm
    c. Percent organic materials: to reach 8-10% Humus by volume
    d. PH: adjusted to be between 6.0 and 7.0
    e. CEC-cation exchange capacity: above 8
    f. Soil texture - % Particle sizes with total gravel, sand, silt and clay classifications as follows for sandy loam soil with the following approximate mineral soil distribution: 60% Overall sand and gravel in the approximate percentages of

particle sizes to include 5-10% Gravel, 55-60% Coarse to medium sand, 10-15% Fine sand, 5-10% Very fine sand -10% Silt - 20% Clay

g. Bulk Density: between 1.3 and 1.45 mg/m^3 with sample compacted to 80% of maximum dry density.

h. Infiltration/percolation rate: 2 inches per hour or greater with sample compacted to 80% of maximum dry density

2.2 SOIL AMENDMENTS

A. Blend of sands and gravels or selected sizes based on test results of on-site soils and off-site soils proposed for use as approved soil.

B. Humus added in composted pine bark fines material shall size 0.1 mm – 15, have a dark brown to black color and be free of wood particles.

C. PH modifying materials to decrease or increase pH.

D. Upon the approval of the soil amendments, blend soil amendments in ratios as directed in sample of approved soil. Resulting mix of soil and amendments should yield approved soil. Clearly identify sample batches of mixed soil by the ratio of each component in the mix. Submit 1 gallon sample for review and approval.

E. Upon approval of the amended soil the soil required for the Work shall be prepared and homogeneously blended at the approved soil mixing location utilizing soil blending equipment sufficient to prepare material that is consistent in its component ratio, well blended and screened of clods, sticks and other debris. Any material required to adjust soil nutrient or pH levels shall be added to the soil at the time of final soil mixing.

F. Soils or soil amendments shall not be harvested, disturbed, transported, mixed or installed when the soil moisture content is such that the soil is not friable. Soils are considered friable when they are dry enough to easily crumble when dug, but not so dry that clods cannot be easily broken, and not so wet that soil leaves mud on the hand when squeezed.

PART 3 - EXECUTION

3.1 PREPARATION

A. The Contractor and Landscape Contractor are to review site conditions with Owner and Landscape Architect for compliance with contract documents and preparedness for acceptance of Lawn/Turf and Planting soils. The Landscape Contractor is to identify and put in writing conditions of non-preparedness and or non- acceptance which need to be rectified prior to the Landscape portion of this work.

B. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by storage and installation of lawn/planting soils.

C. Determine lawn/turf and planting soil (soil) storage areas on site during soil placement operations and protect stored soil from contamination of soils by or as the result of other construction operations throughout process of soil installation.

3.2 STORAGE OF SOIL MATERIALS

A. Stockpile and store soil, in contained areas. Obtain materials directly in advance of need with sufficient time for inspection and testing and amendment of bulk materials to conform to specifications. Place, grade, and shape stockpiles to drain surface water.

B. Protect all soil stockpiles, soil amendments and finished approved soils from damage, erosion and separation of mixes by water. Cover all stockpiles with non-woven filter cloth. Do not cover soils with plastic. See Earth Moving for stockpiling instructions.

3.3 EXCAVATION, GENERAL

A. Excavation and preparation of site areas for lawn and planting operations is to be carried out by the General Contractor in preparation for lawn/turf planting soils placement operations by the Landscape Contractor. Preparation includes placement of soils to establish sub-grade elevations for receipt of Lawn/Planting soil as indicated on the contract documents.

B. Excavation for Lawn/turf and Planting Work: Excavation and filling to subgrade levels for lawn and planting operations is the responsibility of the General Contractor. The General Contractor is to Prepare subgrade and site areas as required to receive appropriate soils. Excavation includes removal of materials to receive the specified soil depth for each lawn and planting area. Excavate or fill to specified dimension to provide depth of lawn/turf and planting soils to specified depth below final grade to receive new turf/lawn or to final grade for shrub and groundcover planting beds.

1. Earth excavation includes removal of foreign materials, rock, debris, other objects that would obstruct installation of lawn/planting soils in areas as designated for lawn, planting areas and groundcover and other items indicated to be removed; together with soil, boulders, and other materials.
    a. All measurements to conform to profiles and areas shown on drawings for finial grades and spot elevations.

2. Establishing sub-grade for turf/lawn and planting to the following depths in preparation for contract work to be undertaken by the Landscape Contractor.
    a. Lawns/turf: Six (6) inches minimum for cleared area of seeding.
    b. Lawns/turf: Depth varies – provide topdressing to fill depressions, hollows and meet final grades as indicated on grading plans.
    c. Tree Planting: comply with detailed tree planting section on the drawings.

3.4 SUB GRADE PREPARATION APPROVAL

A. Subgrade is to be prepared and approved in advance of placement of soils.

B. General Contractor is to notify Landscape Contractor and Landscape Architect when subgrade is prepared for lawn/planting soil installation.

1. General Contractor is to provide notification of request for review at least ten (10) days in advance of requested date.

C. If Landscape Contractor and Landscape Architect determine that unsatisfactory subgrade conditions, soil or other materials are present, continue removal and replace with approved fill material or approved soil as directed to establish sub grade.

D. Place soil accordance with these specifications, details of contract drawings for areas of lawn, tree, shrub, groundcover planting and to establish final grades, and as directed by the Landscape Architect.

E. Do not place Soils or imported soils when planting within the flagged wetlands areas unless otherwise directed by the Landscape Architect.

3.5 LAWN/TURF and PLANTING SOIL SUB GRADE PREPARATION AND SOIL FILL

A. Subgrade is to be prepared and approved in advance of placement of lawn/turf and planting soils.

1. Preparation of sub-grade includes removal of any debris or undesired materials which may have accumulated in advance of soil placement.

2. Preparation of sub-grade includes and is not limited to de-compaction and scarification of the existing sub-grade soils for receipt of lawn/planting soils.

B. Place lawn/turf and planting soil accordance with these specifications, details of contract drawings for areas of lawn, tree, shrub, groundcover planting and to establish final grades, and as directed by the Landscape Architect.

C. Do not place lawn/planting soils when unsatisfactory conditions are present or unless otherwise directed by the Landscape Architect.

3.6 SOIL MOISTURE CONTROL

A. Uniformly moisten approved soil layer before compaction to within 2 percent of optimum moisture content.

1. Do not place soil material if soil is excessively wet / muddy, frozen, or contains frost or ice.
2. Grading, compacting and handling of all subgrade and soil material shall occur only at times when the soil is friable. Soils are considered friable when they are dry enough to

easily crumble when dug, but not so dry that clods cannot be easily broken, and not so wet that soil leaves mud on the hand when squeezed. Suspend operations during and after any rain until such time as the subgrade or Soil material dries sufficiently to become friable.

3.7 PROTECTION

A. Protecting Graded Areas: Protect newly installed soils from physical disgorging, freezing, erosion and contamination from other site materials or use of site by other trades. Keep free of trash and debris.

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

1. Remove and replace material to depth as directed by Landscape Architect and reshape and secure.

C. Where settling or dislodgment 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.

3.8 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Transport surplus satisfactory soil to designated storage areas on Owner's property. Stockpile or spread soil as directed by Landscape Architect. Remove waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Owner's property.

END OF SECTION 32 9100

SECTION 32 9200 – TURF AND GRASSES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:
   1. Seeding.
   2. Hydroseeding.
   3. Turf renovation.
   4. Erosion-control material(s) for seeded lawns.

B. Related Sections:

   1. Division 31 Section "Site Clearing" for topsoil stripping and stockpiling.
   2. Division 31 Section "Earth Moving" for excavation, filling and backfilling, and rough grading.
   3. Division 32 Section "Planting"

1.3 DEFINITIONS

A. Duff Layer: The surface layer of native topsoil that is composed of mostly decayed leaves, twigs, and detritus.

B. Finish Grade: Elevation of finished surface of planting soil.

C. Manufactured Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.

D. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.

E. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. These include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.

F. Planting Soil: Imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth as specified in the soils specification division 32.

G. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or top surface of a fill or backfill before planting soil is placed.

H. Subsoil: All soil beneath the topsoil layer of the soil profile, typified by the lack of organic matter and soil organisms.

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

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

1. Pesticides and Herbicides: Include product label and manufacturer's application instructions specific to this Project.

1.5 INFORMATIONAL SUBMITTALS

A. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.

B. Qualification Data: For qualified landscape Installer.

C. Product Certificates: from manufacturer.

D. Maintenance Instructions: Recommended procedures to be established by Owner for maintenance of turf and meadows during a calendar year. Submit before expiration of required initial maintenance periods.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: A qualified landscape Installer whose work has resulted in successful turf and meadow establishment.

1. Professional Membership: Installer shall be a member in good standing of either the Professional Landcare Network or the American Nursery and Landscape Association.
2. Experience: Five years' experience in turf installation in addition to requirements in Division 01 Section "Quality Requirements."
3. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
4. Personnel Certifications: Installer's personnel assigned to the Work shall have certification in the following categories from the Professional Landcare Network:
   a. Certified Turfgrass Professional, designated CTP.

5. Maintenance Proximity: Not more than one hours' normal travel time from Installer's place of business to Project site.
6. Pesticide Applicator: State licensed, commercial.

B. Pre-installation Conference: Conduct conference at Project site to review site preparation, seeding and erosion control procedures.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws, as applicable.

B. Bulk Materials:

1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
3. Accompany each delivery of bulk fertilizers**,** lime, and soil amendments with appropriate certificates.

1.8 PROJECT CONDITIONS

A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of Substantial Completion.

1. Spring Planting: Mid April through Mid June
2. Fall Planting: Late August through end of September

B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

1.9 MAINTENANCE SERVICE

A. Initial Turf Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after each area is planted and continue until acceptable turf is established but for not less than the following periods:

1. Seeded Turf: 60 days from date of planting completion to Substantial Completion

a. When initial maintenance period has not elapsed before end of planting season, or if turf is not fully established, continue maintenance during next planting season.

PART 2 - PRODUCTS

2.1 SEED: MOWN TURF

A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances.

B. Seed Species: State-certified seed of grass species as follows:

C. Seed Species Mix: Seed of grass species as follows, with not less than **95** percent germination, not less than **85** percent pure seed, and not more than **0.5** percent weed seed:
1. Sun and Partial Shade: Proportioned by weight as follows:

    a. 10 percent Kentucky bluegrass (Poa pratensis).
    b. 75 percent Creeping fescue (Festuca variety).
    c. 15 percent perennial ryegrass (Lolium perenne).

2.2 SEED: NO-MOW TURF

A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances.

B. Seed Species: State-certified seed of grass species as follows:

C. Seed Species Mix: See species mix as identified on the planting plan drawings L-3.1

2.3 FERTILIZERS

A. Bonemeal: Commercial, raw or steamed, finely ground; a minimum of 4 percent nitrogen and 10 percent phosphoric acid.

B. Superphosphate: Commercial, phosphate mixture, soluble; a minimum of 20 percent available phosphoric acid.

C. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:

1. Composition: 1 lb/1000 sq. ft. (0.45 kg/92.9 sq. m) of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.
2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

D. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

1. Composition: 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.
2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

2.4 PLANTING SOILS

A. Planting Soil: See Division 32 Section 32 9100 Soils for soil requirements and testing.

2.5 MULCHES

A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.

B. Fiber Mulch: Biodegradable, dyed-wood, cellulose-fiber mulch; nontoxic and free of plant-growth or germination inhibitors; with a maximum moisture content of 15 percent and a pH range of 4.5 to 6.5.

C. Nonasphaltic Tackifier: Colloidal tackifier recommended by fiber-mulch manufacturer for slurry application; nontoxic and free of plant-growth or germination inhibitors.

2.6 PESTICIDES

A. General: Pesticide, registered and approved by EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.

B. Pre-Emergent Herbicide (Selective and Non-Selective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.

C. Post-Emergent Herbicide (Selective and Non-Selective): Effective for controlling weed growth that has already germinated.

2.7 EROSION-CONTROL MATERIALS

A. Erosion-Control Blankets: Biodegradable wood excelsior, straw, or coconut-fiber mat enclosed in a photodegradable plastic mesh. Include manufacturer's recommended steel wire staples, 6 inches (150 mm) long.

1. Products: Subject to compliance with requirements, provide one of the following:

    a. Invisible Structures, Inc.; Slopetame 2.
    b. Presto Products Company, a business of Alcoa; Geoweb.
    c. Tenax Corporation - USA; Tenweb.
    d. Or approved equivalent.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to be planted for compliance with requirements and other conditions affecting installation and performance of the Work.

1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
2. Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
3. Uniformly moisten excessively dry soil that is not workable or which is dusty.

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

C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Architect and replace with new planting soil.

3.2 PREPARATION GENERAL

A. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations.

1. Protect adjacent and adjoining areas from hydroseeding and hydromulching overspray.
2. Protect grade stakes set by others until directed to remove them.

B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.3 TURF AREA PREPARATION

A. Limit turf finish grade and subgrade preparation to areas to be planted.

B. Existing Turf Areas to be Re-seeded.
1. Prepare areas to be reseeded by removal of existing turf by either chemical or physical means.
2. Inspect depth of topsoil to ensure sufficient thickness for support of mow or no-mow turf seeding.
    a. Review soil depth with Landscape Architect before proceeding with re-seeding operations. Acceptable thickness of soil without adding additional soil or modifying existing soils is 4 to 6 inches.
3. If the depth of acceptable soil is not sufficient, provide additional soil from acceptable materials stockpiled from walk excavation and grubbing operations.
    a. If acceptable material is not available, amend existing soils be adding compost and other organic materials as directed by the Landscape Architect

b. If acceptable soil is not available, imported soil may be used with acceptance of the Landscape Architect

4. Bring acceptable soils to finish grade in preparation for seeding operations.

C. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 6 inches (150 mm) Remove stones larger than 2 inches (50 mm) in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.

1. Spread planting soil to a depth of 6 inches (150 mm) but not less than required to meet finish grades after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.

a. Spread approximately 1/2 the thickness of planting soil over loosened subgrade. Mix thoroughly into top 2 inches (50 mm) of subgrade. Spread remainder of planting soil.

b. Hold finish grade ½ to ¾ inch below top of curb and edge of walks to allow to allow for turf growth and positive drainage from adjacent structures.

D. Unchanged Subgrades: If turf is to be planted in areas unaltered or undisturbed by excavating, grading, or surface-soil stripping operations, prepare surface soil as follows:

1. Remove existing grass, vegetation, and turf. Do not mix into surface soil.
2. Loosen surface soil to a depth of at least **6 inches (150 mm)**. Apply soil amendments and fertilizers according to planting soil mix proportions and mix thoroughly into top **4 inches (100 mm)**of soil. Till soil to a homogeneous mixture of fine texture.

a. Apply fertilizer directly to surface soil before loosening.

3. Remove stones larger than [**1-1/2 inches (38 mm)** in any dimension and sticks, roots, trash, and other extraneous matter.
4. Legally dispose of waste material, including grass, vegetation, and turf, off Owner's property.

E. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch (13 mm) of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted in the immediate future.

a. Hold finish grade ½ to ¾ inch below top of curb and edge of walks to allow to allow for turf growth and positive drainage from adjacent structures.

F. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

G. Before planting, obtain Landscape Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.4 SEEDING

A. Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph (8 km/h). Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.

1. Do not use wet seed or seed that is moldy or otherwise damaged.
2. Do not seed against existing trees. Limit extent of seed to outside edge of planting saucer.

B. Rake seed lightly into top 1/8 inch (3 mm) of soil, roll lightly, and water with fine spray.

C. Protect seeded areas with slopes exceeding 1:3 with erosion-control fiber mesh installed and stapled according to manufacturer's written instructions.

D. Protect seeded areas with slopes not exceeding 1:6 by spreading straw mulch. Spread uniformly at a minimum rate of 2.5 tons/acre (52 kg/92.9 sq. m) to form a continuous blanket in loose thickness over seeded areas. Spread by hand, blower, or other suitable equipment.

1. Anchor straw mulch by crimping into soil with suitable mechanical equipment.
2. Bond straw mulch by spraying with asphalt emulsion at a rate of 10 to 13 gal./1000 sq. ft. (38 to 49 L/92.9 sq. m) Take precautions to prevent damage or staining of structures or other plantings adjacent to mulched areas. Immediately clean damaged or stained areas.

3.5 HYDROSEEDING

A. Hydroseeding: Mix specified seed, fertilizer, and fiber mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.

1. Mix slurry with fiber-mulch manufacturer's recommended tackifier.
2. Apply slurry uniformly to all areas to be seeded in a one-step process. Apply slurry at a rate so that mulch component is deposited at not less than 1500-lb/acre (15.6-kg/92.9 sq. m) dry weight, and seed component is deposited at not less than the specified seed-sowing rate.

3. Apply slurry uniformly to all areas to be seeded in a two-step process. Apply first slurry coat at a rate so that mulch component is deposited at not less than 500-lb/acre (5.2-kg/92.9 sq. m) dry weight, and seed component is deposited at not less than the specified seed-sowing rate. Apply slurry cover coat of fiber mulch (hydromulching) at a rate of 1000 lb/acre (10.4 kg/92.9 sq. m).

3.6 TURF MAINTENANCE

A. Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas and re-mulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.

1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
2. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement.
3. Apply treatments as required to keep turf and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.

B. Watering: Install and maintain temporary piping, hoses, and turf-watering equipment to convey water from sources and to keep turf uniformly moist to a depth of 4 inches (100 mm).

1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
2. Water turf with fine spray at a minimum rate of 1 inch (25 mm) per week unless rainfall precipitation is adequate.

C. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than 1/3 of grass height. Remove no more than 1/3 of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowing to maintain the following grass height:
1. Mow to a height of 2 to 2 1/5 inches (50 to 63 mm).

D. Turf Postfertilization: Apply fertilizer after initial mowing and when grass is dry.

1. Use fertilizer that will provide actual nitrogen of at least **1 lb/1000 sq. ft. (0.45 kg/92.9 sq. m)** to turf area.

3.7 SATISFACTORY TURF

A. Turf installations shall meet the following criteria as determined by Architect:

1. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. (0.92 sq. m) and bare spots not exceeding 5 by 5 inches (125 by 125 mm).

B. Use specified materials to reestablish turf that does not comply with requirements and continue maintenance until turf is satisfactory.

3.8 PESTICIDE APPLICATION

A. Apply pesticides and other chemical products and biological control agents in accordance with requirements of authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.

B. Post-Emergent Herbicides (Selective and Non-Selective): Apply only as necessary to treat already-germinated weeds and in accordance with manufacturer's written recommendations.

3.9 CLEANUP AND PROTECTION

A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

B. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.

C. Remove nondegradable erosion-control measures after grass establishment period.

END OF SECTION 32 9200

SECTION 32 9300 - PLANTING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Unloading and Storage of Deciduous Trees
   2. Planting of Deciduous Tree

1.2 DEFINITIONS

A. Backfill: The earth used to replace or the act of replacing earth in an excavation.

B. Ball and Burlap Trees: Exterior trees dug with large, firm, natural balls of earth in which they are grown. Tree balls must include no less than three major roots, distributed relatively evenly around the trunk, and a system of minor roots. Root forms with "J" shapes from growth restriction and circling or girdling roots from poor culture will be rejected. Root flares should be visible or within less than ½ inch of the top surface of the ball. Trunks should be free of shipping or cultural damage, without visible wounds scars or nicks. Firm, wrapped ball size is to be equal to or above the diameter and depth recommended by ANSI Z60.1 for type and size of tree or shrub required. Balls are to be wrapped, tied, rigidly supported by wire mesh or cage, and drum laced as recommended by ANSI Z60.1.

   1. Where trees are planted in formal rows or geometric patterns directly adjacent to walking paths, trees shall have the lowest branch at 6'-0" above the top of root ball. Trees with lower branching height to be approved by the Landscape Architect at the time of selection.

C. Finish Grade: Elevation of finished surface of planting soil. Position root flares of trees and shrubs at finish grade or above finish grade as directed.

D. Well-branched Specimen: Where three or more main stems arise from the ground from a single root mass to form a well-defined, vigorous flowering small tree or shrub. Where a deciduous tree branches above the root flares and shall be in a pattern of not less than 3 main stems that form a healthy tree crown typical of the genus and species. Main stems shall not cross or be configured such that they result in self – grafting into the future.

E. Well-crowned Deciduous tree: Single stem/trunk deciduous tree shall have one main stem from the ground to a well-defined, vigorous crown tree with an evenly distributed pattern of multiple branches to form a healthy tree crown typical of the genus and species.

F. Well-Rooted: A root mass on a deciduous tree that exhibits at least three main roots dispersed relatively evenly around the main trunk and a netted system of secondary and tertiary roots. This root system will result from adequate growth by transplanting or root pruning. Trees will be rejected with fewer that three main roots, "J" root forms, circling or girdling root forms.

G. Planting Soil: As defined in the section 32 9100 Soils specification for use in planting areas to the prescribed depth.

H. Subgrade: Surface or elevation of undisturbed subsoil remaining after completing excavation to required depth for planting in accordance with details.

I. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.

J. Organic Mulch: Bark mulch suitable as a top dressing for the soil area directly around individual trees and shrubs, and the soil area of defined planting beds cover free from deleterious materials.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples for Verification: For each of the following:

1. Organic mulch, in labeled plastic bags.
2. Fertilizer labels with composition and application instructions and fully-labeled, sealed sample bags for project use.

C. Qualification Data: For qualified landscape installer.

D. Product Certificates: For each type of manufactured product, from manufacturer, and complying with the following:

1. Manufacturer's certified analysis for standard products.

E. Material Test Reports: For existing soil and imported topsoil.

1. See Specifications Section 32 9100 Soils for testing requirements.

F. Planting Schedule: Indicating anticipated planting dates for exterior plants.

G. Maintenance Instructions: Recommended procedures to be followed for maintenance of exterior trees during the workmanship guarantee period of 12 months.

