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VOLUME 1 OF 1

TECHNICAL SPECIFICATIONS

S P E C

FOR

**MURPHEY CANDLER PARK
COMMUNITY GREEN**

PROJECT MANUAL:

CITY OF BROOKHAVEN, GEORGIA

PROJECT #15092.00 C

BID #21-114

PREPARED BY:

CPL Inc.

Land Planning · Landscape Architecture

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April 2021

TECHNICAL PROVISIONS

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Brookhaven Tree Care

COMMUNITY GREEN

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Bidder acknowledges receipt of the following addenda:

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

BASE BID LUMP SUM WITH UNIT PRICES

Base Bid, Single-Prime (All Trades) Contract: The undersigned Bidder, having carefully examined the Procurement and Contracting Requirements, Conditions of the Contract, Drawings, Specifications, and all subsequent Addenda, as prepared by CPL and their consultants, having visited the site, and being familiar with all conditions and requirements of the Work, hereby agrees to furnish all material, labor, equipment services, and all calculated allowances below, necessary to complete the construction of the above-named project, according to the requirements of the Procurement and Contracting Documents, for the stipulated **Lump Sum** of:

_____ Dollars
(\$ _____)
(Total transferred from the Construction Items Bid Schedule

BID GUARANTEE

The undersigned Bidder agrees to execute a contract for this Work in the above amount and to furnish surety as specified within 10 ten days after a written Notice of Award, if offered within 60 sixty days after receipt of bids, and on failure to do so agrees to forfeit to Owner the Bid Bond, as liquidated damages for such failure, in the following amount constituting five percent (5%) of the Base Bid amount above:

_____ Dollars (\$ _____)

SUBCONTRACTORS AND SUPPLIERS

The Bidder shall execute subcontracts for the portions of the Work as indicated on the attached List of Sub-contractors.

TIME OF COMPLETION

The undersigned Bidder proposes and agrees hereby to commence the Work of the Contract Documents on a date specified in a written Notice to Proceed to be issued by Owner and shall fully complete the Work within **120 calendar days.**

TIME SCHEDULE

The City of Brookhaven will charge the Contractor Five Hundred Dollars and no cents (\$500.00) per day for liquidated damages for every day beyond the contracted Time of Completion, **120 calendar days**, that the Work is not complete.

Note: Completed Construction Items Bid Schedule must be completed in full and attached to this Bid Form or be declared Non-Conforming:
See Instructions to Bidders ITB

Bidder further declares that the full name and resident address of Bidder's Principal is:

Authorized Representative
(Print or Type)

Authorized Representative
(Signature)

Signed, sealed, and dated this _____ day _____, 2021

Notarized _____ (Seal)

My Commission Expires _____

Company Name and Address:

Principal: _____

Title: _____

SECTION 01010

SUPPLEMENTAL CONDITIONS

- 1.1 General: These Conditions are a Supplemental Conditions to the General Conditions of the Contract for Construction
- 1.2 Drawings and Specifications: See Cover Sheet of Drawings for list of Contract Drawings.

See Table of Contents of Project Specifications for list of Technical Specification Sections. Pay particular attention to Division 1 of the Specifications as they apply to the General Conditions.
- 1.3 Temporary Equipment: See Section 01600 Materials and Equipment for more detail.
- 1.4 Lifting Devices and Hoisting Facilities: The Contractor shall provide, operate and maintain construction cranes for hoisting materials, as well as other type hoists, as may be required for execution of the work of all trades as identified in the contract documents and specifications. Such apparatus, equipment and construction shall meet the requirements of labor laws and other applicable state and federal laws.
- 1.5 Temporary Support Facilities: See Section 01500 Construction Facilities.
- 1.6 Layout of Site Work: See Section 01050 Field Engineering for general descriptions.

Specific Requirements:

Before commencing any work, the Contractor shall verify all grades, lines, levels and dimensions as indicated on the Drawings. He shall report any errors or inconsistencies to the Landscape Architect before commencing work.

The Contractor shall stake the entire project, both as to location of all construction items as well as finish grades. This stakeout may be accurate or rough, depending on the Contractor's preference. This stakeout shall be made early in the construction process and preserved for reference during construction.

The purpose of the staking, with inspection and adjustment by the Landscape Architect, is to adapt the design to the site rather than allow the design to be forced upon the site. Staking is subject to various degrees of adaptation which can only be determined by the Landscape Architect. This variation is an aesthetic decision, the amount of adjustment most often determined by the existing trees, terrain, soil conditions, utilities, sub-surface water and by other intangibles which are impractical to survey in absolute accuracy.

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The Contractor shall notify the Landscape Architect at least five working days before inspection of the stakeout must be made. During the inspection the Landscape Architect will adjust the stakeout as necessary to fit the trees, topography, and all other objects and conditions on the site. At this time the Landscape Architect will clearly mark all trees and

other vegetation to be removed. This staking-inspection process must take place prior to any tree removal, grading, construction, or any other work on the site.

During the inspection, the Contractor shall be at the site along with the person who will superintend the work under this contract.

The staking inspection process shall be repeated for any work not staked and approved or adjusted during the first site visit. No work shall ever be done without the stakeout first being adjusted and approved by the Landscape Architect. All alignment, dimensions and elevation of any grading, excavation, construction, and planting is subject to adjustment to accommodate existing conditions and to save trees and other vegetation.

Any work progress delays caused by inadequate, incomplete or improper staking shall not merit an extension of the contract or delay charges by the contractor.

The Landscape Architect shall have 2 days to respond to any request to come to the site and adjust a stakeout.

The Landscape Architect shall have a minimum of three (3) days to resolve any problems created by unknown conditions discovered during the stakeout or construction.

Contractor shall be responsible to adequately schedule his work to allow constant work to continue. When unknown conditions inhibit the flow of work the contractor shall continue unhindered portions elsewhere on the project and notify the Landscape Architect immediately.

1.7 Unknown Conditions: Subsurface Conditions: Should the Contractor encounter, during the progress of the work, subsurface latent physical conditions at the site, materially differing from those shown on the drawings or specified for unknown conditions of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the drawings and Specifications, the attention of the Landscape Architect shall be called immediately to such conditions before they are disturbed. The Landscape Architect shall thereupon promptly investigate the condition, and if he finds that they do so materially differ, the contract price shall, with the written approval of the Owner, be increased or decreased in accordance with such conditions.