H. Warranty: Written warranty for guarantee period with all terms and conditions.
1. The Contractor shall install trees meeting and exceeding the ANSI Standards for handling and planting of trees, including recommended tree planting guidance provided by Elhannon Nursery, the grower, to establish the optimum growth condition for the newly planted trees.
2. Trees and root balls damaged during the handling, unloading, improper storage and planting procedures shall be warranted by this contractor against failure for one year.
    a. Trees deemed as at risk shall be documented by the Contractor and Landscape Architect and monitored for a twelve-month period from planting.
3. Tree and root balls damaged beyond reasonable recovery by and not limited to: falling from the trailer bed or lifting equipment, strap breakage, chain slippage, etc that results in

breakage or failure of the rootball or damage to the bark and branches causing disfiguration of the trees, shall be rejected by the Landscape Architect.

a. The contractor shall provide financial compensation at tree cost plus shipping cost or replacement of the damaged tree from the same grower and accepted by the Landscape Architect.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful establishment of exterior plants.

1. Installer's Field Supervision: Require installer to maintain an experienced full-time supervisor on Project site when planting is in progress.

2. Installer to provide not less than 3 project references for work of similar scope including coordination of delivery, handling and planting of trees 5 inches in caliper and greater. Installer to indicate:

a. Project Name and Location
b. Project Date
c. Project Value
d. Project Description (100 words +/-) & Select Photos
e. Project Client Contact

B. Soil-Testing Laboratory Qualifications: An independent laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.

1. See Specification Section 32 9100 Soils for Soil Testing Lab Requirements.

C. Topsoil Analysis: Furnish soil analysis by a qualified soil-testing laboratory.

1. See Specification Section 32 9100 Soils for testing requirements.

D. Preinstallation Conference: Conduct conference at Project site

1. Contractor is to provide preliminary staking of the trees on site based on the contract document information and review with the Landscape Architect.
   a. The contractor shall use Wood surveyor stakes not smaller than 1 inch square, 36 inches high.
2. The contractor shall arrange to review tree locations on site with the Landscape Architect providing a minimum of one staff member to assist in modifying and adjusting stake locations for a period of not less than one half day on site. In advance of scheduled plating operations.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws if applicable.

B. Deliver exterior plants freshly dug or properly stored and water after digging.

C. Do not prune trees and shrubs before delivery. Protect bark, branches, and root systems from sun scald, drying, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of exterior plants during delivery. Do not drop exterior plants during delivery and handling.

D. Handle planting stock by root ball, not trunks or branches.

E. Deliver exterior plants after preparations for planting have been completed and install without delay. Hold plants for no more than one week. If planting is delayed more than 6 hours after delivery, set exterior plants and trees in shade, protect from weather and mechanical damage, and keep root balls watered and moist.

1. Set balled stock directly on ground or on filter fabric in approved stockpile area of site.
2. Cover ball with soil, organic mulch, or other acceptable material.
3. Hold container-grown stock in containers in shade or covered with soil, organic mulch, or other acceptable material.
4. Water root systems of exterior plants stored on-site with a fine-mist spray. Water as often as necessary to maintain root systems in a moist condition.

F. Store bulbs, corms, and tubers in a dry place at 60 to 65 deg F (16 to 18 deg C) until planting.

1.6 PROJECT CONDITIONS

A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with maintenance periods to provide required maintenance from date of Substantial Completion.

1. Spring Planting: will be determined at the time of contract award

B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed according to manufacturer's written instructions and warranty requirements.

C. Coordination with Lawns and Turf Grasses: Plant trees and shrubs after finish grades are established and before planting lawns unless otherwise acceptable to Landscape Architect.

1. When planting trees and shrubs after lawns, protect lawn and turf areas from damage during planting operations. Promptly repair damage caused by planting operations.

D. Field Measurements: Verify actual grade elevations, service and utility locations, irrigation system components, and dimensions of plantings and construction, contiguous with new plantings by field measurements before proceeding with planting work.

1.7 WARRANTY

A. Special Warranty: Installer's standard form in which Installer agrees to repair or replace plantings and accessories that fail in materials, workmanship, or growth within specified warranty period.

1. Failures include, but are not limited to, the following:
   a. Death and unsatisfactory growth, except for defects resulting from lack of adequate maintenance, neglect, abuse by Owner, or incidents that are beyond Contractor's control.
   b. Structural failures including plantings falling or blowing over.

2. Warranty Periods from Date of Substantial Completion:
   a. Trees: 12 Months from date of Substantial Completion.

3. Include the following remedial actions as a minimum:
   a. Remove dead exterior plants immediately. Replace immediately unless required to plant in the succeeding planting season.

PART 2 - PRODUCTS

2.1 PLANT MATERIAL

A. General: Coordinate shipping unloading, and storage of trees as purchased by the Planting Fields Foundation: Confirm nursery-grown trees complying with ANSI Z60.1, that are well-branched specimens, with healthy well rooted as defined. All plants are to be symmetrically shaped, fully branched, healthy, vigorous stock free of disease, insects, eggs, larvae, and defects such as misshapen or inadequate root systems, J roots, girdling roots, trunk damage, splits, wounds, bark abrasion and disfigurement.

1. Notify the Landscape Architect of any Trees with damaged, crooked, or multiple leaders; tight vertical branches where bark is squeezed between two branches or between branch and trunk ("included bark"); crossing trunks; cut-off limbs more than 3/4 inch (19 mm) in diameter; or with stem girdling roots will be rejected.
2. Trees that to not meet the approved ANSI Z60.1 criteria shall not be accepted or unloaded.

B. Root-Ball Depth: Furnish trees and shrubs with root balls measured from top of root ball, which shall begin at root flare according to ANSI Z60.1. Root flare shall be visible before planting**.**

C. If formal arrangements or consecutive order of trees or shrubs is shown, select stock for uniform height and spread, and number label to assure symmetry in planting

2.2 PLANTING SOIL

A. Planting Soil – Turf/Planting Soil (Approved Soil): See specification 32 9100 Soils for approved soil requirements for planting of trees and shrubs.

2.3 FERTILIZER

A. Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:

1. Plant-tone for deciduous plantings at manufacturer specified rates of application.
2. Roots micronutrient fertilizer for root recovery and growth.

2.4 MULCHES

A. Organic Mulch: Free from deleterious materials and suitable as a top dressing of trees and shrubs, consisting of one of the following:

1. Type: Pine bark chips (mini) ½" to 1- inch diameter.

2. Color: Natural color of material, no artificial or applied color will be acceptable

2.5 TREE STABILIZATION MATERIALS

A. Stakes and Guys to be used to stabilize trees at Landscape Architect's direction. Use the following:

1. Upright and Guy Stakes: Rough-sawn, sound, or new hardwood stakes free of knots, holes, cross grain, and other defects, 2-by-2-inch nominal (38-by-38-mm actual) by length indicated, pointed at one end, notched near top to hold flexible ties.
2. Flexible Ties: Soft belting or elastic webbing that will not scar bark of length required to reach stakes.
    a. Flex Strap™ Tree Ties, cut to length coil
    b. Or approved equivalent.
3. Flags: Standard surveyor's plastic flagging tape, white, 6 inches (150 mm) long.

2.6 PESTICIDES

A. General: Do not use pesticides or herbicides on site. Instead use mechanical or biological controls as integrated pest management. Plant material is to arrive on site free from damage by pests.

2.7 MISCELLANEOUS PRODUCTS

A. Antidesiccant: Water-insoluble emulsion, permeable moisture retarder, film forming, for trees and shrubs. Deliver in original, sealed, and fully labeled containers and mix according to manufacturer's written instructions.

B. Watering Bag: Slow release watering bags for new trees. 15 to 20 gallon capacity.

a. Upright or inner tube style Gatorbag

b. Treegator or approved equivalent.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to receive plants for compliance with requirements and conditions affecting installation and performance.

1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
2. Do not mix or place soils and soil amendments in frozen, wet, or muddy conditions.
3. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
4. Uniformly moisten excessively dry soil that is not workable and which is too dusty.

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

C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Landscape Architect and replace with new planting soil.

3.2 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities, and lawns and existing exterior plants from damage caused by planting operations.

B. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

C. Tree Staking:
1. Contractor is to provide preliminary staking of the trees on site based on the contract document information and review with the Landscape Architect.
   a. The contractor shall use Wood surveyor stakes not smaller than 1 inch square, 36 inches high.
2. The contractor shall arrange to review tree locations on site with the Landscape Architect providing a minimum of one staff member to assist in modifying and adjusting stake locations for a period of not less than one half day on site. In advance of scheduled plating operations.

D. Apply anti-desiccant to trees and shrubs using power spray to provide an adequate film over trunks (before wrapping), branches, stems, twigs, and foliage to protect during digging, handling, and transportation.

1. Apply anit-desiccant only if acceptable to the Landscape Architect

3.3 EXCAVATION FOR TREES

A. Planting Locations: Stake plant and bed locations on site. Secure approval of Landscape Architect of stake out locations prior to planting undertaking operations. See task 2.3 C, Tree Staking.

B. Planting Excavations for individual trees: Excavate square pits with sides flat or sloped outward to width 60 inches square. See tree planting detail drawing L-3,1

C. Planting Excavations for tree planted in formal arrangements and groups: Excavate tree planting areas to the dimensions and profile indicated on the contract drawings. Excavate bottom of than burlap ball depth but not less than 30 inches. Planting width to be not less than 60 inches wide where trench widths are not indicated on contract drawings.

D. Where excavated trench or tree pit is lower that the root ball bottom, apply a 4 inch layer of approved soil and machine rake into the existing subgrade, compact soils to 85%. Raise grade as required by applying approved soils in 6 inch lifts and compacting to 85% until proposed finish grade is reached.

E. Planting of Large Trees: Coordinate planting of trees over 3 inches with placement of soils. Ensure that trees will not settle below designed planting depth or lean in any direction.

F. Obstructions: Notify Landscape Architect if unexpected rock or obstructions detrimental to trees or shrubs are encountered in excavations.

1. Hardpan Layer: Drill 6-inch (150-mm) diameter holes, 24 inches (600 mm) apart, into free-draining strata or to a depth of 4 feet (1.25 m), whichever is less, and backfill with free-draining material.

G. Drainage: Notify Landscape Architect if subsoil conditions evidence unexpected water seepage or retention in tree or shrub pits.

H. Fill excavations with water and allow to percolate away before placing soil mix or trees and shrubs. Percolation must proceed at a rate of no less than 2 inches per hour.

3.4 TREE PLANTING

A. Before planting, verify that root flare is visible at top of root ball according to ANSI Z60.1. If root flare is not visible, remove soil in a level manner from the root ball to where the top-most root emerges from the trunk. After soil removal to expose the root flare, verify that root ball still meets size requirements.

B. Remove stem girdling roots and kinked roots. Remove injured roots by cutting cleanly; do not break.

C. Set ball and burlap stock plumb and in center of planting pit or trench with root flare **2 inches (50 mm)** above adjacent finish grades.

1. Use planting soil for backfill.
2. After placing some backfill around root ball to stabilize plant, carefully cut and remove burlap, rope, and wire baskets IN THEIR ENTIRETY from root balls. Remove pallets or base material, if any, before setting. Do not use planting stock if root ball is cracked or broken before or during planting operation.
3. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
4. Continue backfilling process. Water again after placing and tamping final layer of soil.

3.5 TREE PRUNING

A. No tree pruning is anticipated. If new tree or shrub is damaged during planting operations, consult with Landscape Architect for assessment and action required. Replacement of damaged material may be required.

B. Obtain approval from Landscape Architect prior to pruning.

3.6 TREE STABILIZATION

A. Trunk Stabilization: Stake all bare root trees, balled and burlaped trees shall not be staked unless otherwise directed by the Landscape Architect or if needed by field conditions. Provide trunk stabilization as follows and as indicated on contract documents:

1. Upright Staking and Tying: Stake trees of 2- through 5-inch (50- through 125-mm) caliper. Stake trees of less than 2-inch (50-mm) caliper only as required to prevent wind tip-out. Use a minimum of 3 stakes of length required to penetrate at least 18 inches (450 mm) below bottom of backfilled excavation and to extend at least 72 inches (1830 mm) one third of trunk height above grade. Set vertical stakes and space to avoid penetrating root balls or root masses. Space stakes equally around trees.

   a. Locate stakes in a direction to oppose prevailing winds

2. Support trees with bands of flexible ties at contact points with tree trunk. Allow enough slack to avoid rigid restraint of tree.
   a. Tree supports to be interlocked above the lowest durable branches so as not to separate and slip down the tree trunk. Install as per Manufacturers recommendations.

   b. Place tree flexible ties to allow for up to a 10 degree movement from vertical maximum. The objective is to not allow tree movement of more than 10 degrees, to aid in root development.

3.7 ORGANIC MULCHING

A. Mulch backfilled surfaces of plantings and other areas indicated to receive organic mulch. Provide mulch ring around trees in lawn areas, fully mulch areas of shrub planting and other areas not otherwise indicated to receive stone mulch.

1. Trim sharp, consistent bed or tree circle edges. Remove clods, grass, etc. Tamp soil to precise elevation over ball, entire planting surface and at edge. Firm and smooth all grades.

2. Place consistent 2” mulch layer over open soil to sharp edge of planting circle or bed. Apply 2-inch (50-mm) average thickness of organic mulch extending to the edge of the approved excavation. Taper mulch to nothing at the trunk or stems. Do not place mulch within 2 inches (50 mm) of trunks or stems.

3.8 PLANT MAINTENANCE

A. Maintain plantings by watering, weeding, fertilizing, mulching, restoring planting saucers, adjusting and repairing tree-stabilization devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings. Spray or treat as required to keep trees and shrubs free of insects and disease.

B. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.

C. Use integrated pest management practices to eliminate the use of pesticides. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.

3.9 CLEANUP AND PROTECTION

A. During planting, keep adjacent paving and construction clean and work area in an orderly condition.

B. Fine grade all disturbed lawn areas adjacent to tree and shrub plantings for smooth continuous surface. Seed grass in filled and disturbed lawn areas. Avoid over seeding into planted areas. Place seedless hay and commence watering regime.

C. Clean decomposed stone mulch of excess debris, reapply stone mulch where grade is altered or adversely affected by planting operations.

D. Protect exterior plants from damage due to landscape operations, operations by other contractors and trades, and others. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged plantings.

3.10 DISPOSAL

A. Disposal: Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION 32 9300

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New York State
Parks, Recreation and
Historic Preservation

GOVERNOR
KATHY HOCHUL

COMMISSIONER
ERIK KULLESEID

PLANTING FIELDS

LONG ISLAND CAPITAL DISTRICT
625 BELMONT AVENUE
WEST BABYLON, NY 11704

PLANTING FIELDS ARBORETUM ENTRY DRIVE: TREES, WALKS AND DRIVE REPAIR

1395 PLANTING FIELDS ROAD
OYSTER BAY, NEW YORK 11771

CONTRACT #: PFF 030623
PROJECT ID: PFF ENTRY 0306-2023
SUBMISSION: CONSTRUCTION BID SET

EXECUTIVE DEPUTY COMMISSIONER
TOM ALWORTH

DEPUTY COMMISSIONER, CAPITAL PROJECTS
JEFF MCDONALD, RLA

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VESNA HADZIBABIC, PE, LEED AP BD+C

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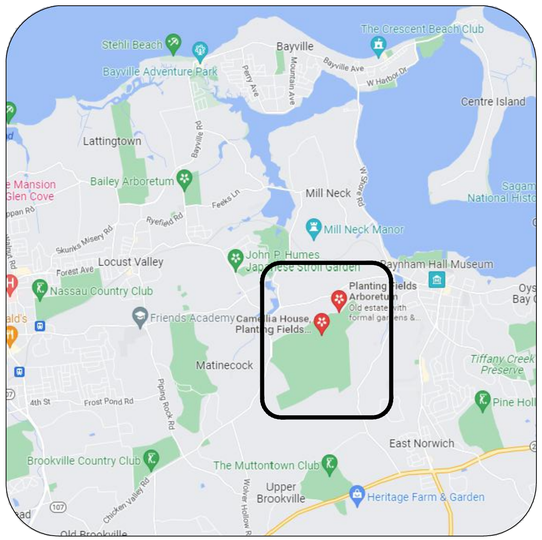


LOCATION PLAN
NOT TO SCALE

AERIAL PHOTO (2022)
NOT TO SCALE

DATE: 2/27/2023
GINA WOUTERS
PRESIDENT/CEO
PLANTING FIELDS FOUNDATION

DATE:
VESNA HADZIBABIC
CAPITAL DISTRICT MANAGER
LONG ISLAND STATE PARKS

DATE:
GEORGE GORMAN, JR.
REGIONAL DIRECTOR
LONG ISLAND STATE PARKS

T-001

SHEET
1 OF 18

PROJECT SCOPE SUMMARY

PROJECT WORK INCLUDES:

1. REMOVAL OF SELECTED TREES NEW WALKWAY CONSTRUCTION AND TREE PLANTING
2. SELECTIVE REMOVAL OF ASPHALT PAVING TO ESTABLISH CONSISTENT DRIVE WIDTH
3. CONSTRUCTION OF PEDESTRIAN WALKS ALONG THE WEST DRIVE PERIMETER AND AT THE EAST BETWEEN THE VISITOR PARKING LOT AND COE HALL ENTRANCE
4. PLANTING OF AN OAK TREE ALLEE TO THE EAST AND WEST SIDE OF THE ENTRY DRIVE
5. ESTABLISHMENT OF A NO-MOW TURF BELOW THE TREE ALLEE

GENERAL NOTES

1. THE CONTRACTOR SHALL INSPECT EXISTING CONDITIONS AT JOB SITE BEFORE SUBMITTING BID. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL CONDITIONS ON SITE WHETHER INDICATED ON DRAWINGS OR NOT.
2. THE CONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE SECTIONS OF THE CURRENT NEW YORK STATE BUILDING CODES AND ALL OTHER APPLICABLE CODES, ORDINANCES, AND STANDARDS.
3. THE CONTRACTOR SHALL SUPPLY ALL LABOR, TOOLS, MATERIALS AND EQUIPMENT NECESSARY TO COMPLETE THE WORK AS CALLED FOR ON THE DRAWINGS AND SPECIFICATIONS.
4. ALL MATERIALS AND EQUIPMENT NOTED ON DRAWINGS ARE NEW UNLESS INDICATED AS EXISTING.
5. OMISSIONS FROM THE DRAWINGS, SPECIFICATIONS, OR THE MISDESCRIPTION OF DETAILS OF WORK WHICH ARE MANIFESTLY NECESSARY TO CARRY OUT THE INTENT OF THE DRAWINGS AND SPECIFICATIONS, OR WHICH ARE CUSTOMARILY PERFORMED, SHALL NOT RELIEVE THE CONTRACTOR FROM PERFORMING SUCH WORK, BUT SHALL BE PERFORMED AS IF CORRECTLY SET FORTH AND DESCRIBED TO FURNISH A COMPLETE INSTALLATION IN ACCEPTABLE CONDITION TO THE AGENCY. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ALL TRADES AT THE SITE, WHETHER PART OF THIS CONTRACT OR UNDER A SEPARATE CONTRACT.
6. ALL DIMENSIONS SHOWN ON DRAWINGS SHALL BE VERIFIED IN FIELD BEFORE WORK PROGRESSES. DO NOT SCALE DRAWING.
7. ANY DISCREPANCIES NOTICED IN THE DRAWINGS OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT BEFORE PROCEEDING WITH CONSTRUCTION.
8. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD PRIOR TO COMMENCING WORK, AND SHALL REPORT ANY DISCREPANCIES BETWEEN DRAWINGS AND FIELD CONDITIONS TO THE NYS PARKS REPRESENTATIVE.
9. A WALK-THROUGH OF THE SITE WITH THE CONTRACTOR AND THE NYS PARKS REPRESENTATIVE IN ATTENDANCE SHALL BE PERFORMED BEFORE ANY WORK COMMENCES.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL CONDITIONS AND MATERIALS WITHIN THE PROPOSED CONSTRUCTION AREA. THE CONTRACTOR SHALL DESIGN AND INSTALL ADEQUATE SHORING AND BRACING FOR ALL STRUCTURAL OR REMOVAL TASKS. THE CONTRACTOR SHALL HAVE SOLE RESPONSIBILITY FOR ANY DAMAGE OR INJURIES CAUSED BY OR DURING THE EXECUTION OF THE WORK.
11. THE CONTRACTOR SHALL PROTECT ALL ADJACENT EXISTING ELEMENTS TO REMAIN.
12. ALL REMOVALS, INCIDENTAL TO AND NECESSARY, SHALL BE DISPOSED OF PROPERLY OFF THE PROJECT SITE. REMOVE EXISTING FEATURES IN THEIR ENTIRETY UNLESS OTHERWISE INDICATED. DO NOT ALLOW DEBRIS TO ACCUMULATE ON SITE. PROMPTLY AND LEGALLY DISPOSE OF DEMOLISHED MATERIALS AND TRASH OFF SITE. LITTER AND DEBRIS SHALL BE CLEANED UP FROM THE CONSTRUCTION SITE DAILY.
13. HAZARDOUS MATERIALS MAY BE ENCOUNTERED DURING CONSTRUCTION OPERATIONS, INCLUDING ASBESTOS AND LEAD. COMPLY WITH ALL APPLICABLE REGULATIONS, LAWS, AND ORDINANCES CONCERNING THE REMOVAL, HANDLING, AND PROTECTION AGAINST EXPOSURE OR ENVIRONMENTAL POLLUTION.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR WORK, FOR THE COORDINATION BETWEEN THEIR RESPECTIVE SUBCONTRACTORS AND THEIR PORTION OF WORK, AND ANY OF THE OWNER'S CONTRACTORS OR SUBCONTRACTORS.
15. THE CONTRACTOR IS RESPONSIBLE FOR MARK-OUT OF EXISTING UTILITIES PRIOR TO EXCAVATION.
16. ALL APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY SITE DISTURBANCE, INCLUDING DEMOLITIONS, AND THEY SHALL REMAIN IN PLACE UNTIL ALL DISTURBED AREAS ARE STABILIZED.
17. ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL CONFORM TO THE LATEST EDITION OF THE NYS STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL. INSTALL AND MAINTAIN ALL MEASURES TO EFFECTIVELY CONTAIN ALL SOIL MATERIAL WITHIN THE PROJECT LIMITS.
18. STOCKPILES SHALL BE PLACED WHERE EROSION AND SEDIMENTATION WILL NOT OCCUR.
19. UTILIZE DUST CONTROL AS NEEDED AND AS DIRECTED BY THE NYS PARKS REPRESENTATIVE.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND CONTROL OF TRAFFIC IN CONFORMANCE WITH NYS MUTCD STANDARDS
21. ANY VEHICLES OR EQUIPMENT TRAVELLING OUTSIDE THE CONTRACT LIMIT LINE MUST NOT TRACK SEDIMENT OR OTHER MATERIALS; THIS MAY REQUIRE THE WASHING OFF OF VEHICLES AND EQUIPMENT.
22. MOTOR VEHICLES AND MACHINERY SHALL NOT BE LEAKING OIL OR ANY OTHER FLUIDS.
23. THE CONTRACTOR SHALL GUARANTEE ALL WORK PERFORMED UNDER THIS CONTRACT FOR A PERIOD OF ONE YEAR AFTER COMPLETION AND FINAL ACCEPTANCE BY THE OWNER UNLESS OTHERWISE INDICATED IN CONTRACT DOCUMENTS.
24. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL INSPECTIONS AND FINAL APPROVALS FROM ALL GOVERNING AGENCIES, INCLUDING BUT NOT LIMITED TO THE CERTIFICATE OF OCCUPANCY AND PUBLIC ASSEMBLY PERMITS.
25. RESTORE TO THEIR ORIGINAL CONDITION ALL EXISTING PHYSICAL FEATURES DAMAGED BY THE UNAUTHORIZED ACT OR OMISSION OF THE CONTRACTOR. ORIGINAL CONDITION SHALL MEAN THE CONDITION IN WHICH THE FEATURE WAS FOUND AT THE START OF WORK.