1.8 Geo-Technical Assistance. The Contractor shall coordinate the involvement and schedule of the Geotechnical Consultant for the project.

The Owner will retain at his own expense the services of a qualified geo-technical engineer to advise on all construction techniques involved in the work, including the design, checking and approval of temporary bracing, shoring, underpinning and other items pertinent to the work, and on construction methods for solution of problems which may be encountered. The geo-technical engineer shall be primarily concerned with construction methods necessary to prevent settlement or failure of walkways, foundations, footings, and/or damage to such surrounding structures as sidewalks, roads, utilities, and embankments on the Owner's property.

- 1.9 Existing Utilities Shown. Existing utility lines shown on the drawings, such as, cables, ducts, conduits, and piping shall, if damaged (unless they are to be abandoned) be immediately repaired, protected, and maintained in use until relocation of same has been completed or shall be cut and capped where directed or shall be prepared for service connections when so required.

Note: Electrical service to the site will come through the bathroom distribution panel in the building on site.

- 1.10 Utilities Not Shown. Contractor shall be responsible for securing the services of a utility locator to determine any unknown utilities that may be on the site. Any utilities encountered that are not shown on the drawings and are to remain as active utilities, if inadvertently damaged by the Contractor, shall be repaired by him. An adjustment in the contract price will be made at rates determined by the Contractor and approved by the Landscape Architect. If an extra expense is incurred in protecting and maintaining any utility line not shown on the drawings, an adjustment in the price will be made. Contractor shall not be compensated if the utility was improperly located or omitted by locator if it is deemed that the utility could have been detected.

- 1.11 Inclusion of Accessories: Unless specifically mentioned otherwise, all anchors, bolts, screws, fittings, fillers, hardware accessories, trim and other parts required for, or in connection with, an item of material to make a complete, serviceable, finished and first quality installation shall be furnished and installed as part of the item whether or not shown on the drawings or specified.

- 1.12 Protection: All materials shall be shipped, stored and handled in a manner that will afford protection and ensure their being in first class condition at the time they are incorporated in the work.

After installation all materials shall be properly protected against damage to insure their being in first class condition when the project as a whole is completed and accepted by the Owner.

- 1.13 Installation: All items shall be installed in a workmanlike manner in accordance with the best recognized practice of the trade. Manufactured items shall be installed in strict accordance with the manufacturer's printed directions, specifications and/or recommendations. All working parts shall be properly adjusted after installation and left in perfect working order. Unless otherwise indicated, items exposed to weather or subject to flooding shall be installed so as to shed water. Items shall in all cases be installed plumb and true and/or in proper relation to surrounding materials.

Samples: Contractor shall be responsible for preparing samples as required in the technical specifications and to obtain approvals prior to construction of the item.

- 1.14 Reference to Standard Specifications: When standard specifications such as The American Society for Testing and Materials, Federal Specifications, Department of Commerce (Commercial Standards), American Institute of Steel Construction, or other well known public or trade associates are cited as a standard to govern materials, and/or workmanship,

such specifications or portions thereof as referred to shall be equally as binding and have the full force and effect as though it were copied into these specifications. Such standard as are mentioned are generally recognized by and available to the trades concerned.

- 1.15 Reference to Manufacture's Publications: Unless otherwise specifically stated, all manufacturer's catalogs, specifications, instructions or other information or literature that are referred to in the specifications shall be considered as the latest edition and/or revision of such publication that is in effect on the date of the Invitation or Advertisement for Bids.
- 1.16 Document Signatures: See General Conditions.
- 1.17. Materials Furnished by Others: Whenever the Contractor or any Subcontractor shall receive items from another contractor or from the Owner for storage, erection or installation, the Contractor or Subcontractor receiving such items shall give receipts for items delivered, and any necessary replacing of item or items received. No adjustment will be made to contract price for increased insurance premiums, except for materials and/or equipment furnished by the Owner and not listed as such in other Contract Documents.
- 1.18. Substitute Materials and Equipment: See Section 01631 Substitutions for more detail.

Approval, by the Landscape Architect, of substitute materials and equipment shall not relieve the Contractor from his responsibility to supply and install any additional materials, equipment, or labor required to make the substitution properly function within the intent of the Contract Documents, as issued for Bid, whether or not recognized by the Landscape Architect or Contractor. The Contractor shall supply and install such required additional cost to the Owner.

- 1.19. Protection of Existing Structures: The Contractor shall be liable for all damage to existing structures that occurs as a result of his negligence to provide proper and adequate protective measures, including but not limited to buildings, walls, fences, paving, conduits, furniture, pipe, wiring, drains, underground utilities and equipment.

The Contractor shall be liable for all damage to trees, shrubs, turf and other vegetation. See Tree Penalty Clause in Section 02112, page 2.

- 1.20. Security Considerations: Construction shall not interfere with reasonable access to the adjacent park facilities.

Contractor shall not interfere with reasonable use of the park and site facilities.

Due to the possibility of multiple contractors working within the Horseshoe Loop Road area, the contractor shall be responsible to coordinate with other in-park contractors during the course of the project construction.

- 1.21. Working Hours: See General Conditions.

- 1.22. Order of Construction: Contractor shall submit a progress schedule at the pre-construction conference outlining the order of his construction process - Priorities within this schedule shall be coordinated with the Owner. See Section 01040 Coordination for more detail.

Sequence of Work. Work is to be processed in an orderly manner. The organization of the Specifications or contract drawings does not necessarily indicate the order of sequence in which work is to be performed. If prior construction or other contractors on the project site shall interfere with this work, the Landscape Architect shall declare the time and date when this project contract can be started on the site.

Contractor shall not be granted extensions or delay charges when it is deemed clearly that Contractor could have continued work on other components of the project or locations on the site without suffering a delay in the process.

- 1.23. Record of Construction Changes and As-Built Documents: On completion of the work, the Contractor shall mark the appropriate contract drawings in indelible ink showing the final locations of all underground installations including, but not limited to, power lines, irrigation lines, sewage lines, drainage lines, septic tanks, fuel tanks, etc. They also shall record the proper location of all installations above ground where they have been changed on the site from designated locations on the plans.

Contractor shall provide a flash drive containing the as-built plans to the Owner upon completion of the project.

- 1.24. Guarantee: See Section 017040 Warranties for more detail descriptions. All landscape materials shall be guaranteed by the Contractor in accordance with Section 02900.

- 1.25. Application for Payment: See Section 01027 Application of Payment for detail instructions.

- 1.26. Certificates for Payment: Upon receipt of Application for Payment, Owner's Representative with the Landscape Architect shall make an inspection and issue to the Contractor a Certificate for Payment or state in writing to the Contractor a Certificate for Payment or state in writing to the Contractor the corrections which must be made according to the plans and Specifications before he shall be paid. These corrections shall be made at once, and the Owner's representative shall issue a Certificate for Payment on their acceptance. The Owner shall pay the full amount of the Certificate within fifteen (15) days after receiving the Certificate for Payment from the Owner's Representative.

1.27. Quantities and Measurements: NOTE TO CONTRACTOR

The following principles shall govern the settlement of disputes which may arise over discrepancies in the contract documents: (a) as between figures given on drawings and the scaled measurements, the scaled measurements shall govern; (b) as between large-scale drawings and small-scale drawings, the larger scale shall govern; (c) as between drawings Form of Agreement and the Specifications, requirements of the Form of Agreement shall govern.

- 1.28. Maintenance: The Contractor shall be responsible for all maintenance, as required, until completion and acceptance of the work. Various items of maintenance are indicated in

applicable sections of the Technical Specifications, to which the Contractor is referred. The Owner shall become responsible for maintenance upon completion and final acceptance of the work.

END OF SUPPLEMENTAL CONDITIONS

SECTION 01026

SCHEDULE OF VALUES

PART 1 GENERAL

1.0 SCOPE

The work under this Section includes preparation and submittal of a Schedule of Values.

The Construction Items Bid Schedule may substitute for the Schedule of Values when the project is bid by using a Construction Items Bid Schedule to determine the Total Bid Amount. In that case, the Construction Items Bid Schedule can be substituted for the Schedule of Values in this Section of the Specifications.

See Section 00-350 Construction Items Bid Schedule
See Section 01027 Application for Payment for more detail.

2.0 GENERAL

- A. Timing of Submittal: Submit to the Landscape Architect, a Schedule of Values allocated to the various portions of the work, within 10 days after Notice to Proceed. The first progress payment will not be made until the next pay cycle following the Landscape Architect's approval of the Contractor's Schedule of Values.
- B. Supporting Data: Upon request of the Engineer, support the values with data which will substantiate their correctness.
- C. Use of Schedule: The schedule of values, unless objected to by the Landscape Architect, shall be used only as a basis of the Contractor's Application for Payment.
- D. Construction Items Bid Schedule may serve as the Schedule of Values.
- E. Construction Items Bid Schedule form is available through the Consultant in Excel electronic format upon request.

3.0 FORM AND CONTENT OF SCHEDULE OF VALUES

- A. Form and Identification
 1. Prepare schedule of values on 8-1/2 x 11-inch paper in landscape format.
 2. Contractor's standard forms and automated printout may be used.
 3. Identify schedule as: ***Community Green – City of Brookhaven***
 - a. Title of project & location: *Community Green, Murphey Candler Park*
 - b. Landscape Architect
 - c. Name and address of Contractor

- d. Contract designation
- c. Date of submission

- B. Schedule shall list the installed value of the component parts of the Work in sufficient detail to serve as a basis for computing values for progress payments during construction. Breakdown shall be by number and construction items, for ease of field verification of quantities completed in each line item.

See Section 01027 Applications for Payment for more detail.

C. Format

- 1. Follow the Construction Items Bid Schedule of the Contract Documents as the format for listing the component items quantities and costs.
- 2. Identify each item with the number and name of the respective item of the Schedule.

- D. For each major line item, list sub-values of major products or operations under the items as shown on the Construction Items Bid Schedule and Bid Form.

E. For the Various Portions of the Work:

- 1. Each construction item shall exclude any proportional amount of the Contractor's overhead and profit.
- 2. For items on which progress payments will be requested for stored materials, break down the value into:
 - a. The cost of the materials delivered and stored, with taxes paid.
 - b. The total installed value, less Contractor's overhead and profit and less item a. above.
 - c. Copies of the delivery manifest and supplier invoice.

- A. Mobilization is identified as a separate line item so the contractor can bill ahead to secure operational capital to begin the project.

- B. General Conditions and Overhead shall be shown as a separate line item at the bottom and not calculated into the unit items costs.

- C. Additional Items: At the end of the Construction Items Bid Schedule the contractor may add additional line items that he feels were not listed or should be further broken down.

- D. When the Construction Items Bid Schedule is used to bid the project, the sum of all the values listed on the Construction Items Bid Schedule plus all addenda shall equal the Bid Total or Contract Amount as shown on the Bid Form.

END OF SECTION 01026

SECTION 01027

APPLICATIONS FOR PAYMENT

1.1 GENERAL

- A. Coordinate the Construction Items Bid Schedule and Applications for Payment with the Contractor's Schedule of Payment, Submittal Schedule, and List of Subcontracts.
- B. Coordinate preparation of the Construction Items Bid Schedule with preparation of the Contractor's Project Construction Schedule of Work.
 - 1. Correlate line items in the Construction Items Bid Schedule with other required administrative schedules and forms, including:
 - a. Contractor's Project Construction Schedule.
 - b. Application for Payment forms, including Continuation Sheets.
 - c. List of subcontractors and consultants.
 - d. List of products.
 - e. List of principal suppliers and fabricators.
 - f. Schedule of submittals.
 - g. Schedule of materials stored
 - 2. Submit the Project Construction Timeline Schedule at the earliest possible date but no later than 7 days before the date scheduled for submittal of the first Application for Payment.
- C. Format and Content: Use the Construction Items Bid Schedule as the format for establishing the Schedule of Payment. Provide at least one-line item for each Unit Item on the Construction Items Bid Schedule as a payment item.
 - 1. Include the following Project Identification *Murphey Candler Park Community Green - City of Brookhaven* –
 - a. Project name and location – *Community Green at Murphey Candler Park*
 - b. Name of Consultant – *CPL Inc.*
 - c. Project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 - 2. Arrange the Schedule of Payment items in tabular form with separate columns to indicate the following for each item listed:
 - a. Item number.
 - b. Name of the item.
 - c. Total quantity of the item.
 - d. Unit price.
 - e. Total price.