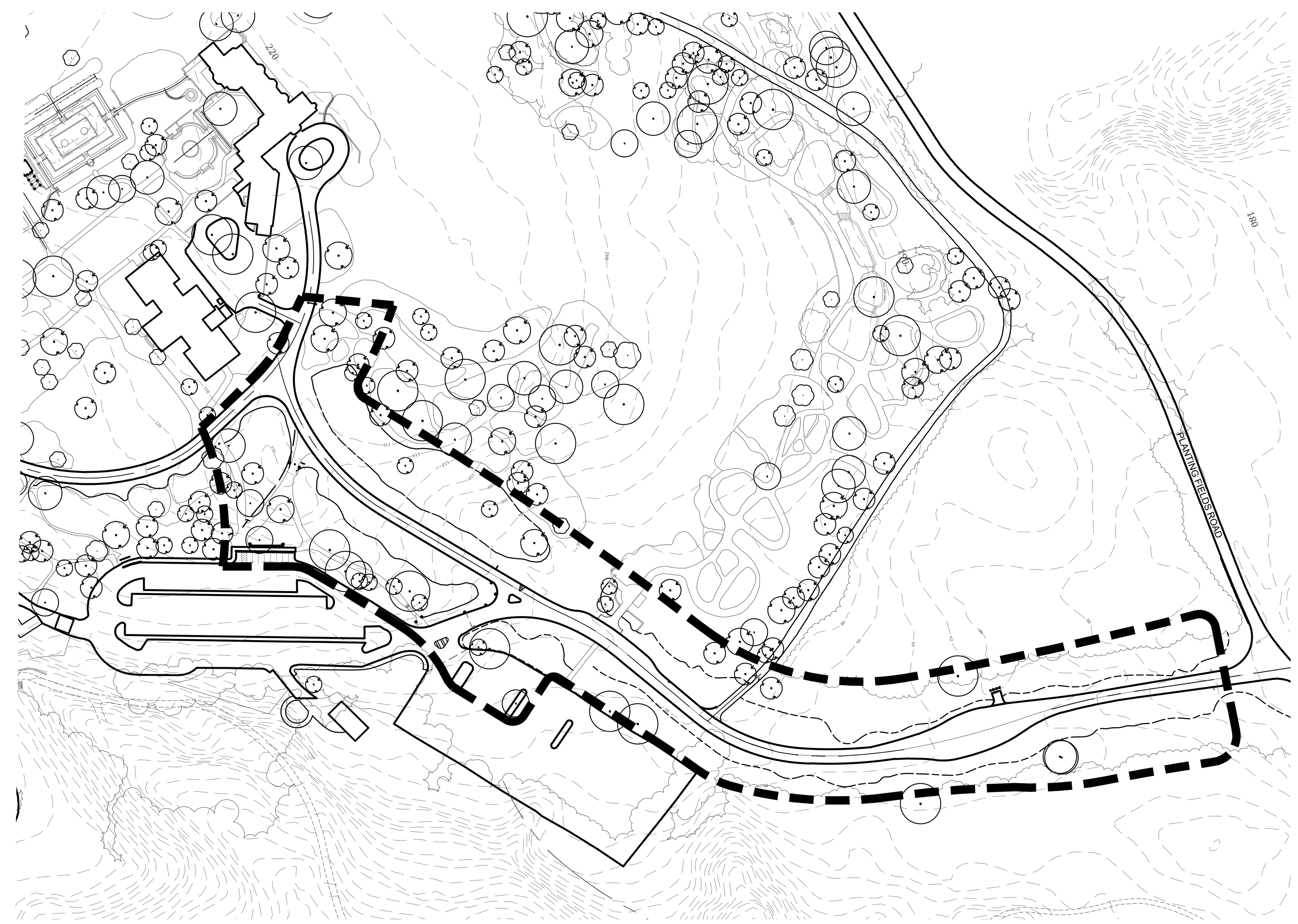
GENERAL DEMOLITION/ REMOVAL NOTES

1. THE GENERAL CONTRACTOR MUST CONDUCT A PRE-CONSTRUCTION MEETING AND SITE WALK THROUGH WITH THE NYS PARKS REPRESENTATIVE AND OWNER PRIOR TO COMMENCEMENT OF ANY DEMOLITION OR REMOVAL OF MATERIALS UNLESS OTHERWISE NOTIFIED. ITEMS TO BE REMOVED AND SALVAGED OR DISCARDED SHALL BE IDENTIFIED.
2. ALL SALVAGED MATERIALS, WHETHER RETAINED FOR REINSTALLATION OR REFERENCED DURING FABRICATION OF REPLACEMENTS, SHALL BE STORED AT A SECURE, DRY, AND WEATHER-PROTECTED FACILITY.
3. REFER TO THE CONTRACT SPECIFICATIONS FOR ADDITIONAL DEMOLITION AND WASTE REQUIREMENTS.
4. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ADJACENT PROPERTY AND ANY ITEMS THAT MAY BE ADVERSELY EFFECTED BY THE DEMOLITION EQUIPMENT, DEBRIS, AND DUST.
5. THE CONTRACTOR SHALL DEMOLISH AND REMOVE FROM PROJECT WORK AREA ALL ITEMS DESIGNATED IN THE CONTRACT DOCUMENTS AND AS DIRECTED BY THE NYS PARKS REPRESENTATIVE.
6. DISPOSE OF DEMOLITION MATERIAL IN A MANNER APPROVED BY NYS CODES AND PARKS MANAGEMENT IMMEDIATELY FOLLOWING DEMOLITION UNLESS OTHERWISE INSTRUCTED BY ARCHITECT.
7. ALL MATERIALS NOTED FOR DEMOLITION BECOME PROPERTY OF THE CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE. WHERE SUITABLE, REUSE MATERIALS WITH NYS PARKS REPRESENTATIVE'S PERMISSION.
8. ALL AREAS INDICATED FOR REMOVALS WITH ADJACENT SURFACES TO REMAIN SHALL BE "NEAT CUT".
9. ALL APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY SITE DISTURBANCE, AND SHALL REMAIN IN PLACE UNTIL ALL DISTURBED AREAS ARE STABALIZED.

CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL COORDINATE ALL OPERATIONS WITH THE NYS PARKS REPRESENTATIVE. THIS SHALL INCLUDE BUT NOT BE LIMITED TO AREAS FOR MATERIAL STORAGE, ACCESS TO AND FROM WORK AREA, TIMING AND SEQUENCE OF WORK, SPECIAL CONSIDERATIONS OF NOISY, DUSTY, OR VAPORED OPERATIONS, AND/OR UTILITY INTERRUPTIONS.
2. EXTREME CARE MUST BE TAKEN DURING ALTERATION AND NEW CONSTRUCTION SO AS NOT TO DAMAGE EXISTING INSTALLATIONS. IN CONNECTION TO OR ALTERING EXISTING STRUCTURE, THE CONTRACTOR SHALL SUPPLY BRACING, SHORING AND OTHER SUPPORTS FOR EXISTING MEMBERS AS REQUIRED TO ASSURE THEIR STRUCTURAL INTEGRITY & STABILITY. WHERE EXISTING FINISHES ARE BROKEN OR DAMAGED THEY SHALL BE RESTORED TO THEIR ORIGINAL STATE AFTER STRUCTURE IS IN PLACE.
3. THE CONTRACTOR SHALL PROPERLY SHORE, UNDERPIN, SHEET, BRACE, AND MAKE SAFE ALL FLOORS, SIDEWALKS, WALLS, FOOTING, FOUNDATIONS, EARTH CUTS, AND ADJACENT PROPERTY AS THE JOB CONDITIONS WARRANT.
4. THE CONTRACTOR SHALL MAKE NO DEVIATION FROM THE DRAWINGS WITHOUT WRITTEN APPROVAL OF THE NYS PARKS REPRESENTATIVE.
5. ALL PAVED WALKS, SURFACES, AND AREAWAYS WILL BE DRAINED ADEQUATELY WITHIN THE SITE.
6. ON SITE STORAGE OF ALL NEW CONSTRUCTION MATERIALS SHALL BE IN A DRY, SECURE LOCATION AS DIRECTED BY THE NYS PARKS REPRESENTATIVE.
7. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMPORARY ENCLOSURES OR FACILITIES FOR THE PROTECTION OF NEW WORK WHEN DEEMED NECESSARY BY THE RESIDENT ENGINEER AND SHALL REMOVE TEMPORARY FACILITIES WHEN NO LONGER REQUIRED.
8. THE CONTRACTOR SHALL KEEP THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIALS OF HIS WORK. UPON COMPLETION EACH WORK DAY, THE CONTRACTOR SHALL REMOVE ALL DEBRIS AND LEAVE THE AREA IN A "BROOM CLEAN" CONDITION.
9. ALL REMOVED MATERIAL AND DEBRIS SHALL BE LEGALLY DISPOSED AWAY FROM THE PREMISES.
10. AT THE CONCLUSION OF JOB, THE CONTRACTOR SHALL REMOVE CONSTRUCTION FENCE AND REPLACE ALL DAMAGED PAVING, LANDSCAPING, ETC. AT NO ADDITIONAL COST TO THE STATE.
11. MOTOR VEHICLES AND MACHINERY SHALL NOT BE LEAKING OIL OR ANY OTHER FLUIDS.
12. HERITAGE LANDSCAPES LLC IS THE ACTING OWNERS REPRESENTATIVE FOR THIS PROJECT WORK. REFERENCES TO ARCHITECT, NYS PARKS REPRESENTATIVE AND ENGINEER SHALL BE UNDERSTOOD AS THE LANDSCAPE ARCHITECT AS OWNER REPRESENTATIVE.

PLOT PLAN



PLOT PLAN
NOT TO SCALE

LIST OF DRAWINGS

DRAWING INDEX

ABBREVIATIONS

LF	LINEAR FEET
MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
NYS	NEW YORK STATE
OPRHP	OFFICE OF PARKS, RECREATION, AND HISTORIC PRESERVATION
RCA	RECYCLED CONCRETE AGGREGATE
TUON	TYPICAL UNLESS OTHERWISE NOTED
VIF	VERIFY IN FIELD
PFF	PLANTING FIELDS FOUNDATION

MATERIAL LEGEND

- EXT. DECIDUOUS TREE
- EXT. EVERGREEN TREE
- EXT. FLOWERING TREE
- TREE ALLEE
- REMOVE ASPHALT PAVING
- REMOVE GRAVEL PAVING/PATH
- REMOVE AND STOCKPILE COBBLESTONE CURB
- REMOVE CHAINLINK FENCE AND POST
- VEGETATION GRUBBING
- PROTECTION MATTING
- FULL DEPTH ASPHALT RECONSTRUCTION
- TURF REESTABLISHMENT
- EXT. BEDLINE
- EXT. CONTOUR
- FENCELINE
- SILT FENCE
- SILT SOCK
- TREE PROTECTION FENCING (SEE DETAIL 1/R1.1)
- CONSTRUCTION FENCING
- EXTENT OF NO-MOW MIX

New York State Parks, Recreation and Historic Preservation

Governor Kathy Hochul — Commissioner Erik Kulleseid

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PO BOX 321, CHARLOTTE, VERMONT 05445
34 WALL STREET, NORWALK, CONNECTICUT 06850

Contract No: PFF 030623

Project Title:
Planting Fields Entry Drive Trees, Walks and Drive Repair

Project Location:
Planting Fields Arboretum
1395 Planting Fields Road
Oyster Bay, New York 11771

REVISIONS

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1	Construction Bid Set	2/27/2023
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Design By: PV
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Approved By:
Date: 27 Feb. 2023

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REGISTERED LANDSCAPE ARCHITECT PATRICIA M. O'DONNELL STATE OF NEW YORK

Sheet Title:
GENERAL NOTES

Drawing Number:
G-001

Project Number: PFF ENTRY 0306-2023
Sheet: 2 OF 18

SOURCES
FLONHS, July 1918 Field Notes,
File: 06645-17_34350123045_o

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Date:
27 Feb. 2023

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Sheet Title:

EXISTING CONDITIONS PLAN

Drawing Number:

EC-1.1

Project Number: PFF ENTRY 0306-2023

Sheet: 3 OF 18

SEDIMENTATION CONTROL NOTES:

1. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW YORK STATE, AND WILL BE IN PLACE PRIOR TO ANY SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.

2. ALL GRADED OR DISTURBED AREAS INCLUDING SLOPES SHALL BE PROTECTED DURING CLEARING AND CONSTRUCTIONS IN ACCORDANCE WIT THE APPROVED EROSION AND SEDIMENT CONTROL PLAN UNTIL THEY ARE PERMANENTLY STABILIZED.

3. ALL SEDIMENT CONTROL PRACTICES AND MEASURES SHALL BE CONSTRUCTED, APPLIED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.

4. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED IN THE AMOUNT NECESSARY TO COMPLETE FINISHED GRADING OF ALL EXPOSED AREAS.

5. AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIAL.

6. AREAS WHICH ARE TO BE TOP-SOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF FOUR INCHES PRIOR TO PLACEMENT OF SOIL.

7. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION , SLIPPAGE SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDING , STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.

8. ALL FILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.

9. EXCEPT FOR APPROVED LANDFILLS, FILL MATERIAL SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD OR OTHER FOREIGN OR OTHER OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.

10. FROZEN MATERIALS OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED IN FILLS.

11. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.

12. ALL BENCHES SHALL BE KEPT FREE OF SEDIMENT DURING ALL PHASES O DEVELOPMENT.

13. SEEPS OR SPRING ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATIONS FOR SUBSURFACE DRAIN OR OTHER APPROVE METHOD.

14. ALL GRADED AREA SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISH GRADING

15. STOCKPILES, BORROW AREA AND SPIL AREAS SHLL BE SHOWN O THE PLANTS AND SHALL BE SUBJECT TO PROVISION OF THIS STANDARD SPECIFICATION.

16. ANY DISTURBED AREA THAT WILL BE LEFT EXPOSED FOR MORE THAN THIRTY (30) DAYS AND NOT SUBJECT TO CONSTRUCTION TRAFFIC SHALL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PROHIBITS TEMPORARY SEEDING, THE DISTURBED AREA WILL BE MULCHED WITH STRAW OR HAY AND TACKED IN.

17. IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING. ALL CRITICAL AREAS (STEEP SLOPES, SANDY SOILS, WET CONDITIONS) SUBJECT TO EROSION WILL RECEIVE A TEMPORARY SEEDING IN ACCORDANCE WITH NOTES HEREIN

18. PERMANENT SEEDING AND STABILIZATION TO BE IN ACCORDANCE WITH THE "STANDARDS FOR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION COVER". SPECIFIED RATES AND LOCATIONS SHALL BE ON THE APPROVED SOIL EROSION AND SEDIMENT CONTROL PLAN.

19. THE SITE SHALL AT ALL TIMES BE GRADED AND MAINTAINED SO THAT ALL STORM WATER RUNOFF IS DIVERTED TO SOIL EROSION AND SEDIMENT CONTROL FACILITIES.

20. ALL SEDIMENTATION STRUCTURES (SILT FENCE, INLET FILTERS, AND SEDIMENT BASINS WILL BE INSPECTED AND MAINTAINED DAILY.

21. STOCKPILES SHALL NOT BE LOCATED WITHIN 50' OF A FLOODPLAIN, SLOPE, DRAINAGE FACILITY, OR ROADWAY. ALL STOCKPILE BASES SHALL HAVE A SILT FENCE PROPERLY ENTRENCHED AT THE TOE OF SLOPE.

22. A STABILIZED CONSTRUCTION ACCESS WILL BE INSTALLED, WHENEVER AN EARTHEN ROAD INTERSECTS WITH A PAVED ROAD. SEE THE STABILIZED CONSTRUCTION ACCESS DETAIL AND CHART FOR DIMENSIONS.

23. PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.

24. BEFORE DISCHARGE POINTS BECOME OPERATIONAL, ALL STORM DRAINAGE OUTLETS WILL BE STABILIZED AS REQUIRED.

25. ALL SEDIMENT BASINS WILL BE CLEANED WHEN THE CAPACITY HAS BEEN REDUCED BY 50%. A CLEAN OUT ELEVATION WILL BE IDENTIFIED ON THE PLAN AND A MARKER INSTALLED ON THE SITE.

26. DURING CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE AND UPKEEP OF THE DRAINAGE STRUCTURES, VEGETATION COVER, AND ANY OTHER MEASURES IMPLEMENTED IN ACCORDANCE WITH THE SEDIMENTATION AND EROSION CONTROL PLAN.

27. ALL TREES OUTSIDE THE DISTURBANCE LIMIT INDICATED ON THE SUBJECT PLAN OR THOSE TREES WITHIN THE DISTURBANCE AREA WHICH ARE DESIGNATED TO REMAIN AFTER CONSTRUCTION ARE TO BE PROTECTED WITH TREE PROTECTION DEVICES. SEE THE TREE PROTECTION DETAIL ON THE LANDSCAPE REMOVALS AND PROTECTION DRWINGS.

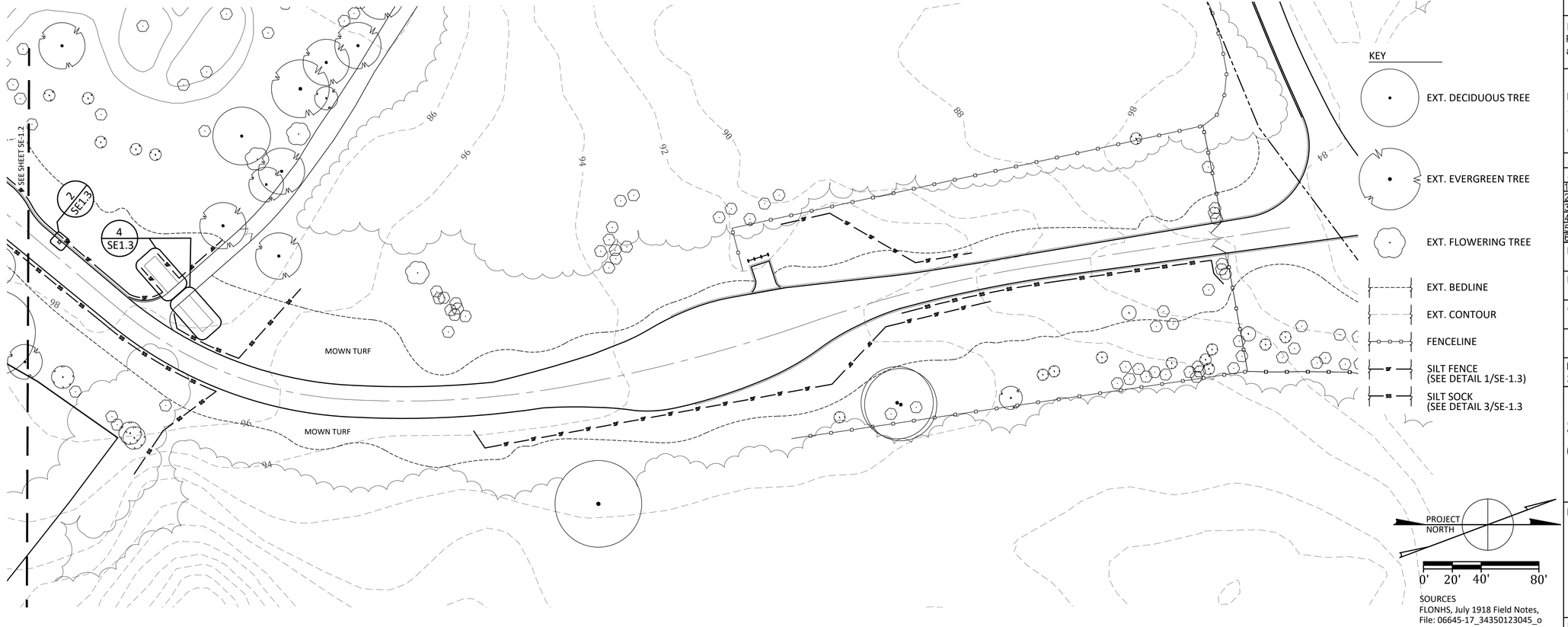
28. THE COUNTY MAY REQUEST ADDITIONAL MEASURES TO MINIMIZE ON SITE OR OFF SITE EROSION PROBLEMS DURING CONSTRUCTION. REQUESTED MEASURES SHALL BE COMPLIED WITH BY THE CONTRACTOR.