- f. Current work completed by dollar value.
 - g. Previous dollar amount completed.
 - h. Percentage of Item Sum completed to nearest one-hundredth percent.
3. Provide separate backup for each part of the Work where the Application for Payment includes materials or equipment, purchased or fabricated and materials stored, but not yet installed.
 4. Change Orders or Construction Change Directives that change the Contract Sum must be pre-approved before commencing the work or applying for payment. Pre-approved change orders may be attached to the application for payment as a new items line at the bottom of the Payment Schedule after completion and acceptance of the change order work.
 5. Maintain a chronological and on-going Ledger List of minor field deletions or additions to the contract to be attached to each payment request.
 6. Consultant can provide a sample Pay Request if requested by contractor.
- D. Applications for Payment shall be consistent with previous applications and payments as certified by the Owner's Representative and paid to date by the Owner.
- E. Payment-Application Times: Payment dates are indicated in the Agreement. The period covered by each application is the period indicated in the Agreement.
- F. Payment-Application Forms: Use AIA Document G702 and Continuation Sheets G703 as the form for Applications for Payment, or the form supplied by the Owner.
- G. Application Preparation: Complete every entry, including notarization and execution by a person authorized to sign on behalf of the Contractor. The Landscape Architect will return incomplete applications without action.
1. Entries shall match data on the Schedule of Payment and the Contractor's Construction Items Bid Schedule. Use updated schedules if revisions were made.
 2. Include amounts of Change Orders and Construction Change Directives approved prior to the last day of the construction period covered by the application.
- H. Transmittal: Submit 3 executed original copies of each Application for Payment to the Owner's Representative within 24 hours. One copy shall be complete, including waivers of lien and similar attachments.
1. Transmit each copy with a transmittal listing attachments and recording appropriate information related to the application.
- I. Waivers of Mechanics Lien: With each Application for Payment, submit waivers of lien from every entity who may file a lien arising out of the contract and related to the work covered by the payment.

1. Submit partial waivers on each item for the amount requested, prior to deduction for retainage, on each item.
 2. When an application shows completion of an item, submit final or full waivers.
 3. Submit each Application for Payment with Contractor's waiver of lien for the period of construction covered by the application.
 - a. Submit final Applications for Payment with final waivers from every entity involved with performance of the Work covered by the application who may file a lien.
 4. Waiver Forms: Submit waivers of lien on forms, and executed in a manner, acceptable to the Owner.
- J. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of the first Application for Payment include the following:

Provisions of the contract regarding payment shall supersede any applicable provisions of the Georgia Prompt Payment Act.

1. List of subcontractors.
 2. List of principal suppliers and fabricators.
 3. Schedule of Payments.
 4. Contractor's Construction Schedule (*preliminary if not final*).
 5. Submittal Schedule (*preliminary if not final*).
 6. List of Contractor's staff assignments.
 7. Copies of necessary building permits.
 8. Copies of required licenses from governing authorities.
 9. Certificates of insurance and insurance policies.
 10. Performance and payment bonds.
 11. Traffic control plan if required
- K. Application for Payment at Substantial Completion: Following issuance of the Certificate of Substantial Completion, submit an Application for Payment. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

1. Administrative actions and submittals that shall precede or coincide with this application include the following:

Provisions of the contract regarding payment shall supersede any applicable provisions of the Georgia Prompt Payment Act:

- a. Occupancy permits.
- b. Warranties and maintenance agreements.
- c. Test/adjust/balance records.
- d. Maintenance instructions.
- e. Meter readings.
- f. Changeover information related to Owner's occupancy.
- g. Final cleaning.
- h. Application for reduction of retainage and consent of surety.

1. Final Payment Application: Administrative actions and submittals that must precede or coincide with submittal of the final Application for Payment include the following:
 - L. Retainage: Client shall retain 10% of all approved pay requests until substantial completion of the project. Retainage may drop to 5% until final inspection and acceptance with approval of the Owner.
 1. Completion of Project closeout requirements.
 2. Completion of items specified for completion after Substantial Completion.
 3. Transmittal of Project construction records to the Owner.
 4. Certified As-Built survey.
 5. Proof that taxes, fees, and similar obligations were paid.
 6. Removal of temporary facilities and services.
 7. Change of door locks to Owner's access.
 8. Fulfillment of all erosion control measures.
 - M. Final Ledger: Contractor shall request payment for 100% of all construction items as shown on the Construction Schedule and Payment Request. The final tabulation of the ledger will be either a subtraction from the total contract or an addition. In the case of subtractions, the contractor shall enter the total deleted at the bottom of the request. In the case of an addition, the Landscape Architect shall prepare a final change order for approval by the Contractor and Owner.
- 1.2 PRODUCTS (Not Applicable)**
- 1.3 EXECUTION (Not Applicable)**

END OF SECTION 01027

SECTION 01035

MODIFICATION PROCEDURES

1.1 GENERAL

- A. Minor Changes in the Work: The Landscape Architect will issue instructions authorizing changes in the Work that do not alter the contract amount on AIA Form G710.
- B. Owner-Initiated Change Order Proposal Requests: The Landscape Architect will issue a description of proposed changes in the Work that require adjustment to the Contract Sum or Time. The description may include supplemental or revised Drawings and Specifications.
 - 1. Proposal requests are for information only (RFI). Do not consider them an instruction to stop work or to execute the proposed change.
 - 2. Within 20 days of receipt of a Change Request, submit an estimate of costs necessary to execute the change for the Owner's review.
 - a. Include an itemized list of products required and unit costs, with the total amount of purchases.
 - b. Use unit costs from the Schedule of Values. If unit costs have to change, submit detail documentation to explain the need to change a unit price.
 - c. Indicate taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - d. Indicate the effect the change will have on the Contract Time.
- C. Contractor-Initiated Proposals: When unforeseen conditions require modifications, the Contractor may submit a request for a change to the Landscape Architect.
 - 1. Describe the proposed change. Indicate reasons for the change and the effect of the change on the Contract Sum and Time.
 - 2. Include an itemized list of products required and unit costs, with the total amount of purchases.
 - 3. Indicate taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - 4. Additional work already included on the Schedule of Values shall be submitted at the same price as originally quoted unless otherwise agreed prior to submittal.
- D. Proposal Request Form: Use AIA Document G709.
- E. Allowance Adjustment: Base Change Order Proposals on the difference between the purchase amount and the allowance, multiplied by the measurement of work-in-place. Allow for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.
 - 1. Include installation costs only where indicated as part of the allowance.
 - 2. Prepare explanations and documentation to substantiate margins claimed.

3. Submit substantiation of a change in work claimed in the Change Orders related to unit-cost allowances and quantities.
- F. Submit claims to increase costs due to a need to change an allowance, whether for purchase order amount or handling, labor, installation, overhead, and profit. Submit claims within 21 days of receipt of authorization to proceed. The Owner will reject claims submitted later than 21 days.
1. Do not include indirect expense in cost amount unless the Work has changed from that described in Contract Documents.
 2. No change to indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.
- G. Construction Change Directive: When Owner and Contractor disagree on the terms of a Proposal Request, the Architect may issue a Construction Change Directive on AIA Form G714 instructing the Contractor to proceed with a change.
1. The Construction Change Directive contains a description of the change and designates the method to be followed to determine change in the Contract Sum or Time.
- H. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
1. After completing the change, submit an itemized account and supporting data to substantiate Contract adjustments.
- I. Change Order Procedures: Upon the Owner's approval of a Proposal Request, the Architect will issue a Change Order on AIA Form G701.
- J. Contractor shall submit Requests for Information (RFI) whenever items or parts of the central documents are unclear or incorrect. Contractor shall maintain a list of Requests by number and date with responses from the Architect.
- K. Unit Item Cost: When changes effect unit items for which costs have already been established, change request must utilize the agreed unit prices for additions or deletions.
- L. Unit Item Cost Changes: Unit item costs previously accepted by the Owner may be subject to change if the contractor submits sufficient documentation to verify the need for such a change.

1.2 PRODUCTS (Not Applicable)

1.3 EXECUTION (Not Applicable)

END OF SECTION 01035

SECTION 01040

COORDINATION

1.1 GENERAL

- A. This Section includes requirements for coordinating construction operations including, but not necessarily limited to, the following:
1. Coordination drawings.
 2. Administrative and supervisory personnel.
 3. Coordinate with Project Landscape Architect/Engineer.
 4. Clearing and protection.
 5. Coordinating with Parks Manager or Owner's Representative
 6. Staking Layout and Utility Locations
 7. Utilities connections and coordination with all utility providers.
 8. Coordinate with Municipal agencies to close streets and control traffic.
 9. Coordination between various sub-contractors.
 10. Coordination between other on-site contractors.
 11. Coordination with other contractors engaged by the Client or utility.
 12. Coordination of sleeves, pipe holes, and other items to assist subcontractors

1.2 COORDINATION

- A. Coordinate construction to assure efficient and orderly installation of each portion of the Work. Coordinate operations that depend on each other for proper installation, connection, and operation.
1. Schedule operations in a sequence required to obtain the best results where installation of one part depends on installation of other components, before or after its own installation.
 2. Coordinate installation of different components to assure maximum accessibility for maintenance, service, and repair.
 3. Make provisions to accommodate items scheduled for later installation.
 4. Schedule operations with Parks Director to avoid interference with pre-scheduled operations by tenants.
 5. Coordinate with local permitting agencies to secure timely approvals of the work.
 6. Coordinate with local law enforcement to execute a Traffic Control Plan.
- B. Where necessary, prepare memoranda for distribution to each party involved, outlining procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.
1. Prepare similar memoranda for the Owner and separate contractors where coordination of their work is required.
 2. Notify Owner when pre-scheduled park events may constitute a hardship for the contractor.

3. Prepare weekly reports during construction to be given to industrial park tenant
- C. Administrative Procedures: Coordinate scheduling and timing of required procedures with other activities to avoid conflicts and assure orderly progress. Such activities include, but are not limited to, the following:
1. Preparation of schedules.
 2. Delivery and processing of submittals.
 3. Progress meetings.
 4. Project closeout activities
- D. Conservation: Coordinate construction to assure that operations are carried out with consideration for conservation of energy, water, and materials.
1. At the request of the Owner, salvage materials and equipment involved in performance of, but not incorporated in, the Work.
 2. Deliver salvaged items to location to be specified by the owner.
- E. Coordination Drawings: Prepare coordination drawings if needed for installation of products and materials fabricated by separate entities. Prepare coordination drawings where limited space necessitates maximum utilization of space for efficient installation of different components.
1. Show the relationship of components shown on separate shop drawings.
 2. Indicate required installation sequences.
 3. Comply with requirements contained in Section "Submittals."
- F. Staff Names: On date of Pre-Construction meeting, submit a list of the Contractor's staff assignments, including the superintendent and other personnel assigned to the Project. Identify individuals and their responsibilities. List their addresses and telephone numbers.
1. Provide copy of list to the owner and Landscape Architect/Engineer.
 2. Post copies in the Project meeting room, the temporary field office, and each necessary telephone number.
 3. Contractor shall always maintain a list of site tenants and their contact information on site in the construction trailer.
- G. Subcontractor Assistance:
It is the Contractor's duty to coordinate with his subcontractors in advance so that pipe holes, sleeves, inserts, etc., for subcontractors are installed as work progresses. This includes coordination with other independent Contractors working on related work.