29. TOPSOIL STOCKPILE PROTECTION
A) APPLY GROUND LIMESTONE AT A RATE OF 90 LBS. PER 1000 SQ. FT.
B) APPLY FERTILIZER (10-20-10) AT A RATE 11 LBS. PER 1000 SQ. FT.
C) APPLY PERENNIAL RYEGRASS SEED AT 1 LB. PER 1000 SQ. FT. AND ANNUAL RYEGRASS AT 1 LB. PER 1000 SQ. FT.
D) MULCH STOCKPILE WITH STRAW OR HAY AT A RATE OF 90 LBS. PER 1000 SQ. FT.
E) APPLY A LIQUID MULCH BINDER OR TACK TO STRAW OR HAY MULCH
F) PROPERLY ENTRENCH A SILT FENCE AT THE BOTTOM OF THE STOCKPILE.

30. TEMPORARY STABILIZATION SPECIFICATIONS.
A) APPLY GROUND LIMESTONE AT A RATE OF 90 LBS. PER 1000 SQ. FT.
B) APPLY FERTILIZER (10-20-10) AT A RATE 11 LBS. PER 1000 SQ. FT.
C) APPLY PERENNIAL RYEGRASS SEED AT 1 LB. PER 1000 SQ. FT. AND ANNUAL RYEGRASS AT 1 LB. PER 1000 SQ. FT.
D) MULCH STOCKPILE WITH STRAW OR HAY AT A RATE OF 90 LBS. PER 1000 SQ. FT.
E) APPLY A LIQUID MULCH BINDER OR TACK TO STRAW OR HAY MULCH

31. PERMANENT STABILIZATION SPECIFICATIONS
A) APPLY TOPSOIL TO A MIN. DEPTH OF 6 INCHES TO FINAL GRADE
B) APPLY GROUND LIMESTONE AT A RATE OF 90 LBS. PER 1000 SQ. FT. AND WORK FOUR INCHES INTO SOIL
C) APPLY FERTILIZER (10-20-10) AT A RATE 11 LBS. PER 1000 SQ. FT.
D) APPLY HARD FESCUE SEED AT 2.7 LBS. PER 1000 SQ. FT. AND CREEPING RED FESCUE SEED AT 0.7 LBS. PER 1000 SQ. FT. AND PERENNIAL RYEGRASS SEED AT 0.25 LB. PER 1000 SQ. FT.
E) MULCH STOCKPILE WITH STRAW OR HAY AT A RATE OF 90 LBS. PER 1000 SQ. FT.
F) APPLY A LIQUID MULCH BINDER OR TACK TO STRAW OR HAY MULCH

*NOTE: NO WORK SHALL BEGIN UNTIL SOIL SEDIMENTATION AND EROSION CONTROL MEASURES ARE IN PLACE AND REVIEWED BY THE OWNER'S REPRESENTATIVE.



SOURCES
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REGISTERED LANDSCAPE ARCHITECT PAUL V. O'DONNELL 001296 STATE OF NEW YORK

Sheet Title:

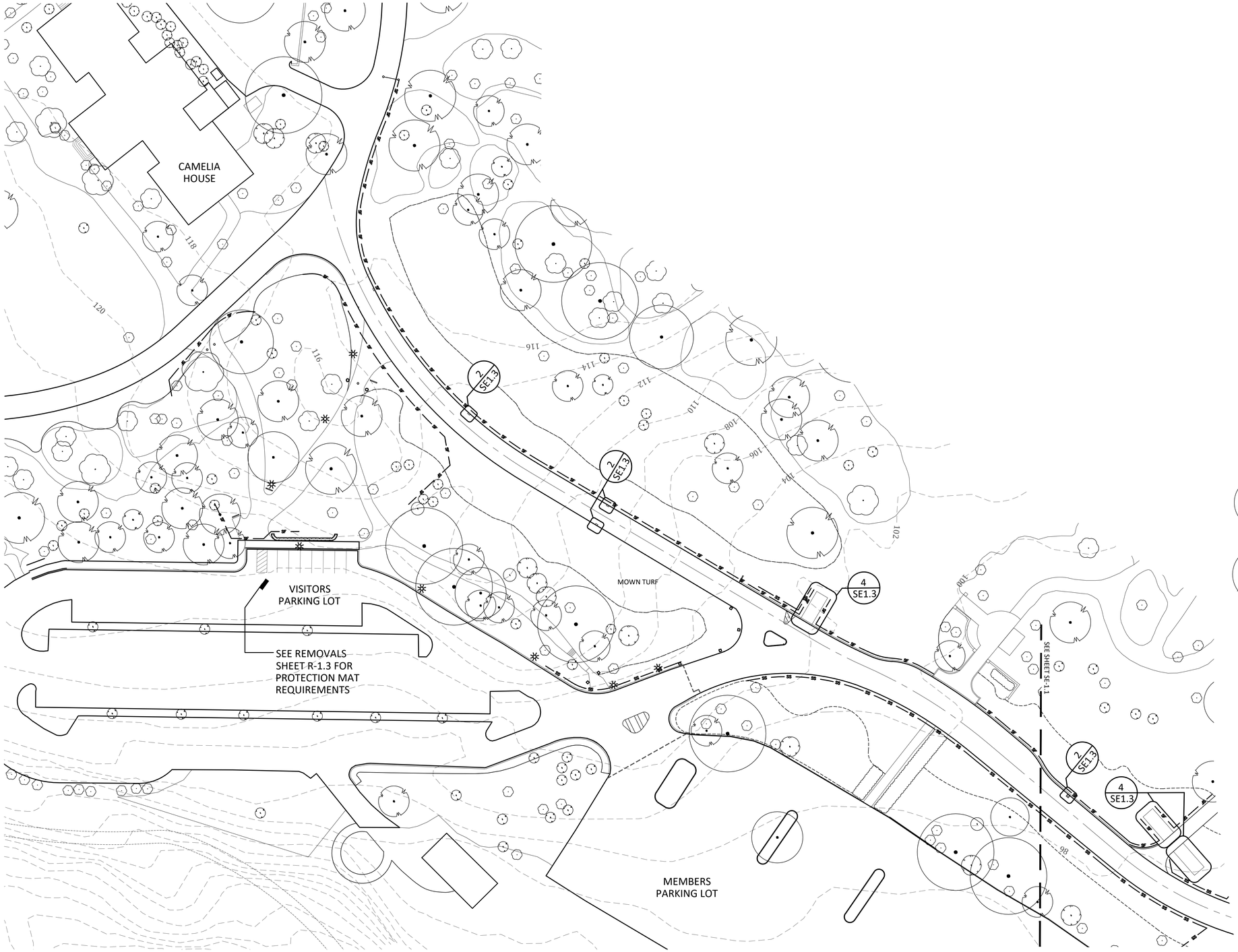
SEDIMENT AND EROSION CONTROL PLAN

Drawing Number:

SE-1.1

Project Number: PFF ENTRY 0306-2023

Sheet: 4 OF 18



KEY

- EXT. DECIDUOUS TREE
- EXT. EVERGREEN TREE
- EXT. FLOWERING TREE
- EXT. BEDLINE
- EXT. CONTOUR
- FENCELINE
- SILT FENCE (SEE DETAIL 1/SE-1.3)
- SILT SOCK (SEE DETAIL 3/SE-1.3

PROJECT NORTH

0' 20' 40' 80'

SOURCES
FLONHS, July 1918 Field Notes,
File: 06645-17_34350123045_o

New York State Parks, Recreation and Historic Preservation

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REGISTERED LANDSCAPE ARCHITECT CHRISTOPHER M. O'DONNELL 001290 STATE OF NEW YORK

Sheet Title:

SEDIMENT AND EROSION CONTROL PLAN

Drawing Number:

SE-1.2

Project Number: PFF ENTRY 0306-2023
Sheet: 5 OF 18

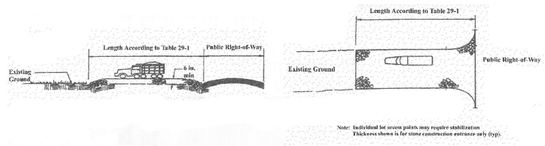


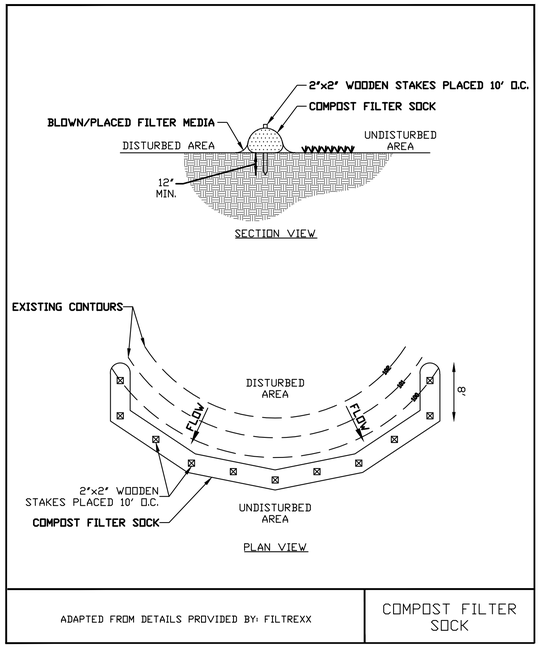
Table 29-1: Lengths of Construction Exits on Sloping Roadbeds

Percent Slope of Roadway	Length of Stone Required	
	Coarse Grained Soils	Fine Grained Soils
0 to 2%	50 ft	100 ft
2 to 5%	100 ft	200 ft
>5%	Entire surface stabilized with FABC base course [1]	

1. As prescribed by local ordinance or other governing authority.

NOTE:
STONE FOR APRON TO BE ±2 1/2" DIA. STONE FOR APRON TO BE REMOVED, SOIL DECOMPACTED AND REPAIRED AND RE-SEEDED FOLLOWING CONSTRUCTION OPERATIONS.

4 SE1.3 ANTI-TRACKING GRAVEL APRON
SCALE - NTS



CONSTRUCTION SPECIFICATIONS

1. BEFORE INSTALLING, CLEAR ALL OBSTRUCTIONS INCLUDING ROCKS, CLODS, AND DEBRIS GREATER THAN 1-INCH THAT MAY INTERFERE WITH PROPER FUNCTION OF THE FILTER SOCK.
2. FILL SOCK UNIFORMLY WITH COMPOST OR ALTERNATE FILTER MEDIA TO DESIRED LENGTH, WITH ENOUGH MATERIAL THAT THE SOCKS DO NOT DEFORM.
3. PLACE SOCKS ALONG CONTOURS, WITH THE ENDS TURNED UPSLOPE AT 30 TO 45 DEGREES FOR A LENGTH OF AT LEAST 5 FEET TO PREVENT RUNOFF BYPASS.
4. FOR UNTRENCHED INSTALLATION, BACKFILL MULCH OR COMPOST ON THE UPSTREAM SIDE OF THE SOCK AND TAMP TO PREVENT UNDERCUTTING AND PIPING.
5. ANCHORING MUST CONFORM TO THE FOLLOWING LIST: (a) MINIMUM 2-INCH SQUARE CROSS SECTION HARDWOOD; (b) DRIVEN AT LEAST 12 INCHES BELOW GRADE, OR 8 INCHES IF IN DENSE CLAY SOILS; (c) PROTRUDE ABOVE FILTER SOCKS AT LEAST 3 INCHES; (d) DRIVEN IN AT 45-DEGREE ANGLE UPSLOPE; (e) SPACED AT NO MORE THAN 4 FEET APART, OR 8 FEET APART IF THE FILTER SOCK IS ENTRENCHED 4 INCHES INTO THE GROUND.
6. DO NOT USE ENTRENCHED INSTALLATION ON FILTER SOCKS SMALLER THAN 12 INCHES IN DIAMETER.
7. FOR HARD SURFACE INSTALLATION, SUCH AS ON PAVEMENT, ANCHORING MAY BE NECESSARY WHERE STRAIGHT SECTIONS EXCEED 4 FEET. SEE DETAIL ABOVE, AND GREATER INSTRUCTION IN THE FILTER SOCK SPECIFICATION. WHEN NO ANCHORING IS USED, THE PRACTICE MUST BE CHECKED DAILY, REGARDLESS OF WHETHER RAINFALL OCCURS. ANCHORED INSTALLATION IS ALWAYS PREFERRED TO NON-ANCHORED INSTALLATION, IF POSSIBLE.
8. FOR AT-GRADE INLET 0"PROTECTION, FILTER SOCKS MUST COMPLETELY ENCLOSE THE DRAIN. IF USED AS CURB INLET PROTECTION, THE EFFECTIVE HEIGHT OF THE FILTER SOCK MUST NOT BE HIGHER THAN THE HEIGHT OF THE CURB; USE 8-INCH DIAMETER FILTER SOCK FOR STANDARD HIGHWAY APPLICATIONS.
9. IF MULTIPLE SECTIONS OF FILTER SOCK ARE NEEDED FOR A CONTINUOUS RUN, OVERLAP ENDS OF SEPARATE SECTIONS A MINIMUM OF 2 FEET AND STAKE ENDS.
10. TO REACH TALLER HEIGHTS, IT IS POSSIBLE TO STACK FILTER SOCKS. SEE SPECIFICATION FOR MORE DETAIL.
11. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO A DEPTH OF HALF THE EXPOSED HEIGHT OF SOCK AND REPLACE SOCK. REPLACE FILTER SOCK IF TORN. REINSTALL FILTER SOCK IF UNDERMINING OR DISLODGING OCCURS. REPLACE CLOGGED FILTER SOCKS.
12. FOR VEGETATED, PERMANENT OR SEMI-PERMANENT INSTALLATIONS, MAINTAIN THE PLANTS AS IS APPROPRIATE FOR THE SPECIES USED.

3 SE1.3 SILT SOCK
SCALE - NTS

REQUIREMENTS FOR SILT FENCE:

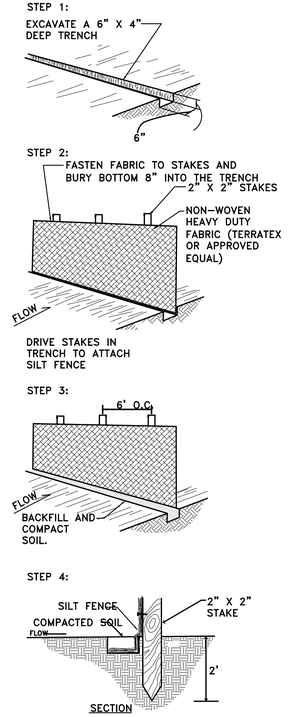
1. FENCE POSTS SHALL BE SPACED 8 FT. CENTER-TO-CENTER OR CLOSER. THEY SHALL EXTEND AT LEAST 2 FT. INTO THE GROUND AND AT LEAST 2 FT. ABOVE GROUND. POSTS SHALL BE CONSTRUCTED OF HARDWOOD WITH A MINIMUM DIAMETER THICKNESS OF 1-1/2 IN.

2. A METAL FENCE WITH 6 IN. OR SMALLER OPENINGS AND AT LEAST 2 FT. HIGH MAY BE UTILIZED, FASTENED TO THE FENCE POSTS, TO PROVIDE REINFORCEMENT AND SUPPORT TO THE GEOTEXTILE FABRIC WHERE SPACE FOR OTHER PRACTICES IS LIMITED AND HEAVY SEDIMENT LOADING IS EXPECTED.

3. A GEOTEXTILE FABRIC, RECOMMENDED FOR SUCH USE BY THE MANUFACTURER, SHALL BE BURIED AT LEAST 6 INCHES DEEP IN THE GROUND. THE FABRIC SHALL EXTEND AT LEAST 2 FT. ABOVE THE GROUND. THE FABRIC MUST BE SECURELY FASTENED TO THE POSTS USING A SYSTEM CONSISTING OF METAL FASTENERS (NAILS OF STAPLES) AND A HIGH STRENGTH REINFORCEMENT MATERIAL (NYLON WEBBING, GROMMETS, WASHERS, ETC.) PLACED BETWEEN THE FASTENER AND THE GEOTEXTILE FABRIC. THE FASTENING SYSTEM SHALL RESIST TEARING AWAY FROM THE POST. THE FABRIC SHALL INCORPORATE A DRAWSTRING IN THE TOP PORTION OF THE FENCE FOR ADDED STRENGTH.

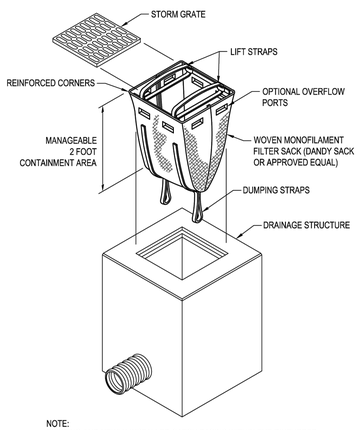
MAINTENANCE
1. INSPECT THE SILT FENCE PERIODICALLY AND AFTER EACH STORM EVENT.
2. IF FENCE FABRIC TEARS, TARTS TO DECOMPOSE, OR IN ANY WAY BECOMES INEFFECTIVE, REPLACE THE AFFECTED PORTION IMMEDIATELY.
3. REMOVE DEPOSITED SEDIMENT WHEN IT REACHES HALF THE HEIGHT OF THE FENCE AT ITS LOWEST POINT OR IS CAUSING THE FABRIC TO BULGE.
4. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEAN OUT.
5. AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE THE FENCE AND SEDIMENT DEPOSITS, BRING THE DISTURBED AREA TO GRADE, AND STABILIZE.

NOTE: WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED



1 SE1.3 SILT FENCE
SCALE - NTS

NOTE: CONTRACTOR TO SUBMIT FILTER SOCK INLET PROTECTION MEASURES FOR THE TWO INLET TYPES ON SITE FOR APPROVAL AND ACCEPTANCE



NOTE:
EXISTING AND NEWLY INSTALLED CATCH BASINS WITHIN THE DISTURBED TRIBUTARY AREA TO BE PROTECTED UNTIL THE SITE IS STABILIZED.

FILTER SACK INLET PROTECTION

2 SE1.3 CATCH BASIN PROTECTION
SCALE - NTS

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Sheet Title:
SEDIMENTATION AND EROSION CONTROL DETAILS

Drawing Number:
SE-1.3

Project Number: PFF ENTRY 0306-2023
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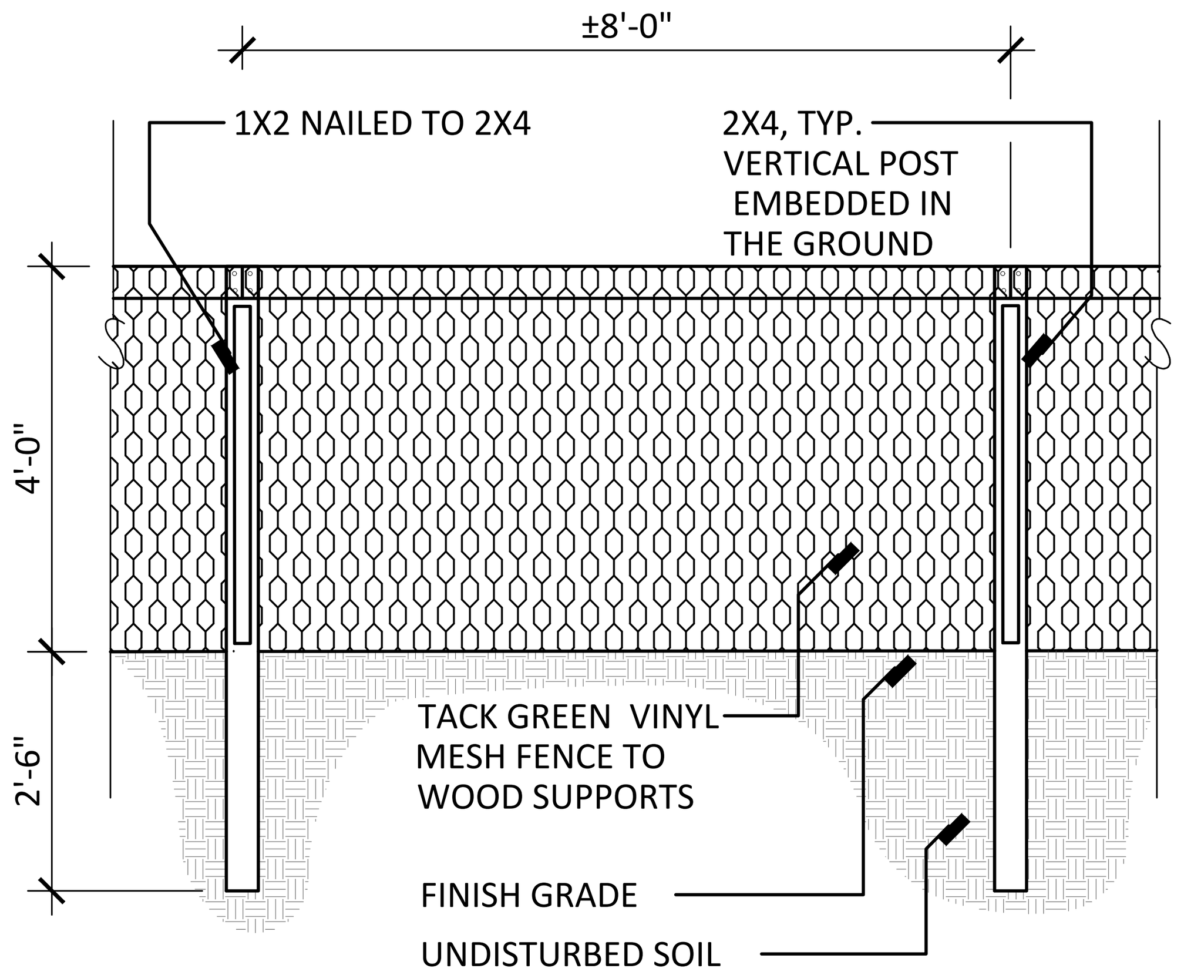