1.3 **PRODUCTS** (Not Applicable)

1.4 **EXECUTION**

- A. Inspection of Conditions: Require Installers of major components to inspect substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected. Provide photographs and daily reports of the inspected conditions.
- B. Coordinate temporary enclosures with inspections and tests to minimize the need to uncover completed construction.
- C. Clean and protect construction in progress and adjoining materials, during handling and installation. Apply protective covering to assure protection from damage.
- D. Clean and maintain completed construction as necessary through the construction period. Adjust and lubricate operable components to assure operability without damaging effects.
- E. Limiting Exposures: Supervise construction to assure that no part is subject to harmful, dangerous, or damaging exposure. Such exposures include, but are not limited to, the following:
 - 1. Excessive static or dynamic loading.
 - 2. Excessive internal or external pressures.
 - 3. Excessively high or low temperatures.
 - 4. Water exposure
 - 5. Solvents and chemicals.
 - 6. Abrasion.
 - 7. Soiling, staining, and corrosion.
 - 8. Combustion.
- F. Park Event Schedules: Coordinate with the Parks Director to schedule and accommodate particular events.

END OF SECTION 01040

SECTION 01045

CUTTING AND PATCHING

1.1 GENERAL

- A. Cutting and Patching Proposal: Submit a proposal describing procedures in advance of the time cutting and patching will be performed. Request written approval by the Project Landscape Architect/Engineer to proceed. Include the following:
1. Describe extent of cutting and patching. Describe how action will be performed and indicate why it cannot be avoided.
 2. Describe changes to existing construction. Include changes to structural elements, operating components, changes to the building's appearance and/or other significant visual elements.
 3. List products to be used and firms that will perform work.
 4. Indicate dates and completion timeline for cutting and patching to be performed.
 5. Utilities: List utilities that will be disturbed or relocated and those that will be temporarily out-of-service. Indicate dates and timeline of service that will be disrupted.
 6. Where cutting and patching involves adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with the original structure.
 7. Approval to proceed does not waive the Project Landscape Architect/ Engineer's right to later require complete removal and replacement of unsatisfactory work.
- B. Requirements for Structural Work: Do not cut and patch structural elements in a manner that would affect their load-carrying capacity or load-deflection ratio.
1. Obtain written approval from the Project Engineer before cutting and patching the following structural elements:
 - a. Foundation construction.
 - b. Bearing and retaining walls.
 - c. Asphalt roads and parking.
 - d. Utility lines or storm pipes.
 - e. Brickwork or sidewalks.
 - f. Free standing walls of fences.
- C. Operational Limitations: Do not cut and patch operating elements in a manner that would reduce their capacity to perform as intended. Do not cut and patch operating elements in a manner that would increase maintenance or decrease operational life or safety.
1. Obtain permission for operating utility provider before cutting a utility.
 2. Advise the Owner of any utility shut down before work begins.

3. Obtain written approval from the Landscape Architect before cutting and patching the following operating elements or safety related systems:
 - a. Primary operational systems and equipment.
 - b. Fire protection systems.
 - c. Electrical wiring systems.
 - d. Public address system.
 - e. Traffic control systems.
 - f. Gas, water, phone, power, cable or other utility systems.

- D. Visual Requirements: Do not cut and patch exposed construction in a manner that would, in the Project Landscape Architect's opinion, reduce the structure's aesthetic qualities. Do not cut and patch in a manner that would result in visual evidence of cutting and patching. Remove and replace any construction cut and patched that is deemed visually unsatisfactory by the Project Landscape Architect and Owner.

1.2 PRODUCTS

- A. Use materials identical to existing materials. Use materials that visually match adjacent surfaces to the fullest extent possible if identical materials are unavailable. Use materials whose performance will equal that of existing materials.

1.3 EXECUTION

- A. Examine surfaces to be cut and patched and conditions under which work is to be performed before cutting. If unsafe or unsatisfactory conditions are encountered, take corrective action:
 1. Before proceeding, meet with parties involved. Review areas of potential interference and conflict for the tenants of the parks. Coordinate procedures and resolve potential conflicts before proceeding:

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

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

- D. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

- E. Avoid cutting pipe, conduit, or ductwork serving the project site or business, but scheduled to be removed or relocated until provisions have been made to bypass them.

- F. Performance: Employ skilled workmen. Proceed at the earliest feasible time and complete without delay:

1. Coordinate construction so as to install necessary components and/or perform construction (i.e. subsequent fitting and patching required to restore surfaces to their original condition).
- G. Cutting: Cut using methods that will not damage elements retained or adjoining construction. Comply with the original Installer's recommendations:
1. Use hand or small power tools designed for sawing or grinding, (i.e. not hammering and chopping). Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 2. To avoid marring finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
 3. Cut through concrete and masonry using a cutting machine, such as a Carborundum saw or a diamond-core drill.
 4. Comply with requirements of applicable Division 2 Specification Sections where cutting and patching requires excavating and backfilling.
 5. Where services are required to be removed, relocated, or abandoned, by-pass utility services before cutting. Cut-off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal the remaining pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and cutting.
- H. Patching: Patch with durable seams that are as invisible as possible. Comply with specified tolerances:
1. Inspect and test patched areas to demonstrate integrity of the installation.
 2. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 3. Where removing walls or where partitions extend from one finished area into another, patch and repair ground and wall surfaces. Provide an even surface of uniform color and appearance. Remove ground and wall coverings and replace with new materials to achieve uniform color and appearance.
 - a. Where patching occurs in a smooth painted surface, extend final paint coat over entire surface containing the patch after the area has received primer and second coat.
 4. Patch, repair, or rehang ceilings as necessary to provide an even-plane surface of uniform appearance.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar items. Clean piping, conduit, and similar features before applying paint or finishing materials. Restore damaged pipe covering to its original condition.

END OF SECTION 01045

SECTION 01050

FIELD ENGINEERING

1.1 GENERAL

- A. This Section specifies requirements for field-engineering services including, but not limited to, the following:
 - 1. Land survey work to locate easements, utilities, and subterranean objects.
 - 2. Civil engineering services to assure positive drainage.
 - 3. Location of underground utilities.
 - 4. Geotechnical monitoring.
 - 5. Field adjustments to utility layout.
 - 6. Erosion Control measurements.
- B. Submit a certificate certifying location and elevation of improvements.
- C. Project Record Documents: Submit a record of Work performed and record copy of survey data collected in the field. TerraMark has already surveyed the entire site and the survey is available to the contractors in Cad format upon request.
- D. Surveyor Qualifications: Engage a land surveyor registered in the state where the Project is located.
- E. Geotechnical Data: When required, engage qualified Geotechnical Engineers familiar with the conditions of the site and approved by the Owner.
- F. Professional Design Services: Secure design consultants and engineers licensed in the state and approved by the Owner.

1.2 PRODUCTS (Not Applicable)

1.3 EXECUTION

- A. Identification: The surveyor will identify existing control points and property line corner stakes. Boundaries are indicated on the existing survey by TerraMark.
- B. Verify layout information, in relation to property survey and existing benchmarks, before proceeding to lay out the Work. Locate and protect existing benchmarks and control points. Preserve permanent reference points during construction.
 - 1. Do not change or relocate benchmarks or control points without written approval. Report destroyed reference points or requirements to relocate reference points because of changes in grades.
 - 2. Replace destroyed Project control points. Base replacements on the original survey control points and property corner pins.
- C. Field locate adjacent street right-of-way lines on the ground to use as reference during staking and construction.

- D. Existing Utilities: The existence of underground utilities and construction is not guaranteed. Verify location of underground utilities and other construction before beginning site work or excavation.
1. Prior to construction, verify location and invert elevation at points of connection to storm sewers, and water-service piping, and underground utility boxes.
 2. Locate existing lateral sanitary sewer line as shown on the existing site survey.
- E. Work from lines and levels established by the property survey. Establish benchmarks and markers to set lines and levels at each story of construction and to locate each element. Calculate and measure required dimensions within indicated or recognized tolerances. Do not scale Drawings to determine exact dimensions.
1. Advise entities engaged in construction activities of marked lines and levels provided for their use.
 2. As construction proceeds, check every element for line, level, and plumb.
- F. Surveyor's Log: Maintain a surveyor's log of control and other survey work. Make this log available for reference.
1. Record deviations from lines and levels. Advise the Architect when deviations exceed tolerances. On Project Record Drawings, record deviations that are accepted and not corrected.
 2. On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and site work.
- G. Site Improvements: Locate and lay out site improvements, including pavements, stakes grading, fill and topsoil placement, conduits, walls, and invert elevations.
- I. Existing Utilities: Furnish information necessary to adjust, move, or relocate existing granite curbs, structures, utility poles, lines, services, or other appurtenances located in or affected by construction. Coordinate with local authorities and utility providers having jurisdiction.
- J. Geotechnical Monitoring: Contractor shall coordinate the services of the Owner's Geotechnical Engineer to take the soil borings necessary to verify the construction requirements for the following project elements are acceptable.
1. Sidewalk stabilization.
 2. Retaining wall foundations.
 3. Paving area stabilization.
 4. Ramp Steps
- K. Subsurface Conditions: Contractor is responsible to correct all subsurface conditions necessary to ensure the structural integrity of all elements of the project. Reference each section of the Technical Specifications for detailed execution requirements.

END OF SECTION 01050

SECTION 01095

REFERENCE STANDARDS AND DEFINITIONS

1.01 GENERAL

- A. Definitions: Basic contract definitions are included in the Conditions of the Contract.
- B. "Indicated" refers to graphic representations, notes, or schedules on the Construction Drawings; or to other paragraphs or schedules in the Specifications and similar requirements in the Contract Documents. Terms such as "shown," "noted," "scheduled," and "specified" are used to help the user locate the reference. Location is not limited.
- C. Where the word or words "as directed", "as required", "as approved", "as permitted" "as selected", "as requested", "as authorized", or words of like effect are used in the specifications or on the drawings, the Contractor shall understand that direction, requirement, approval or permission of the Landscape Architect is intended. Similar words "approved", "acceptable", "satisfactory", or words of like import mean approved by, acceptable to or satisfactory to the Landscape Architect.
- D. "Approved": When used in conjunction with the Project Landscape Architect's action on the Contractor's submittals, applications, and requests, is limited to the Project Landscape Architect's duties and responsibilities as stated in the Conditions of the Contract.
- E. "Regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the work.
- F. "Furnish" means to supply and deliver to the Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install" describes operations at the project site including the actual unloading, temporary storage, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- H. "Provide" means to furnish and install, complete and ready for the intended use.
- I. "Installer" is the Contractor, or another entity engaged by the Contractor, either as an employee, subcontractor, or contractor of lower tier, who performs a particular construction activity including installation, erection, application, or similar operations. Installers are required to be experienced in the operations they are engaged to perform.

1. The term "experienced," when used with the term "installer," means being familiar with the special requirements indicated; and having complied with requirements of authorities having jurisdiction.
 2. Using terms such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter."
- J. "Project Site" is the space available to the Contractor for performing construction activities, either exclusively or in conjunction with others performing work as part of the project. The extent of the project site is shown on the Construction Drawings and may or may not be identical with the description of the land on which the project is to be built.
- K. "Testing Agencies": A testing agency is an independent entity engaged to perform specific inspections or tests, either at the project site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.
- L. Specification Format: These Specifications are organized into Divisions and Sections based on the Construction Specifications Institute's 16-division format and "Master Format" numbering system.
1. Abbreviated Language: Language used in the Specifications is abbreviated. Words implied, but not stated, shall be interpolated as the sense requires. Singular words shall be interpreted as plural and plural words interpreted as singular where applicable as the context of the Contract Documents indicates.
 2. Streamlined language is generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the Text, subjective language is used for clarity to describe responsibilities that must be fulfilled indirectly by the Contractor or by others when so noted.
 - a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
- M. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- N. Publication Dates: Comply with the standards in effect as of the date of the Contract Documents.
- O. Copies of Standards: Copies of applicable standards are not bound with the Contract Documents. Where copies of standards are needed to perform a required

construction activity, the Contractor shall obtain copies directly from the publication source and make them available on request.