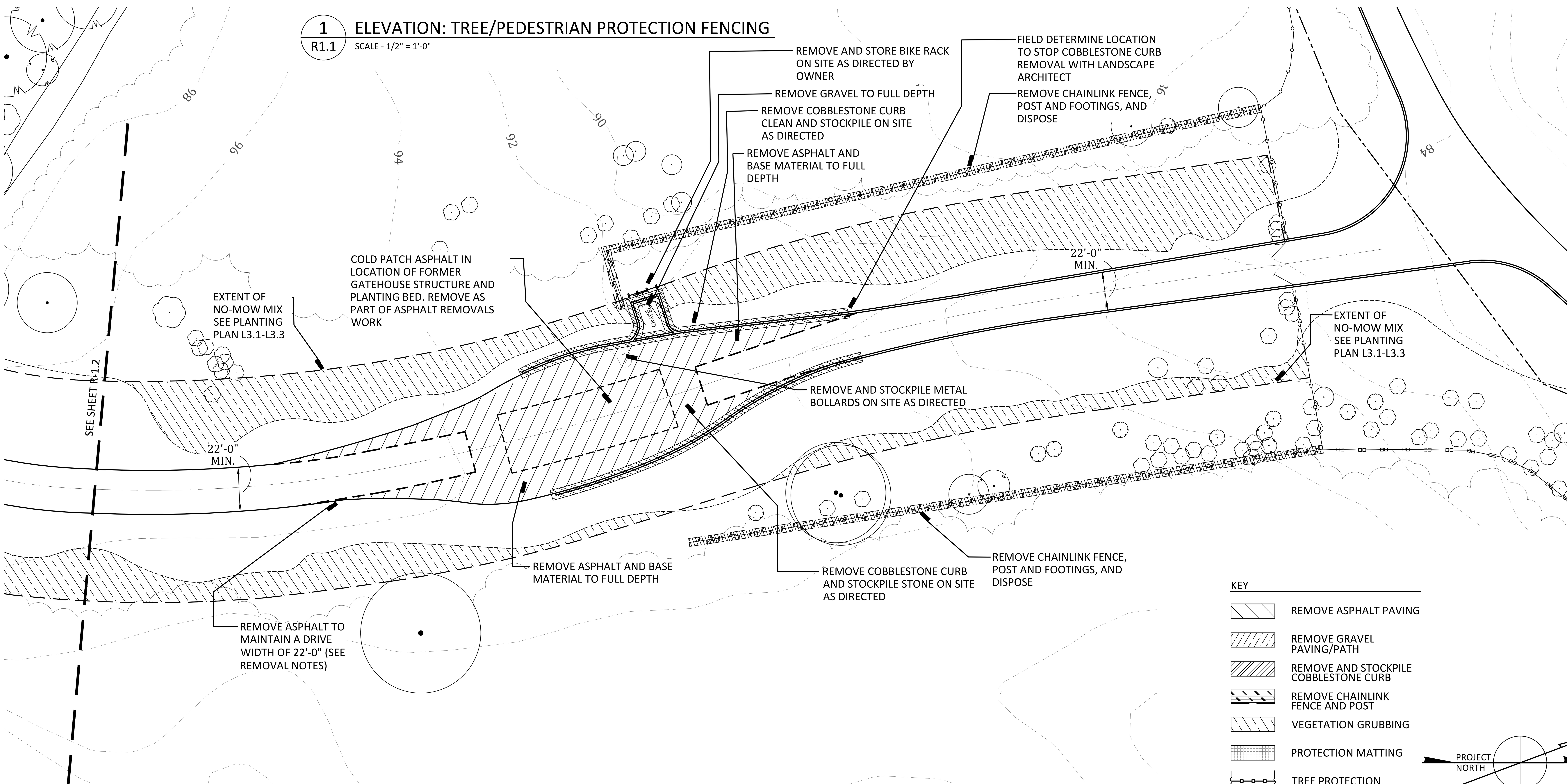
NOTE: SEE DETAIL 2/R-1.4 FOR ADDITIONAL INFORMATION

1 R1.1 ELEVATION: TREE/PEDESTRIAN PROTECTION FENCING

SCALE - 1/2" = 1'-0"

GENERAL REMOVAL NOTES:

1. THE CONTRACTOR IS TO BECOME FAMILIAR WITH ALL SITE CONDITIONS THAT ARE AFFECTED BY THIS WORK. FIELD VERIFY ALL QUANTITIES AND AREAS FOR ASPHALT REMOVAL.
2. SEDIMENTATION AND EROSION CONTROL MEASURES ARE TO BE IN PLACE IN ADVANCE OF ANY DEMOLITION, REMOVALS OR EARTH WORKING OPERATIONS.
3. REMOVAL OF ASPHALT SHALL INCLUDE THE FULL REMOVAL OF SUB-BASE MATERIALS UNLESS OTHERWISE INDICATED ON THE DETAILS AND AS DIRECTED BY THE LANDSCAPE ARCHITECT.
4. THE FINISH TRAVEL WIDTH OF DRIVE WITHIN THE WORK SCOPE AREA IS TO MATCH ADJACENT WIDTHS UNLESS OTHERWISE DIRECTED ON SITE BY THE LANDSCAPE ARCHITECT AND SHALL NOT BE LESS THAN (22) TWENTY TWO FEET UNLESS OTHERWISE DIRECTED BY THE LANDSCAPE ARCHITECT.
5. PROVIDE ONE LANE OF CONTINUOUS ACCESS AND TRAFFIC CONTROL DURING REMOVALS AND CONSTRUCTION OPERATIONS.
6. ASPHALT IS TO BE REMOVED BY CUTTING OF A CLEAN SAW CUT JOINT/EDGE.
7. ITEMS INDICATED TO BE REMOVED AND STORED ARE TO BE CAREFULLY REMOVED AND STORED IN A MANNER THAT DOES NOT DAMAGE THE INTEGRITY, STRUCTURE OR FINISH OF THE ITEMS. THESE ITEMS BELONG TO THE OWNER AND SHALL BE REUSED IN EITHER THIS CONTRACT OR FUTURE WORK. THEY SHALL BE STORED ABOVE GROUND ON PALLETS OR BY OTHER SUITABLE MEANS AS AGREED TO BY THE LANDSCAPE ARCHITECT.
8. CONCRETE FOOTING OR MOUNTING BASES SHALL BE REMOVED AND DISPOSED OF AS PART OF THE REMOVAL WORK.
9. REMOVE AND STOCKPILE COBBLESTONES INCLUDING CONCRETE SETTING BED TO FULL DEPTH.
10. CLEAN COBBLESTONES OF LOOSE CONCRETE BY MECHANICAL MEANS. SEE LAYOUT DRAWINGS FOR DETERMINATION OF THE QUANTITY OF COBBLESTONES TO BE STOCKPILED FOR REUSE.
11. THE LOCATION OF MATERIALS STOCKPILES AND MATERIAL STORAGE SHALL BE AT THE DIRECTION OF THE LANDSCAPE ARCHITECT, ON SITE.



KEY

- REMOVE ASPHALT PAVING
- REMOVE GRAVEL PAVING/PATH
- REMOVE AND STOCKPILE COBBLESTONE CURB
- REMOVE CHAINLINK FENCE AND POST
- VEGETATION GRUBBING
- PROTECTION MATTING
- TREE PROTECTION FENCING (SEE DETAIL 1/R1.1)
- CONSTRUCTION FENCING

PROJECT NORTH

0' 15' 30' 60'

SOURCES
FLONHS, July 1918 Field Notes,
File: 06645-17_34350123045_o

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Sheet Title:
DRIVE AND WALK REMOVALS

Drawing Number:
R-1.1

Project Number: PFF ENTRY 0306-2023
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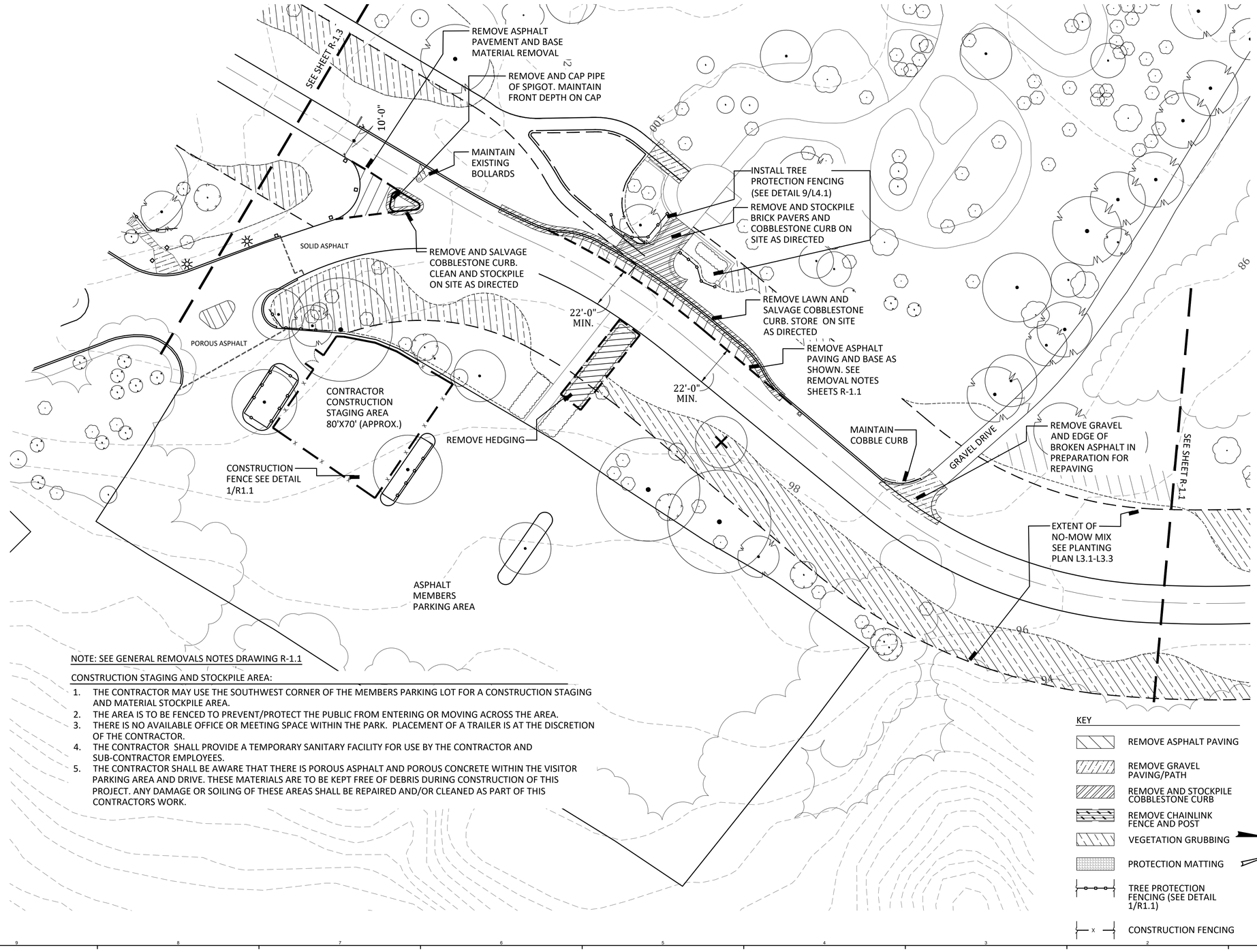

NOTE: SEE GENERAL REMOVALS NOTES DRAWING R-1.1

CONSTRUCTION STAGING AND STOCKPILE AREA:

1. THE CONTRACTOR MAY USE THE SOUTHWEST CORNER OF THE MEMBERS PARKING LOT FOR A CONSTRUCTION STAGING AND MATERIAL STOCKPILE AREA.
2. THE AREA IS TO BE FENCED TO PREVENT/PROTECT THE PUBLIC FROM ENTERING OR MOVING ACROSS THE AREA.
3. THERE IS NO AVAILABLE OFFICE OR MEETING SPACE WITHIN THE PARK. PLACEMENT OF A TRAILER IS AT THE DISCRETION OF THE CONTRACTOR.
4. THE CONTRACTOR SHALL PROVIDE A TEMPORARY SANITARY FACILITY FOR USE BY THE CONTRACTOR AND SUB-CONTRACTOR EMPLOYEES.
5. THE CONTRACTOR SHALL BE AWARE THAT THERE IS POROUS ASPHALT AND POROUS CONCRETE WITHIN THE VISITOR PARKING AREA AND DRIVE. THESE MATERIALS ARE TO BE KEPT FREE OF DEBRIS DURING CONSTRUCTION OF THIS PROJECT. ANY DAMAGE OR SOILING OF THESE AREAS SHALL BE REPAIRED AND/OR CLEANED AS PART OF THIS CONTRACTORS WORK.

SOURCES
FLONHS, July 1918 Field Notes, File: 06645-17_34350123045_o

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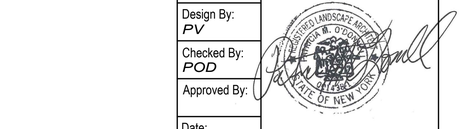


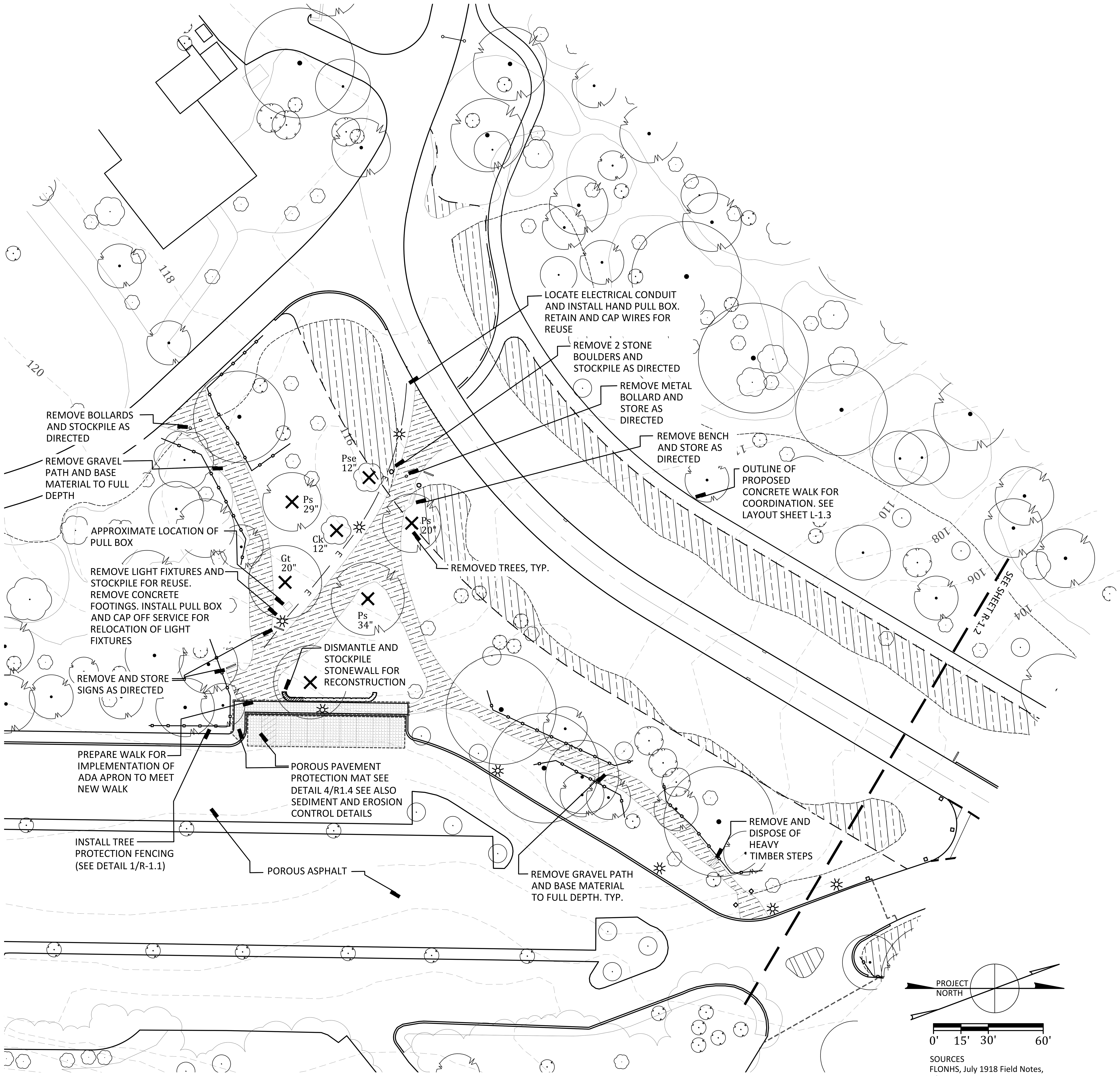
Sheet Title:

DRIVE AND WALK REMOVALS

Drawing Number:

R-1.2

Project Number: PFF ENTRY 0306-2023
Sheet: 8 OF 18



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NOTE: SEE GENERAL REMOVALS NOTES DRAWING R-1.1

KEY

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- PROTECTION MATTING
- TREE PROTECTION FENCING (SEE DETAIL 1/R1.1)
- CONSTRUCTION FENCING

TREE REMOVAL NOTES

New York State Parks, Recreation and Historic Preservation

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Sheet Title:
DRIVE AND WALK REMOVALS

Drawing Number:
R-1.3

Project Number: PFF ENTRY 0306-2023
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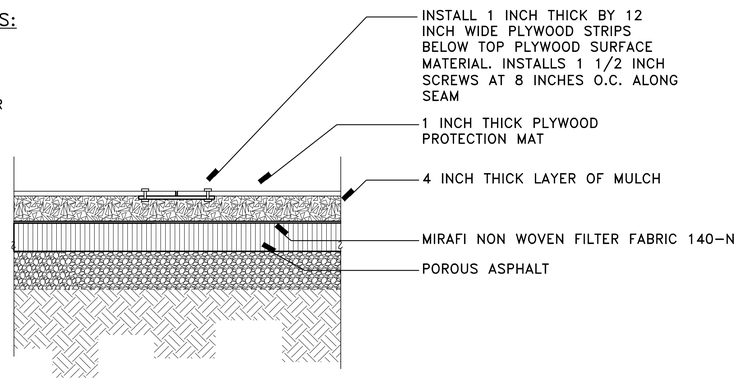
GROUND PROTECTION BOARD NOTES:

- PROVIDE AND INSTALL 1 INCH THICK PLYWOOD PROTECTION MAT ATOP 4 INCH THICK LAYER OF SHREDDED MULCH.
- PLACE MIRAFI 140–N NON WOVEN FILTER FABRIC ATOP ASPHALT PAVING, OVERLAP SHEETS BY A MINIMUM OF 6 INCHES.
- INSTALL PROTECTION BOARD IN AREAS DESIGNATED FOR CONSTRUCTION STAGING

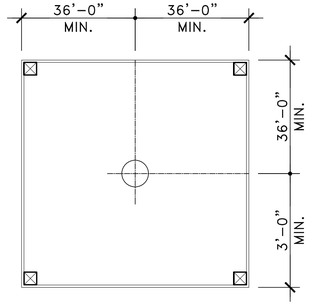


4 / R1.4 SECTION – POROUS PAVING GROUND PROTECTION
SCALE – 1" = 1'–0"

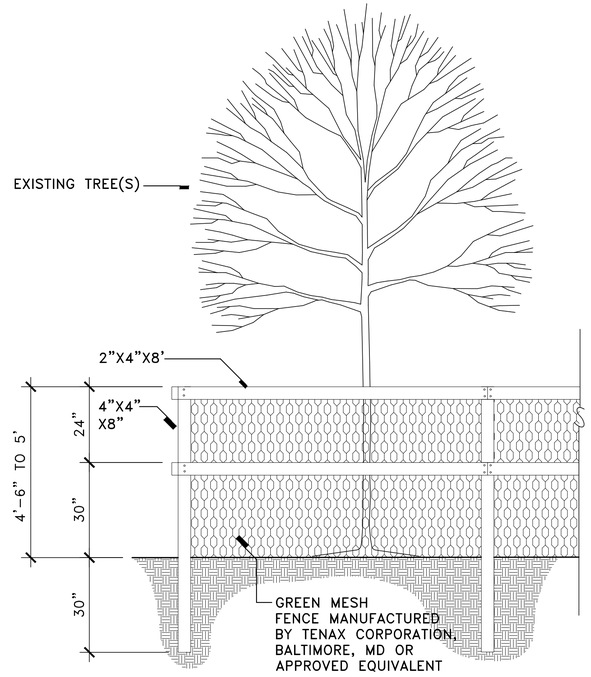
NOTES:
1. USE UNTREATED LUMBER FOR TREE PROTECTION FENCING.

2. SEE PLAN FOR EXTENT AND LOCATION OF FENCE. LOCATE ON SITE WITH OWNERS REPRESENTATIVE. SPACE POSTS AT ±10'–0" O.C.

3. INSTALL TREE PROTECTION FENCING TO DRIPLINE OF TREE.

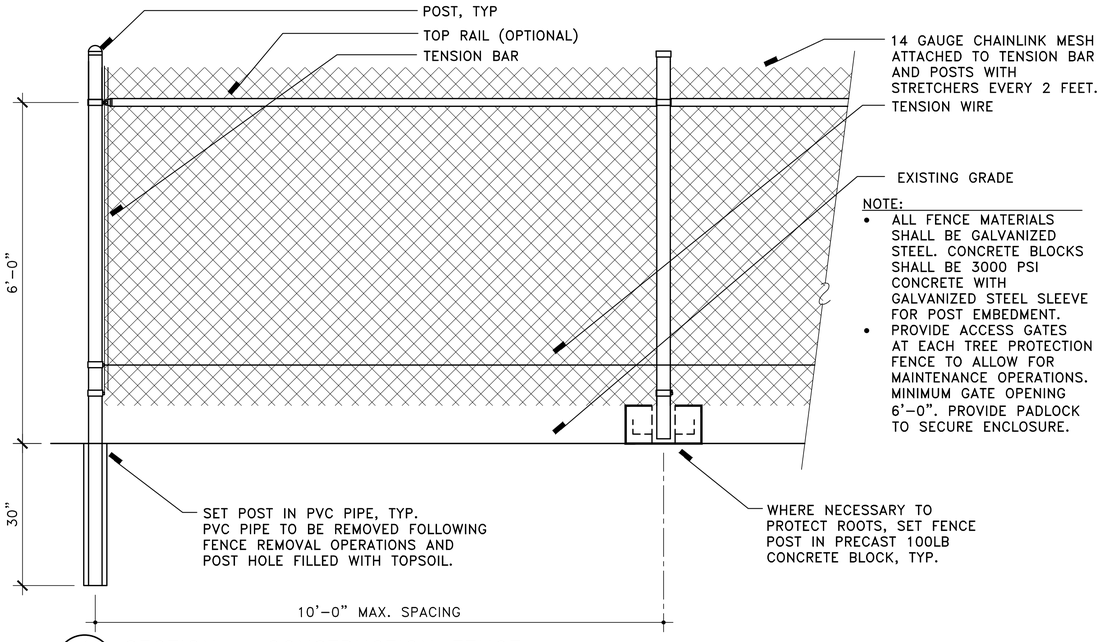


PLAN FOR SINGLE TREE



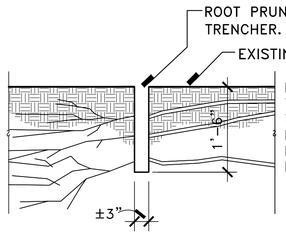
ELEVATION

2 / R1.4 TREE PROTECTION FENCE INDIVIDUAL
SCALE – 1/2" = 1'–0"

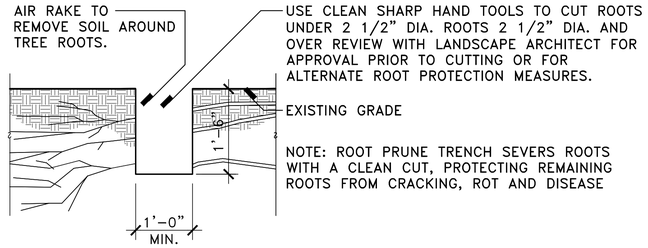


NOTE:
- ALL FENCE MATERIALS SHALL BE GALVANIZED STEEL. CONCRETE BLOCKS SHALL BE 3000 PSI CONCRETE WITH GALVANIZED STEEL SLEEVE FOR POST EMBEDMENT.
- PROVIDE ACCESS GATES AT EACH TREE PROTECTION FENCE TO ALLOW FOR MAINTENANCE OPERATIONS. MINIMUM GATE OPENING 6'–0". PROVIDE PADLOCK TO SECURE ENCLOSURE.

1 / R1.4 SECTION – CONSTRUCTION FENCE
SCALE – 3/4" = 1'–0"



TREES UNDER 8 INCH CALIPER:



TREES 8 INCH CALIPER AND LARGER:

TREE ROOT PRUNING NOTES:

1: BEFORE CONSTRUCTION BEGINS:

1A. SEE LANDSCAPE REMOVALS AND PROTECTION PLAN DRAWING R–1.1 FOR LOCATIONS OF TREES WITHIN THE CONSTRUCTION AREA THAT MAY NEED TO BE ROOT PRUNED.

1B. PRIOR TO EXCAVATION OR GRADING, MARK LOCATION OF AREA TO BE EXCAVATED AND REVIEW WITH LANDSCAPE ARCHITECT AND OBTAIN WRITTEN APPROVAL FROM LANDSCAPE ARCHITECT TO ROOT PRUNE TREES.

1C. FOR TREES UNDER 8 INCH CALIPER, WITH A TRENCH VIBRATORY PLOW OR VERMEER TRENCHER, CUT A TRENCH ±3" WIDE. MAXIMUM 1'–6" DEEP AS SHOWN ON PLAN AND AS DIRECTED ON SITE BY LANDSCAPE ARCHITECT. FILL TRENCH WITH TOPSOIL AFTER ROOT PRUNING. SEE DETAIL.

1D. FOR TREES 8 INCH CALIPER AND OVER DO NOT USE VIBRATORY PLOW/VERMEER TRENCHER. HAND DIG AND USE AN AIR RAKE (AIR EXCAVATING TOOL/AIR KNIFE) TO REMOVE SOIL FROM EXISTING ROOTS WITHOUT DAMAGING OR SEVERING TREE ROOTS. UPON INSPECTION AND APPROVAL BY THE LANDSCAPE ARCHITECT, TREE ROOTS LESS THAN 2 1/2 INCH DIAMETER MAY BE CUT WITH A HAND SAW IN PREPARATION FOR CONSTRUCTION. FILL TRENCH WITH TOPSOIL AFTER ROOT PRUNING. SEE DETAIL.

1E. FOR ALL ROOTS 2 1/2 INCH AND GREATER IN DIAMETER REMOVE SOIL IN THE EXTENDED AREA OF NEEDED EXCAVATION AND REVIEW WITH LANDSCAPE ARCHITECT. REQUEST DIRECTION ON TREATMENT AND PROTECTION OF ROOT SYSTEMS WHICH MAY INCLUDE USE OF SCHEDULE 80 PVC SLEEVE CUT TO PROTECT ROOT.

1F. FOR UTILITY EXCAVATIONS WITHIN TREE DRIPLINES, TREE ROOT PROTECTION AND PRUNING ARE TO PROCEED USING HAND DIGGING OPERATIONS. TREE ROOTS 1 INCH IN DIAMETER AND LARGER SHALL BE RETAINED AND UTILITIES SLEEVED OR TUNNELED BELOW. REVIEW ON SITE WITH THE LANDSCAPE ARCHITECT FOR DETERMINATION OF TREE PROTECTION MEASURES TO BE UNDERTAKEN, WHICH MAY INCLUDE USE OF AN AIR RAKE FOR MAINTAINING AND INSTALLING UTILITIES WITHIN TREE ROOT ZONES.

1G. SPREAD MULCH 2" DEEP OVER AREA WITHIN TREE PROTECTION FENCE FOR TREES THAT HAVE BEEN ROOT PRUNED. USE SHREDDED HARDWOOD MULCH. MAINTAIN MULCH DURING CONSTRUCTION OPERATIONS.

1H. APPLY WATER TO ENTIRE MULCHED AREA OF ROOT PRUNED TREES TO ACHIEVE NORMAL RAINFALL RATE THROUGHOUT CONSTRUCTION. WATER A MINIMUM OF ONCE EVERY TWO WEEKS TO A ONE (1) INCH DEPTH IN ABSENCE OF SUBSTANTIAL RAINFALL.

1I. IF CONSTRUCTION OPERATIONS MUST TAKE PLACE WITHIN THE TREE PROTECTION FENCE, PLACE GROUND PROTECTION BOARD OVER FOUR (4) INCH THICK LAYER OF MULCH IN PATH OF OPERATIONS. REMOVE MATTING AND MULCH IMMEDIATELY FOLLOWING COMPLETION OF OPERATIONS.

2: POST CONSTRUCTION:

2A. ALLOW INSPECTION OF ROOTING WITHIN MULCH BY LANDSCAPE ARCHITECT.

2B. REMOVE LOOSE MULCH LAYER CAREFULLY BY HAND

2C. REMOVE TREE PROTECTION FENCE ACCESSING FROM OUTSIDE TREE PROTECTION ZONE. AVOID COMPACTION, PULL POST VERTICALLY FROM GROUND TO REMOVE.

2D. RESTORE FINISH GRADE AND LANDSCAPE TREATMENT(S).

3 / R1.4 SECTION – TREE ROOT PROTECTION & PRUNING
SCALE – 3/4" = 1'–0"

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REMOVALS AND PROTECTION DETAILS

Drawing Number:

R-1.4

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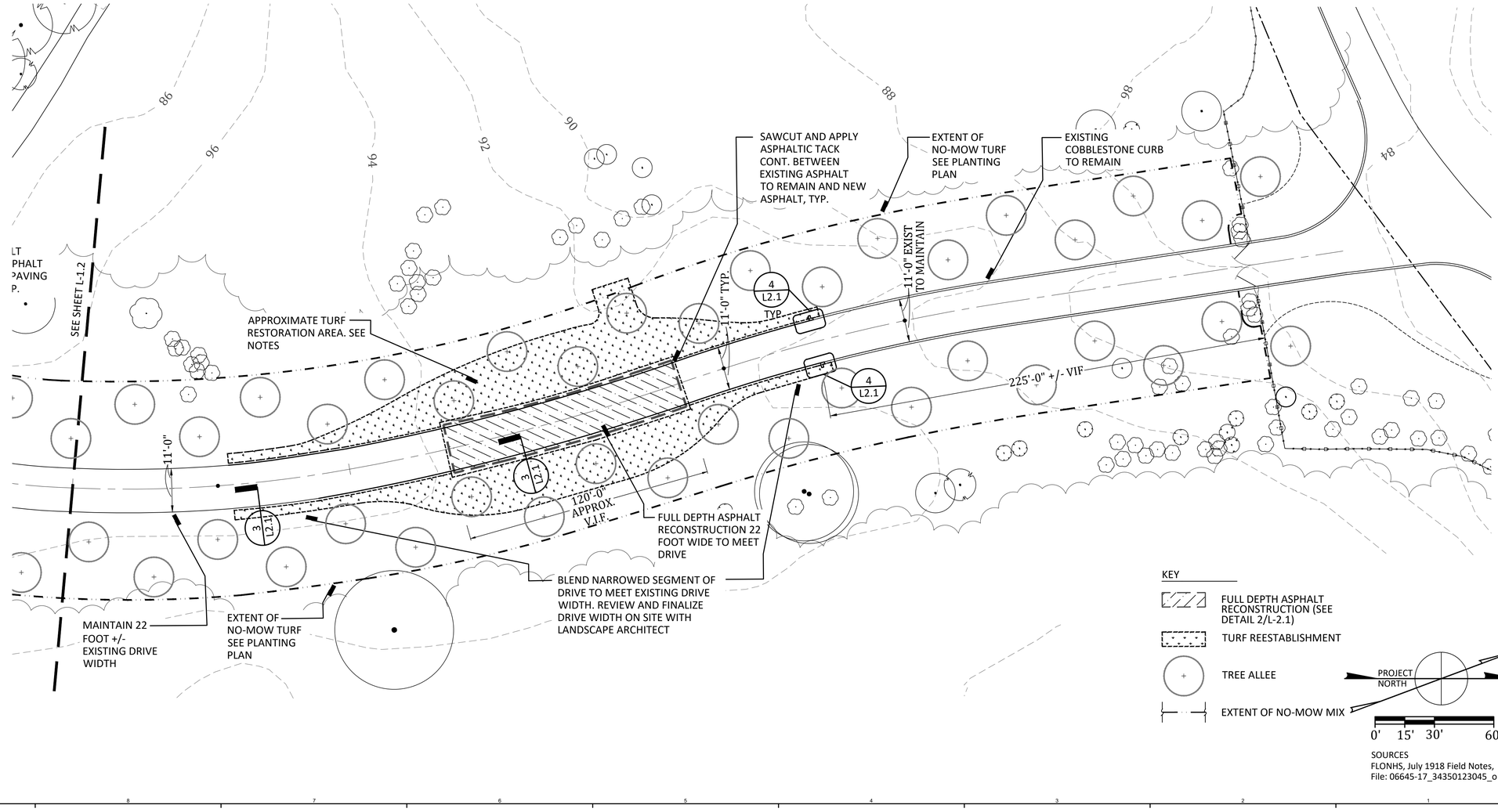
GENERAL NOTES :

1. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR IMPLEMENTING SITE WORK UNDER THESE CONTRACT DOCUMENTS
2. PLANTING FIELDS ARBORETUM IS A PUBLIC SITE AND WILL REMAIN OPERATIONAL DURING THE CONSTRUCTION. THE CONTRACTOR IS TO PROVIDE SITE PROTECTION MEASURES THAT ADDRESS PUBLIC SAFETY DURING CONSTRUCTION OPERATIONS.
3. IN THE EVENT THAT PAVING OPERATIONS REQUIRE THE DRIVE TO BE CLOSED FOR A PERIOD OF TIME THE CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE PLANTING FIELDS FOUNDATION TO SCHEDULE THE WORK DURING A TIME WHEN TRAFFIC ACCESS BY THE PUBLIC, ORGANIZATIONS AND TENANTS, CAN BE RE-ROUTED TO ENTER USING THE HISTORIC GATES/DRIVE FROM CHICKEN VALLEY ROAD.
4. CONTRACTOR AND SUB-CONTRACTOR EMPLOYEES PARKING IS AVAILABLE IN THE MEMBERS PARKING LOT, IN THE DESIGNATED AREA.
5. WALK ALIGNMENTS AND GRADING ARE TO BE STAKED BY THE CONTRACTOR AND REVIEWED ON SITE BY THE LANDSCAPE ARCHITECT. THE CONTRACTOR IS TO MAKE ADJUSTMENTS AS REQUESTED. SEE SPECIFICATIONS SECTION 01 7300 EXECUTION OF LAYOUT AND GRADING FOR DETAILED INFORMATION
6. ASPHALT PAVEMENT REDUCTION AND REPAIR WORK SHALL BE STAKED AND REVIEWED IN ADVANCE FOR ACCEPTANCE BY THE LANDSCAPE ARCHITECT
7. ALIGNMENT AND EXTENT OF COBBLESTONE CURB CONSTRUCTION TO BE FINALIZED ON SITE WITH THE LANDSCAPE ARCHITECT.
8. THE DRIVE SHALL BE GRADED TO MAINTAIN THE EXISTING DRAINAGE PATTERN WITHOUT CREATING ANY LOW SPOTS FOR STANDING OR PONDING OF WATER.
9. CONCRETE WALK (S) SHALL BE CONSTRUCTED TO MEET ADA GUIDELINE OF UNDER 5% GRADIENT WITH POSITIVE SURFACE FLOW AND CROSS SLOPE OF NOT MORE THAN 1.8 PERCENT
10. RESTORATION OF TURF AREAS ARE TO INCLUDE IMPORTING TOPSOIL AND GRADING TO MEET FINISH GRADES WHERE ASPHALT, GRAVEL WALKS AND BASE MATERIALS HAVE BEEN REMOVED AND WHERE THE LANDSCAPE IS OTHERWISE DAMAGED BY CONSTRUCTION OPERATIONS.
11. SEE PLANTING DRAWINGS L-3.1, L-3.2 AND L-3.3 FOR PLANTING AND TURF ESTABLISHMENT TO BE CARRIED OUT UNDER THIS CONTRACT WORK.

GENERAL SUMMARY OF WORK :

WORK UNDER THIS CONTRACT SHALL INCLUDE AND IS NOT LIMITED TO THE FOLLOWING. REVIEW ALL CONTRACT DRAWINGS AND SPECIFICATIONS FOR DETAILED WORK INFORMATION AND REQUIREMENTS.

1. SELECTIVE REMOVAL AND RE-CONSTRUCTION OF THE ASPHALT DRIVE TO ESTABLISH A TWENTY -TWO FOOT (22'-0") TRAVEL LANE WIDTH
2. ASPHALT PAVING ADJUSTMENTS AT THE VISITOR PARKING ENTRY AND THE MAIN DRIVE
3. GRADING AND CONSTRUCTION OF AN EXPOSED AGGREGATE CONCRETE PEDESTRIAN WALK ALONG THE WEST SIDE OF THE ENTRY DRIVE
4. GRADING AND CONSTRUCTION OF AN EXPOSED AGGREGATE CONCRETE PEDESTRIAN WALK FROM THE VISITOR PARKING AREA TO COE HALL
5. RELOCATION OF VEHICULAR COBBLE STONE CURB AND ASPHALT REPAIR
6. BRICK REPAIR WORK AT THE SYNOPTIC GARDEN TERRACE
7. REMOVAL, REINSTALLATION OF AND NEW PEDESTRIAN LIGHT FIXTURES AT THE PEDESTRIAN WALKS
8. REPAIR AND CONSTRUCTION OF A LOW COBBLE STONE RETAINING WALL
9. PLANTING OF AN OAK TREE ALLEE ALONG THE ENTRY DRIVE
10. IMPLEMENTATION OF A NO-MOW TURF LAWN BELOW THE OAK TREE ALLEE
11. RELOCATION OF INFORMATIONAL AND VEHICULAR REGULATORY SIGNAGE



SOURCES
FLONHS, July 1918 Field Notes, File: 06645-17_34350123045_o

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PO BOX 321, CHARLOTTE, VERMONT 05445
34 WALL STREET, NORWALK, CONNECTICUT 06850

Contract No: PFF 030623

Project Title:
Planting Fields Entry Drive Trees, Walks and Drive Repair

Project Location:
Planting Fields Arboretum
1395 Planting Fields Road
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Approved By:
Date: 27 Feb. 2023

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REGISTERED LANDSCAPE ARCHITECT THOMAS M. O'DONNELL 001436 STATE OF NEW YORK

Sheet Title:

DRIVE AND WALK LAYOUTS

Drawing Number:

L-1.1

Project Number: PFF ENTRY 0306-2023
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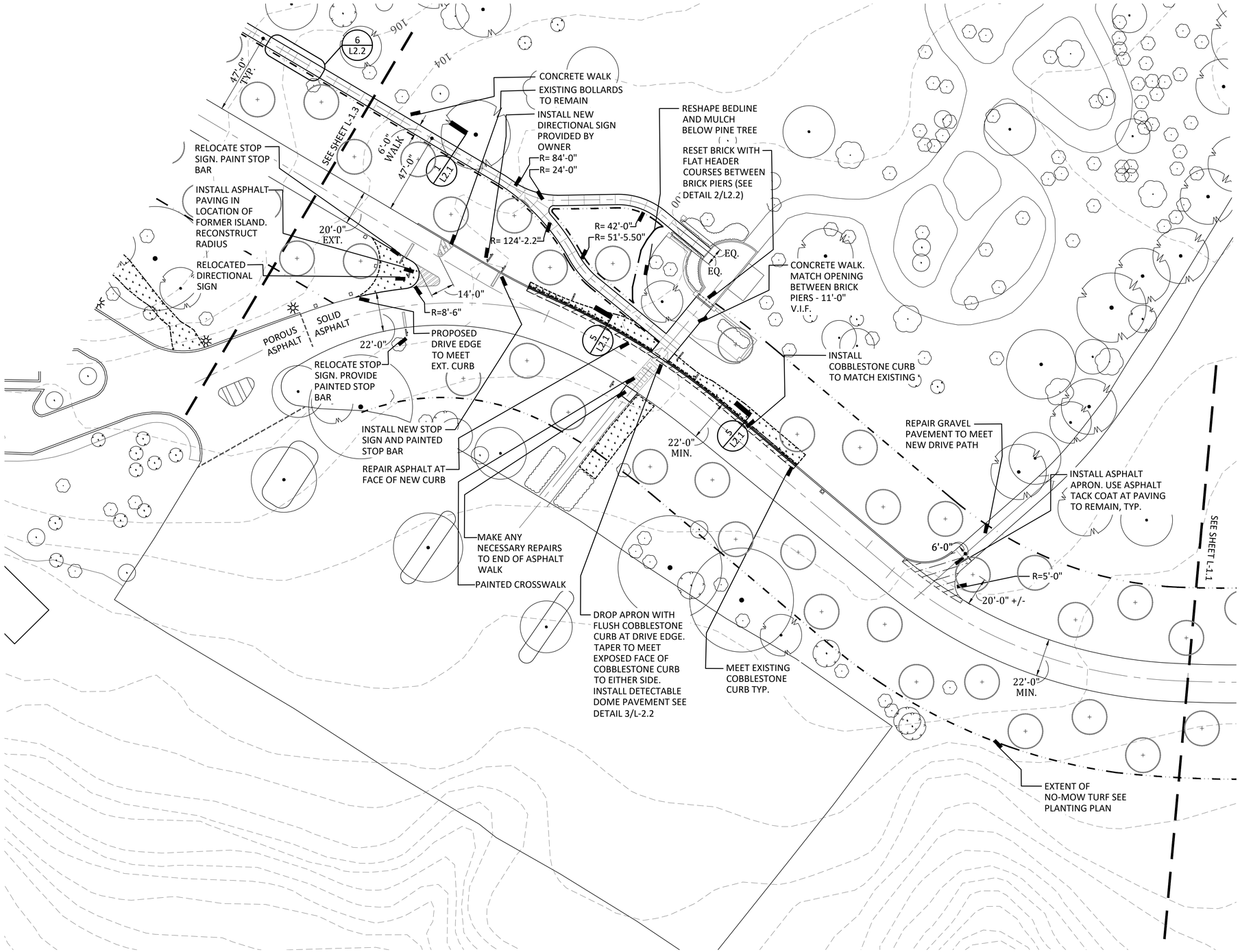

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Sheet Title:
DRIVE AND WALK LAYOUTS

Drawing Number:
L-1.2

Project Number: PFF ENTRY 0306-2023
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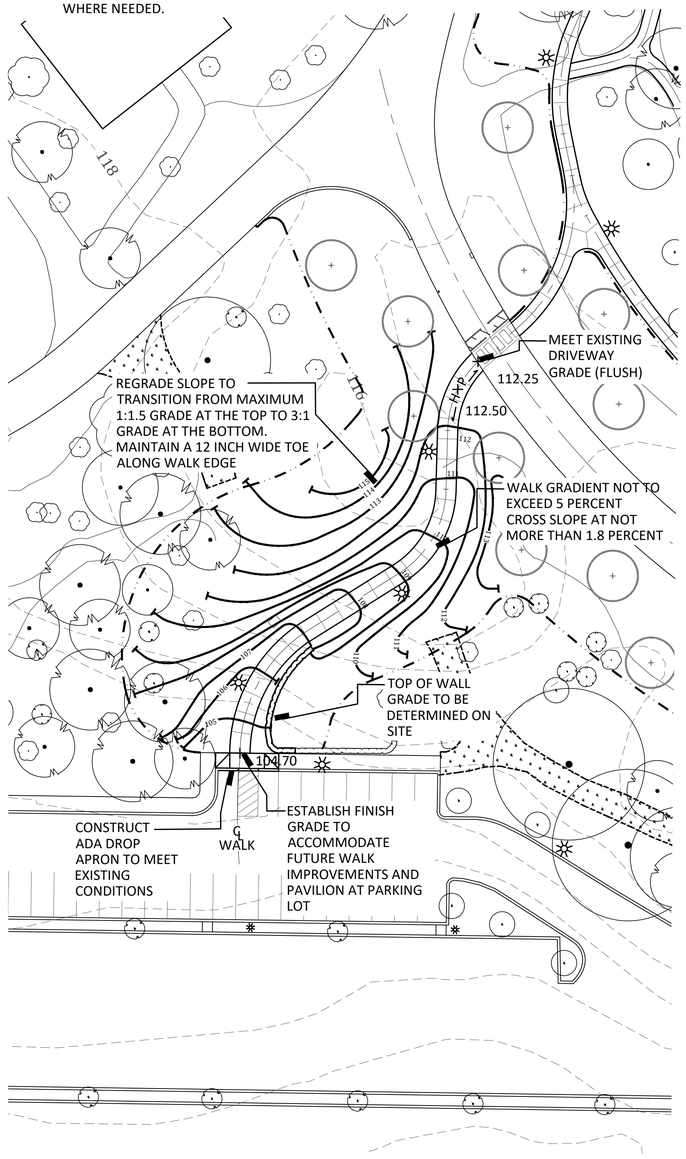
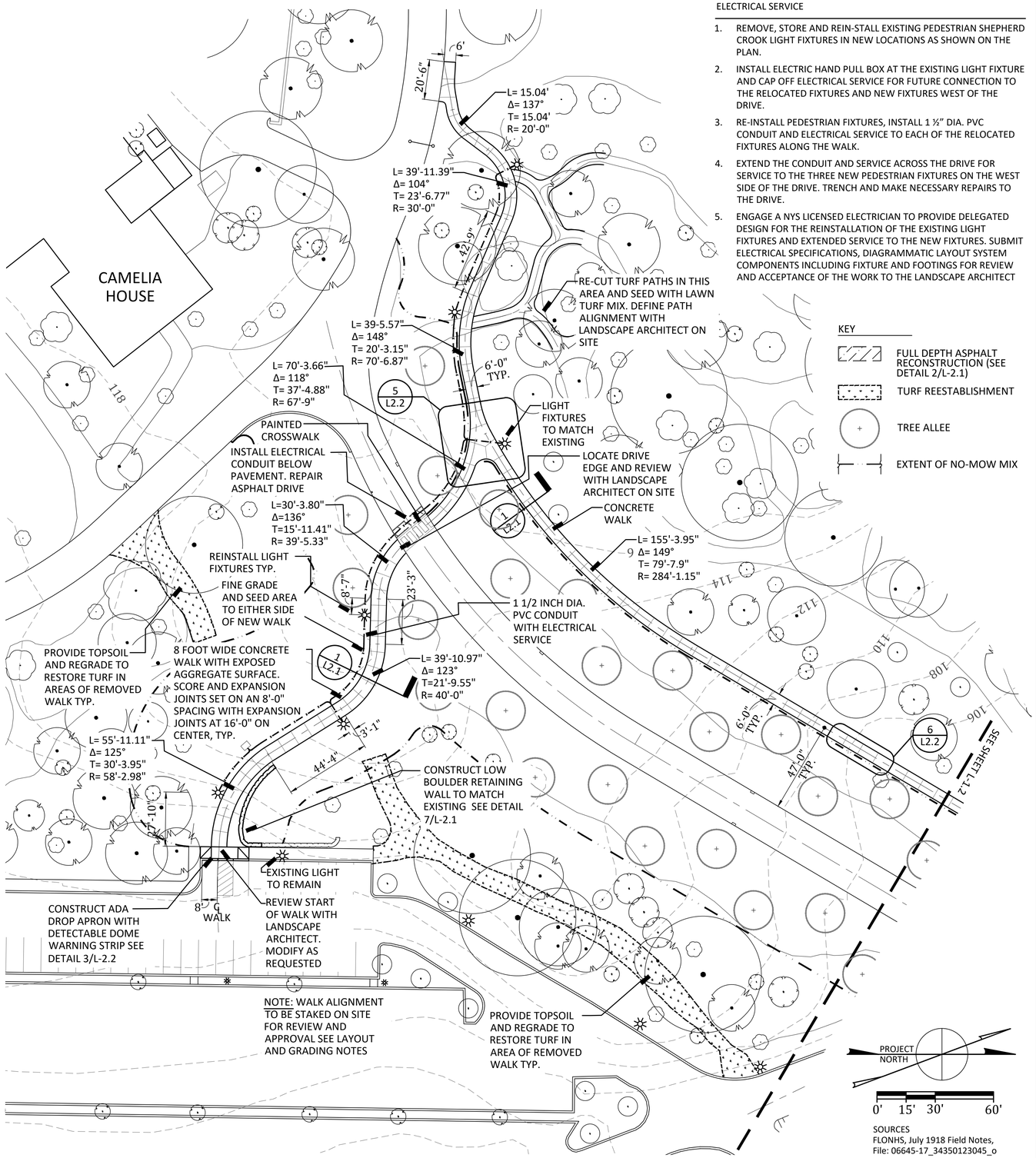
LAYOUT AND GRADING NOTES:

1. THE CONTRACTOR SHALL REVIEW AND COMPLY WITH REQUIREMENTS FOR THE LAYOUT AND GRADING OF THE WALKS AS OUTLINED IN SPECIFICATION SECTION 01 7300 EXECUTION OF LAYOUT AND GRADING OF THE SPECIFICATIONS
2. WALK GRADES ARE BASED ON GRADING AND DRAINAGE PLAN C3.0 OF THE 2015 FINAL BID DOCUMENTS (4/3/15 BY H2M ARCHITECTS + ENGINEERS) AND AERIAL CONTOURS AS USED FOR PLANNING PURPOSES. AN ACTUAL CONTOUR SURVEY OF THE PROJECT AREA IS NOT AVAILABLE
3. THE EXTENT OF CONTOUR GRADING WORK SHOWN FOR CONSTRUCTION OF THE EAST WALK IS PROVIDED AS AN ORDER OF MAGNITUDE FOR COSTING AND PLANNING PURPOSES. THE ACTUAL EXTENT OF GRADING MAY VARY MODESTLY TO ACHIEVE ADA COMPLIANCE OF UNDER 5 PERCENT FOR THIS WALK SEGMENT AND SHAPING OF THE LANDSCAPE.
4. THE WEST WALK IS CONSTRUCTED ON LEVEL TO MODESTLY SLOPING LAND. THE CONTRACTOR SHALL WORK WITH THE LANDSCAPE ARCHITECT TO IDENTIFY FINISH ELEVATIONS AND ESTABLISH POSITIVE GRADIENTS AND CROSS PITCH TO MAINTAIN WALKS FREE OF SURFACE WATER AND ADA COMPLIANCE.
5. WALKS SHALL BE STAKED ON SITE, REVIEWED WITH THE LANDSCAPE ARCHITECT AND MODIFIED TO FIT ACTUAL SITE CONDITIONS
6. CONTRACTOR IS REQUIRED TO PROVIDE SPOT ELEVATIONS OF EXISTING GRADES TO THE LANDSCAPE ARCHITECT.
7. THE LANDSCAPE ARCHITECT WILL COORDINATE WITH THE CONTRACTOR TO STABILIZE AND REFINE WALK ELEVATIONS BASED ON ACTUAL FIELD ELEVATIONS AS PROVIDED.
8. LANDSCAPE ARCHITECT WILL REVIEW WALK ALIGNMENTS AND GRADES ON SITE, MAKING ADJUSTMENTS WHERE NEEDED.





SOURCES
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GENERAL NOTES: PEDESTRIAN LIGHT FIXTURE INSTALLATION AND ELECTRICAL SERVICE

1. REMOVE, STORE AND REIN-STALL EXISTING PEDESTRIAN SHEPHERD CROOK LIGHT FIXTURES IN NEW LOCATIONS AS SHOWN ON THE PLAN.
2. INSTALL ELECTRIC HAND PULL BOX AT THE EXISTING LIGHT FIXTURE AND CAP OFF ELECTRICAL SERVICE FOR FUTURE CONNECTION TO THE RELOCATED FIXTURES AND NEW FIXTURES WEST OF THE DRIVE.
3. RE-INSTALL PEDESTRIAN FIXTURES, INSTALL 1 ½" DIA. PVC CONDUIT AND ELECTRICAL SERVICE TO EACH OF THE RELOCATED FIXTURES ALONG THE WALK.
4. EXTEND THE CONDUIT AND SERVICE ACROSS THE DRIVE FOR SERVICE TO THE THREE NEW PEDESTRIAN FIXTURES ON THE WEST SIDE OF THE DRIVE. TRENCH AND MAKE NECESSARY REPAIRS TO THE DRIVE.
5. ENGAGE A NYS LICENSED ELECTRICIAN TO PROVIDE DELEGATED DESIGN FOR THE REINSTALLATION OF THE EXISTING LIGHT FIXTURES AND EXTENDED SERVICE TO THE NEW FIXTURES. SUBMIT ELECTRICAL SPECIFICATIONS, DIAGRAMMATIC LAYOUT SYSTEM COMPONENTS INCLUDING FIXTURE AND FOOTINGS FOR REVIEW AND ACCEPTANCE OF THE WORK TO THE LANDSCAPE ARCHITECT

KEY

- FULL DEPTH ASPHALT RECONSTRUCTION (SEE DETAIL 2/L-2.1)
- TURF REESTABLISHMENT
- TREE ALLEE
- EXTENT OF NO-MOW MIX

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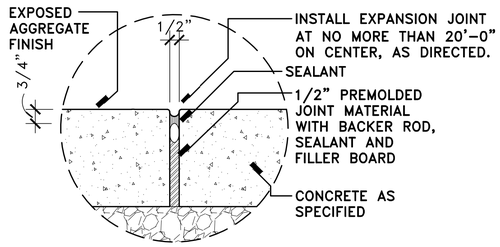
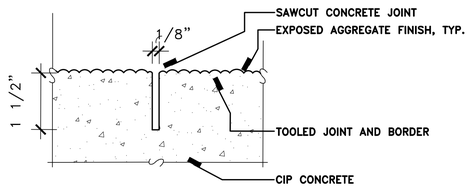
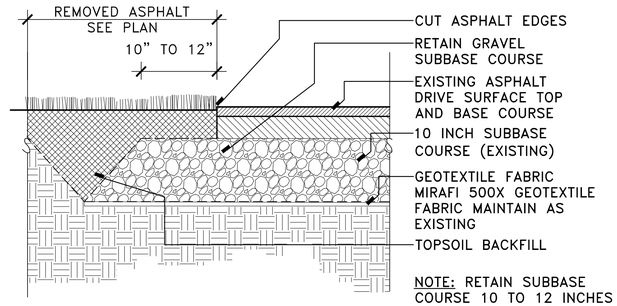


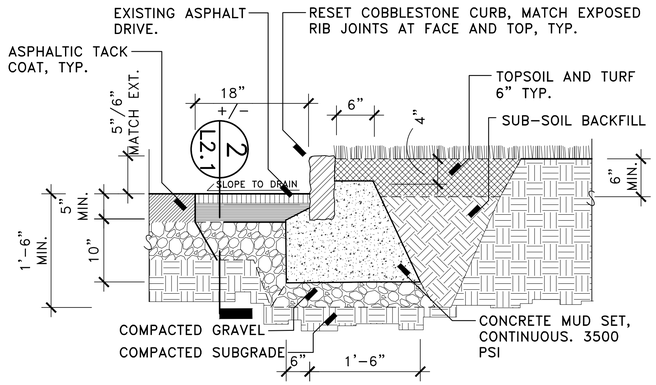
8 L2.1 SECTION: EXPANSION JOINT
SCALE – 3" = 1'-0"



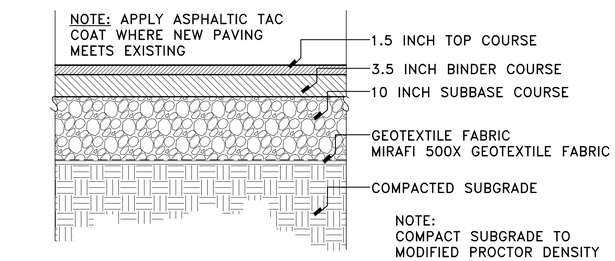
6 L2.1 SECTION: SAWCUT JOINT
SCALE – 6" = 1'-0"



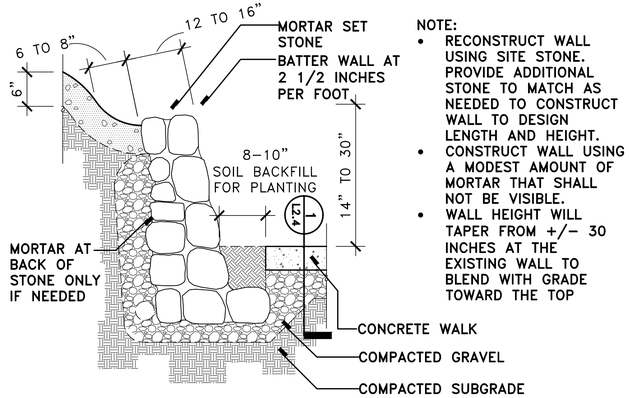
3 L2.1 SECTION: DRIVE CUT EDGE AT REMOVAL SECTION
SCALE – 1" = 1'-0"



5 L2.1 SECTION: COBBLESTONE CURB
SCALE – 1" = 1'-0"

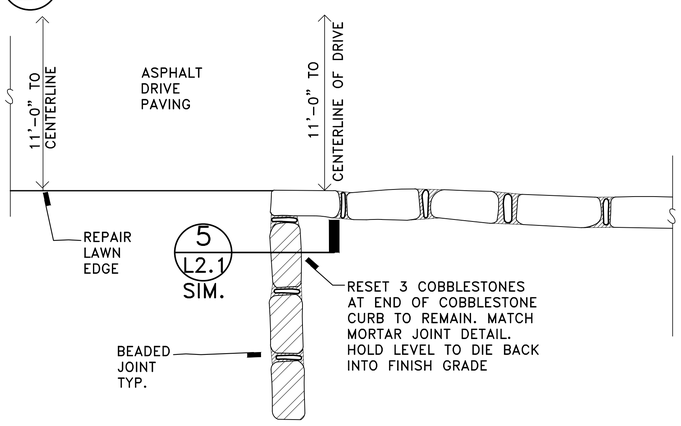


2 L2.1 SECTION: FULL DEPTH ASPHALT DRIVE
SCALE – 1" = 1'-0"

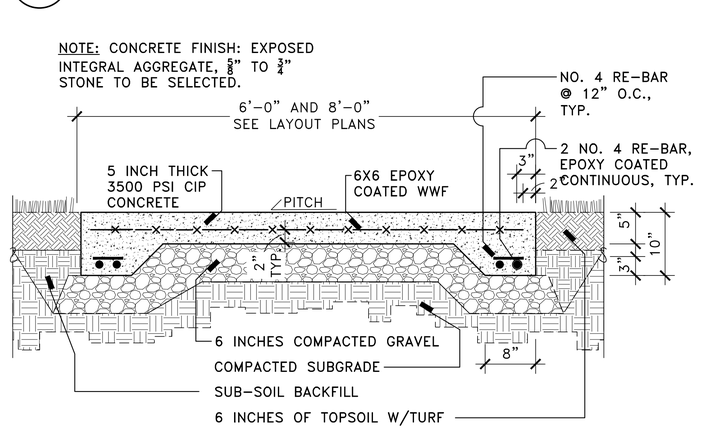


NOTE:
- RECONSTRUCT WALL USING SITE STONE. PROVIDE ADDITIONAL STONE TO MATCH AS NEEDED TO CONSTRUCT WALL TO DESIGN LENGTH AND HEIGHT.
- CONSTRUCT WALL USING A MODEST AMOUNT OF MORTAR THAT SHALL NOT BE VISIBLE.
- WALL HEIGHT WILL TAPER FROM +/– 30 INCHES AT THE EXISTING WALL TO BLEND WITH GRADE TOWARD THE TOP

7 L2.1 SECTION: RETAINING WALL RECONSTRUCTION
SCALE – 3/4" = 1'-0"



4 L2.1 PLAN: COBBLESTONE CURB TRANSITION
SCALE – 1" = 1'-0" AT ASPHALT DRIVE



1 L2.1 SECTION: CONCRETE WALK (EXPOSED AGGREGATE)
SCALE – 1" = 1'-0"

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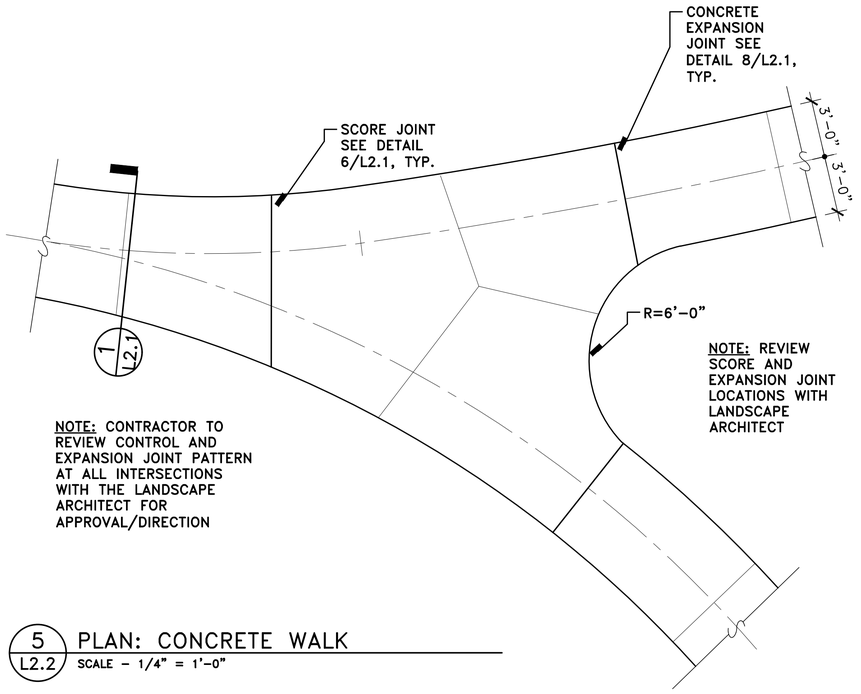
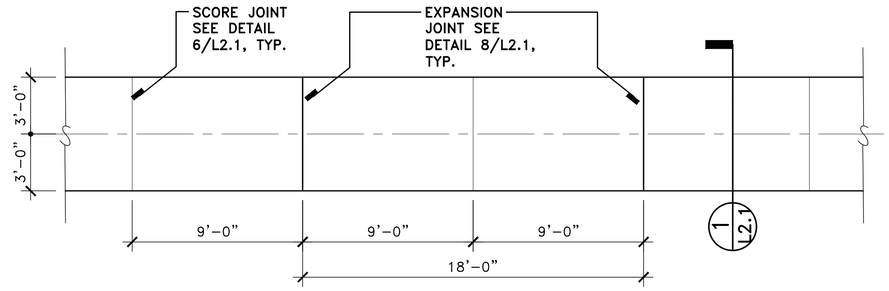
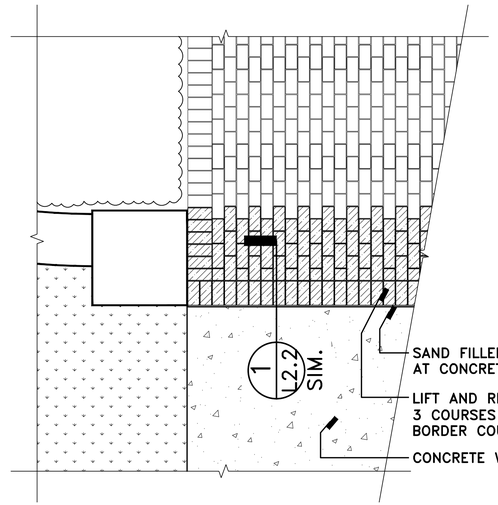


5 / L2.2 PLAN: CONCRETE WALK
SCALE – 1/4" = 1'-0"



6 / L2.2 PLAN: CONCRETE WALK
SCALE – 1/4" = 1'-0"



Pole-top luminaire · Asymmetric wide beam **BEGA**

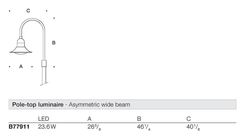
Application
Pole-top luminaire with asymmetric wide beam light distribution. These luminaires are designed to illuminate roadways, squares, driveways and pedestrian areas.
Materials
Optically textured UV-stabilized acrylic diffuser
Marine grade, copper free (≤0.3% copper content) A360.0 aluminum alloy
Mechanically captive stainless steel fasteners
Pure anodized aluminum reflector
NRTL listed to North American Standards, suitable for wet locations
Protection class IP 65
Weight: 27.6 lbs.
EPA (Effective projection area): 2.4 sq. ft.
Electrical

Operating voltage	120-277VAC
Minimum start temperature	-30° C
LED module wattage	23.6W
System wattage	26.0W
Controllability	0-10V dimmable
Color rendering index	Ra > 80
Luminaire lumens	3558lm
LED service life (L70)	60000hrs

LED color temperature
☐ 4000K (K4)
☐ 3500K (K35)
☐ 3000K (K3)
☐ 2700K (K27)
BEGA can supply you with suitable LED replacement modules for up to 20 years after the purchase of LED luminaires - see website for details
Finish
All BEGA standard finishes are matte, textured powder coat with minimum 3 mil thickness. BEGA Unidure® finish, a fluoropolymer technology, provides superior fade protection in Black, Bronze, and Silver. BEGA standard White is a super durable polyester powder. Optionally available RAL and custom color finishes provided in either polyester powder or liquid paint.
Available colors
☐ Black (BLK) ☐ Bronze (BRZ)
☐ Silver (SLV) ☐ White (WHT)
☐ RAL: ☐ CUS:

Type:
BEGA Product:
Project:
Modified:

Available options
☐ CUS Custom finish
☐ FSC Fusing
☐ MGU Marine grade undercoat
☐ RAL RAL finish



Pole-top luminaire - Asymmetric wide beam

	LED	A	B	C
B77911	23.6W	26⁵/₁₆	46¹/₄	40⁷/₁₆

BEGA 1000 BEGA Way, Carpinteria, CA 93013 (805) 684-0533 info@bega-us.com
Due to the dynamic nature of lighting products and the associated technologies, luminaire data on this sheet is subject to change at the discretion of BEGA North America. For the most current technical data, please refer to bega-us .com
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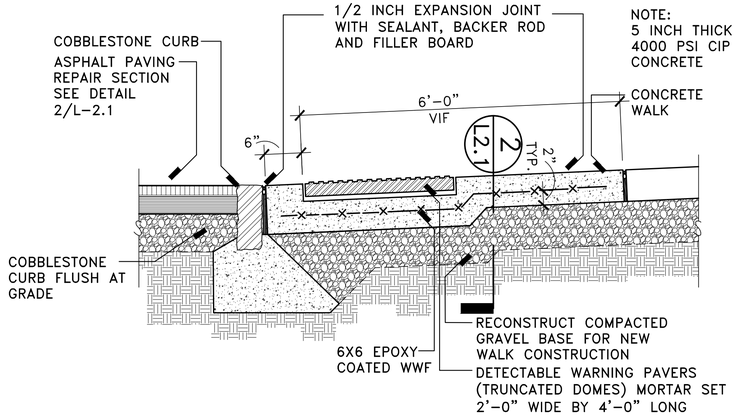
4 / L2.2 LIGHT FIXTURE
SCALE – NTS

NOTE: HANOVER DETECTABLE WARNING PAVER 24 INCH BY 24 INCH 2 INCH THICK COLOR CHARCOAL BY HANOVER ARCHITECTURAL PRODUCTS OR APPROVED EQUIVALENT

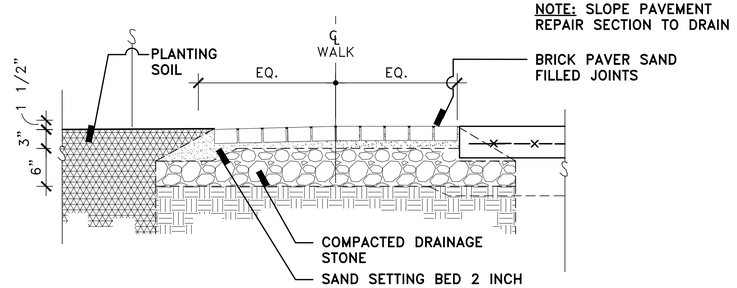


3 / L2.2 SECTION: DETECTABLE WARNING PAVER
SCALE – 1" = 1'-0"

NOTE:
5 INCH THICK 4000 PSI CIP CONCRETE

2 / L2.2 PLAN: BRICK PAVERS ON SAND
SCALE – 1/2" = 1'-0"

NOTE: SLOPE PAVEMENT REPAIR SECTION TO DRAIN



1 / L2.2 SECTION: BRICK PAVERS ON SAND
SCALE – 1" = 1'-0"

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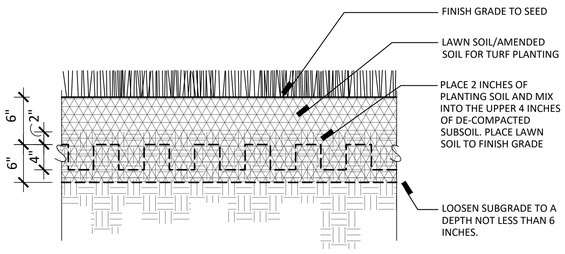


2 L3.1 SECTION: TURF REPAIR AND REESTABLISHMENT

SCALE - 1" = 1'-0"

NOTES:
STAKE TREE WHEN DIRECTED BY THE LANDSCAPE ARCHITECT.

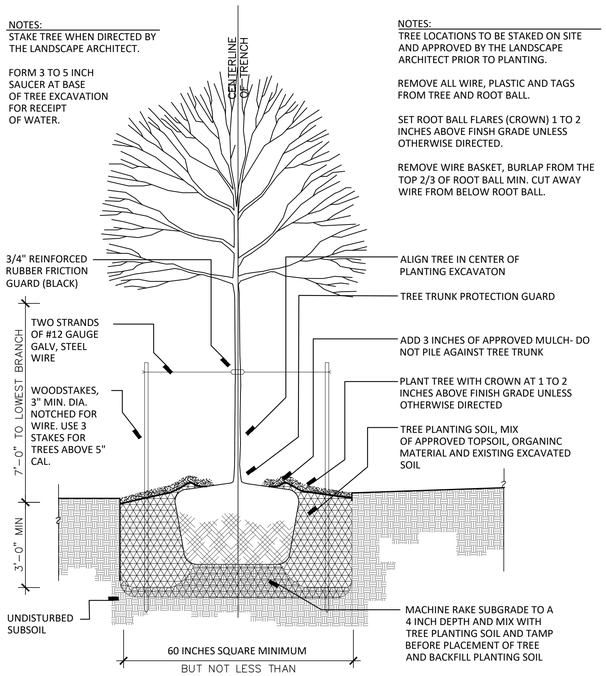
FORM 3 TO 5 INCH SAUCER AT BASE OF TREE EXCAVATION FOR RECEIPT OF WATER.

NOTES:
TREE LOCATIONS TO BE STAKED ON SITE AND APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO PLANTING.

REMOVE ALL WIRE, PLASTIC AND TAGS FROM TREE AND ROOT BALL.

SET ROOT BALL FLARES (CROWN) 1 TO 2 INCHES ABOVE FINSH GRADE UNLESS OTHERWISE DIRECTED.

REMOVE WIRE BASKET, BURLAP FROM THE TOP 2/3 OF ROOT BALL MIN. CUT AWAY WIRE FROM BELOW ROOT BALL.



1 L3.1 SECTION: TREE PLANTING B&B

SCALE - 3/8" = 1'-0"

SCHEDULE OF DECIDUOUS TREES

QTY	KEY	SCIENTIFIC NAME	COMMON NAME	SIZE	Notes
DECIDUOUS TREES:					
55	Qa	Quercus alba	White Oak	2.5 -3.0"	B&B
55	Qm	Quercus muehlenbergii	Chinkapin Oak	5.0-5.5"	B&B

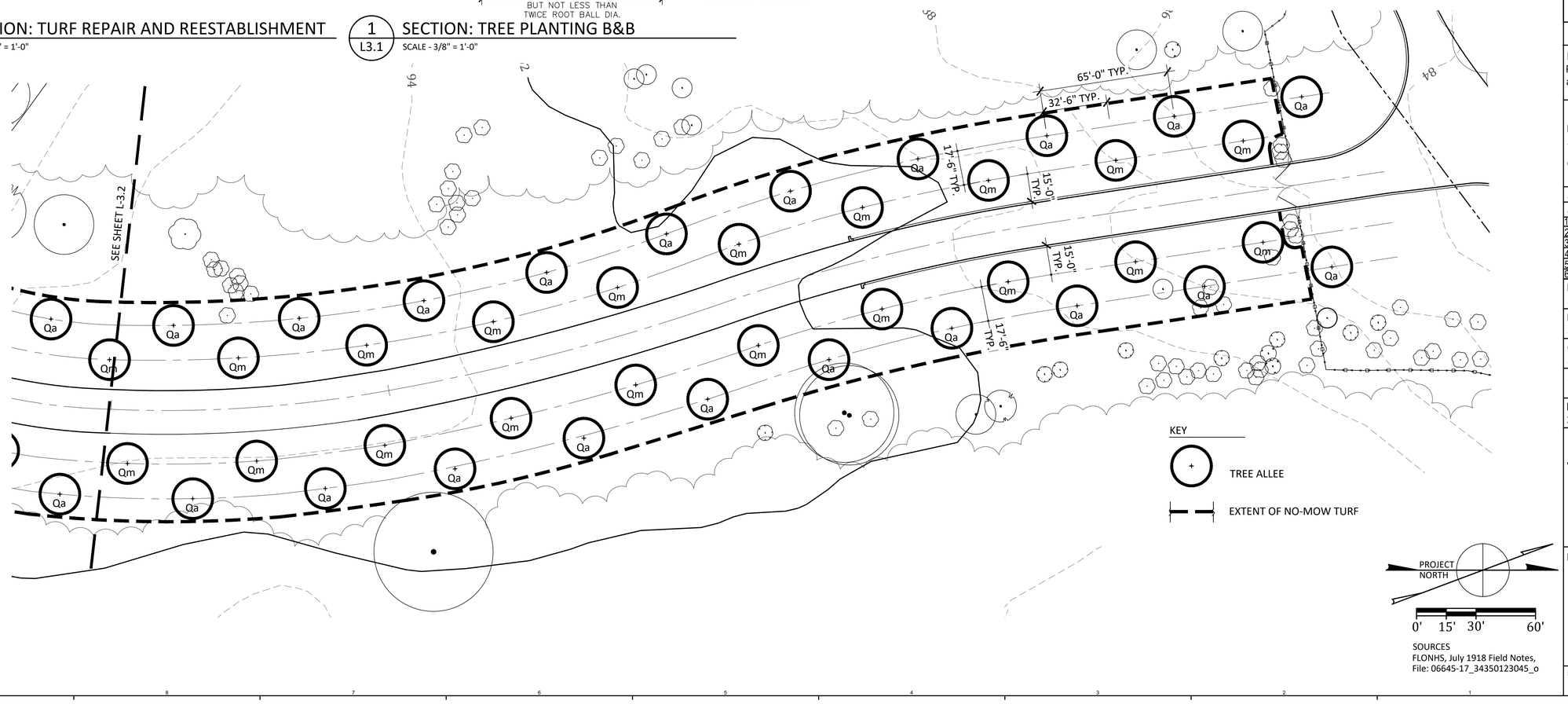
SCHEDULE OF SEEDING

NO MOW TURF MIX			-
22.88%	Festuca commutata	Silhouette Chewing Fescue	
22.48%	Festuca ovina	Quatro Sheep Fescue	
8.50%	Festuca longifolia	SR3150 Hard Fescue	
15.22%	Festuca brevipila	Sword Hard Fescue	
23.18%	Festuca rubra	Rose City Creeping Red Fescue	
7.74%	Lolium multiflorum	Annual Ryegrass	

NOTES:
APPLY NO MOW TURF MIX AT NO LESS THAN 300 LBS/ACRE
ADD 12 LBS. PER ACRE: Lotus comiculatus/Bird's Foot Trefoil Seed to NO-MOW MIX

PLANTING NOTES:

1. PLANTING FIELDS FOUNDATION HAS FIELD TAGGED THE CHINKAPIN AND WHITE OAK TRESS FROM ELHANNON NURSERY LOCATED IN HOOSICK FALLS NEW YORK. 110 TREES HAVE BEEN PURCHASED AND SHALL BE PLANTED AS PART OF THIS PROJECT. 95 OF THE TREES ARE LOCATED ON THESE PLANTING SHEETS WITH THE REMAINING TREES TO BE LOCATED WITHIN THE PLANTING FIELDS ARBORETUM AT AS DIRECTED BY THE LANDSCAPE ARCHITECT.
2. PLANTING WORK UNDER THIS CONTRACT IS TO COORDINATE WITH ELHANNON NURSERY FOR SHIPPING DATES AND UNLOADING BY THIS CONTRACTOR. TRANSIT/LOADING AND SHIPPING COSTS ARE BORN BY THE OWNER.
3. UNLOADING, STORING ON SITE, MAINTENANCE NOT LIMITED TO WATERING, ETC. SHALL BED PART OF THIS WORK
4. THE LANDSCAPE CONTRACTOR SHALL STAKE OUT THE TREES IN ADVANCE OF AND SCHEDULE A TIME TO REVIEW TREE LOCATIONS WITH THE LANDSCAPE ARCHITECT. THE LANDSCAPE CONTRACTOR SHALL ARRANGE FOR THEIR STAFF TO WORK WITH THE LANDSCAPE ARCHITECT IN ADJUSTING TREE LOCATIONS ON SITE AT LEAST ONE HALF DAY PRIOR TO BEGINNING PLANTING OPERATION.
5. PREPARATION , PROVISION OF SEED AND SEEDING OF NO-MOW TURF IS PART OF THIS CONTRACT WORK. THE PLANTING FIELDS FOUNDATION WILL ARRANGED TO HAVE THE EXISTING TURF TREATED WITH AN HERBICIDE IN ADVANCE OF SOIL PREPARATION AND SEEDING OPERATIONS.
6. AREAS OF TURF DISTURBED BY CONSTRUCTION OR AS OTHERWISE INDICATED SHALL BE RESTORED WITH MOWN TURF SEED MIX. SPECIES MIX SHALL BE DETERMINED BY THE THE PLANTING FIELDS ARBORETUM PARK MANGER.
7. CONTRACTOR IS TO SUBMIT BOTH CERTIFIED SEED MIXES FOR THE NO-MOW MIX AND TURF MIX TO THE LANDSCAPE ARCHITECT FOR APPROVAL



SOURCES
FLONHS, July 1918 Field Notes, File: 06645-17_34350123045_o

New York State Parks, Recreation and Historic Preservation

Governor Kathy Hochul | Commissioner Erik Kulleseid

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PO BOX 321, CHARLOTTE, VERMONT 05445
34 WALL STREET, NORWALK, CONNECTICUT 06850

Contract No: PFF 030623

Project Title:
Planting Fields Entry Drive Trees, Walks and Drive Repair

Project Location:
Planting Fields Arboretum
1395 Planting Fields Road
Oyster Bay, New York 11771

REVISIONS

Rev No	Description	Date:
1	Construction Bid Set	2/27/2023
2		
3		
4		
5		
6		

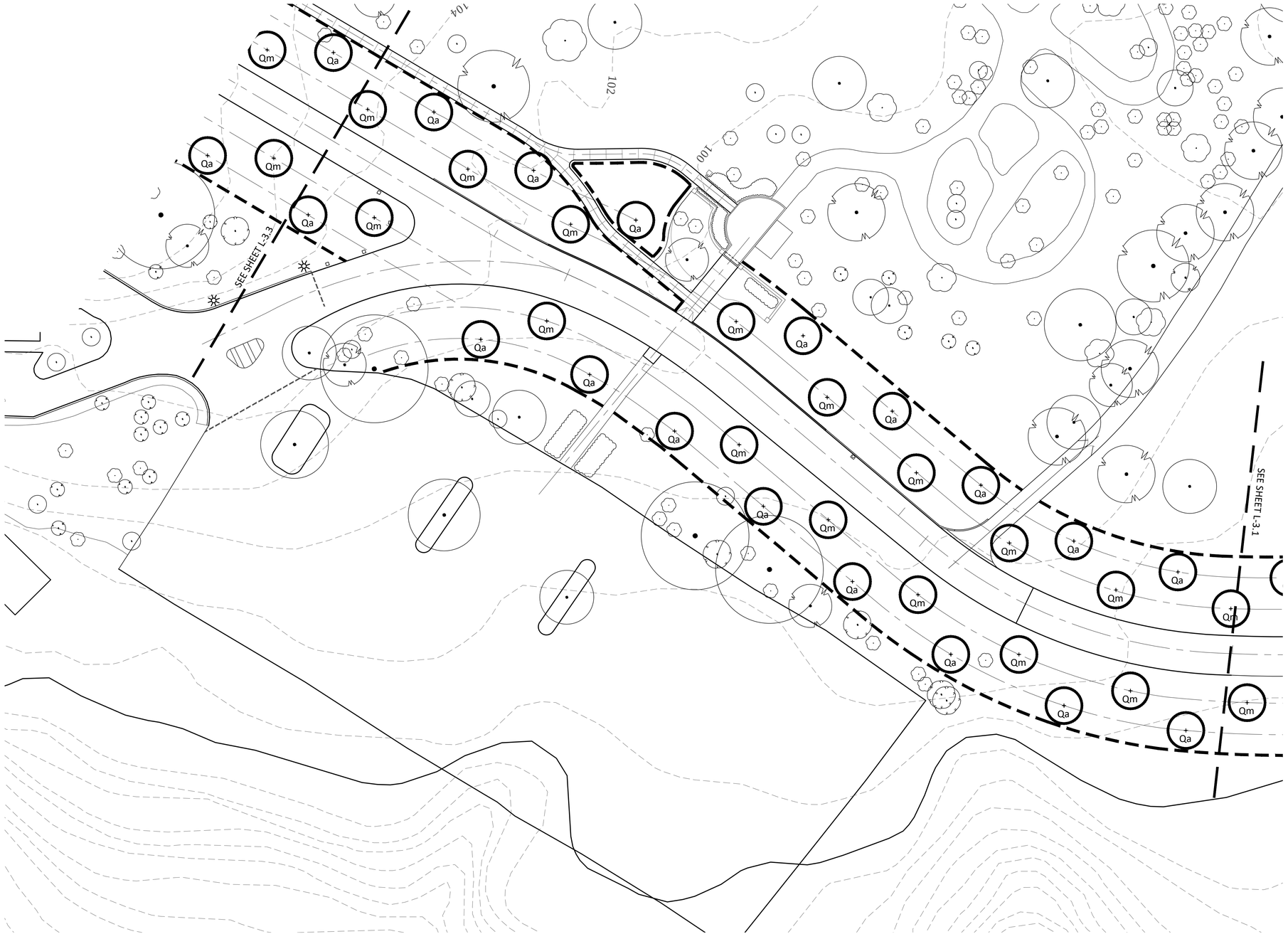
Drawn By: *PV/CS*
Design By: *PV*
Checked By: *POD*
Approved By:
Date: 27 Feb. 2023

Seal and Signature

Sheet Title:
TREE PLANTING PLAN

Drawing Number:
L-3.1

Project Number: PFF ENTRY 0306-2023
Sheet: 16 OF 18



KEY

TREE ALLEE

EXTENT OF NO-MOW TURF

PROJECT NORTH

0' 15' 30' 60'

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LICENSED LANDSCAPE ARCHITECT — PATRICK M. O'DONNELL — 001438 — STATE OF NEW YORK

Sheet Title:

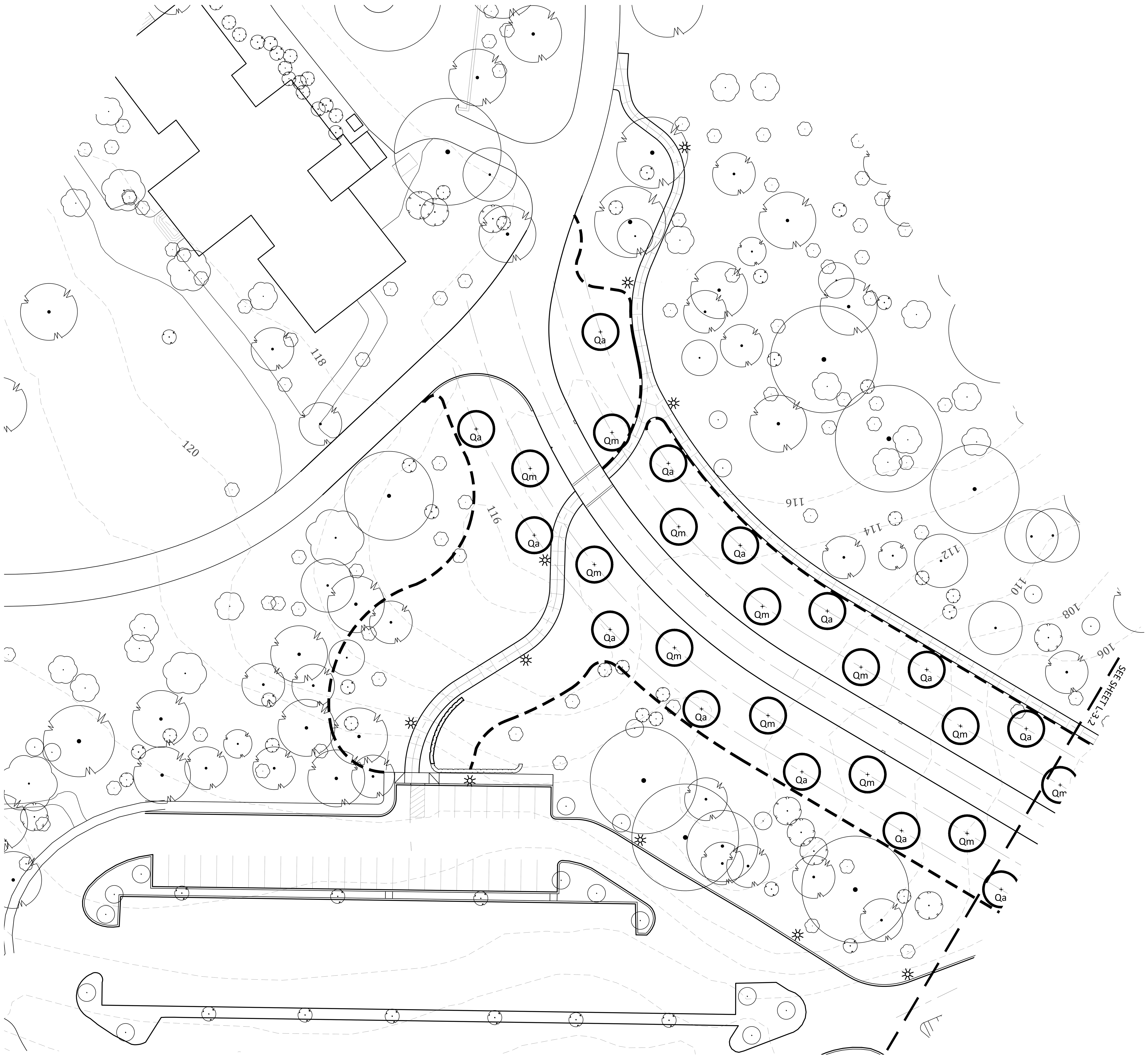
TREE PLANTING PLAN

Drawing Number:

L-3.2

Project Number: PFF ENTRY 0306-2023

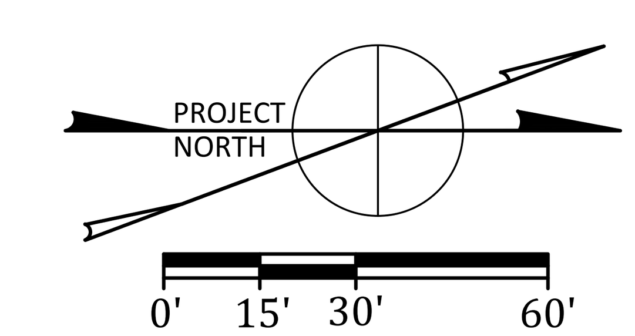
Sheet: 17 OF 18



KEY

TREE ALLEE

EXTENT OF NO-MOW TURF



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Sheet Title:

TREE PLANTING PLAN

Drawing Number:

L-3.3

Project Number: PFF ENTRY 0306-2023

Sheet: 18 OF 18