- P. Abbreviations and Names: Where abbreviations and acronyms are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards-generating organization, authorities having jurisdiction, or other entity applicable to the context of the text provision. Refer to Gale Research Inc.'s "Encyclopedia of Associations," which is available in most libraries.
- Q. Permits, Licenses, and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the work.
- R. Engineer, Architect, Landscape Architect, all indicate the design consultant responsible to the Owner for observing the construction of the project.

1.02 PRODUCTS (Not Applicable)

1.03 EXECUTION (Not Applicable)

END OF SECTION 01095

SECTION 01200

PROJECT MEETINGS

1.1 GENERAL

- A. This Section specifies administrative and procedural requirements for project meetings, including, but not limited to, the following:
 - 1. Preconstruction conferences.
 - 2. Preinstallation conferences.
 - 3. Progress meetings.
 - 4. Weather Records and Calendar
 - 5. Special sub-contractor pre-installation meetings
 - 6. Final punch list inspection
- B. Preconstruction Conference: Schedule a preconstruction conference before starting construction. Review responsibilities and personnel assignments.
- C. Attendees: Authorized representatives of the Owner, Landscape Architect, and their consultants; the Contractor and its superintendent; major subcontractors; and other concerned parties shall attend.
 - 1. Participants shall be familiar with the Project and authorized to conclude matters relating to the Work.
- D. Agenda: Discuss items that could affect progress, including the following:
 - 1. Tentative construction schedule.
 - 2. Critical work sequencing.
 - 3. Submittal of Shop Drawings, Product Data, and Samples.
 - 4. Use of the premises.
 - 5. Special Feature schedules
 - 6. Weather conditions and schedule
 - 7. Sequencing and Traffic Control
- E. Preinstallation Conferences: Conduct a conference before each activity that requires coordination with other operations.
- F. Attendees: The Installer and representatives of manufacturers and fabricators involved in or affected by the installation shall attend. Advise the Landscape Architect of scheduled meeting dates.
 - 1. Review the progress of other operations and preparations for the activity under consideration at each preinstallation conference, including requirements for the following:
 - a. Compatibility problems and acceptability of substrates.

- b. Time schedules and deliveries.

- c. Manufacturer's recommendations.
 - d. Warranty requirements.
 - e. Inspecting and testing requirements.
 2. Record significant discussions and agreements and disagreements, and the approved schedule. Promptly distribute the record of the meeting to everyone concerned, including the Owner and the Landscape Architect.
 3. Do not proceed with the installation if the conference cannot be successfully concluded. Initiate actions necessary to resolve problems and reconvene the conference.
- G. Progress Meetings: Conduct progress meetings at the Project Site at regular intervals as agreed in the contract. Notify the Owner and the Architect of scheduled dates. Coordinate meeting dates with preparation of the Payment Request.
- H. Attendees: The Owner, Architect, and other entities concerned with current progress or involved in planning, coordination, or future activities shall be represented. Participants shall be authorized to conclude matters relating to the Work.
- I. Agenda: Review and correct or approve minutes of the previous meeting. Review items of significance that could affect progress. Include topics for discussion appropriate to Project status.
 1. Contractor's Construction Schedule: Review progress since the last meeting. Determine where each activity is in relation to the Contractor's Construction Schedule. Determine how to expedite construction behind schedule; secure commitments from parties involved to do so. Discuss revisions required to ensure subsequent activities will be completed within the Contract Time.
 2. The schedule shall indicate the dates for the starting and completion of various stages of construction and shall be revised monthly as required by the conditions of the work.
 3. Review the present and future needs of each entity present, including the following:
 - a. Time.
 - b. Sequences.
 - c. Status of submittals.
 - d. Deliveries and off-site fabrication problems.
 - e. Temporary facilities and services.
 - f. Quality and work standards.
 - g. Change Orders.
 - h. Daily reports and weather conditions
 - i. Shop drawings and submittals
 - j. Onsite inspections and adjustments
 - k. Traffic control plan

3. Reporting: Distribute meeting minutes to each party present and to parties who should have been present. Include a summary of progress since the previous meeting and report.
 4. Schedule Updating: Revise the Contractor's Construction Schedule after each meeting where revisions have been made. Issue the revised schedule concurrently with the report of each meeting.
 7. Record Drawings: Contractor shall maintain a current and complete set of all Contract Documents on-site at all times.
 8. Review 'Requests for Information' and resolve.
 9. Review 'Change Orders' and resolve.
 10. Review pay requests and schedule of payments.
 11. Resolve on-site issues and adjustments.
 12. Review weather reports and status of schedule and delays.
- J. Daily Construction Reports: Contractor shall prepare a daily report recording events on the site. Submit duplicate copies to the Landscape Architect at weekly intervals. Include the following information:
1. Daily record showing work engaged, completed, and started
 2. List of subcontractors at the site
 2. High and low temperatures, general weather conditions.
 3. Accidents and unusual events.
 4. Stoppages, delays, shortages, and losses.
 5. Meter readings and similar recordings.
 6. Emergency procedures.
 7. Orders and requests of governing authorities.
 8. Services connected, disconnected.
 9. Equipment or system tests and startups.
 10. Substantial Completions authorized
 11. Materials delivered or stored
 12. Inspection or testing completed
 13. Official visitors to the site
- K. Construction Records: Contractor shall maintain the following reports and records for review at each Program Meeting. See Section 1300 submittals for more detail of each report.
1. As Built Field Set:
Set of plans kept inside for the purpose of updating and recording all changes and modifications. Update with red lines to record changes as they occur. Update with red lines to record changes as they occur. Said redlines must be issues in Meeting Minutes.
 2. Request for Information (RFI) Book:
Sequential record of all requests and their subsequent answers.
 3. Shop drawings and approved site field changes

4. Documents and Samples of special product to the Site:
5. Change Orders:
Sequential record of all accepted or pending change orders with backup data.

L. Documents and Samples at the Site:

In addition to instruments mentioned in this section, include copies of all Requests for Payment and correspondence between Landscape Architect and Contractor. Maintain all copies in orderly files in Contractor's job site office. Records shall be available for reference during all on-site project meetings.

1.2 PRODUCTS (Not Applicable)

1.3 EXECUTION (Not Applicable)

END OF SECTION 01200

SECTION 01220

UNIT PRICES

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.
- B. See Construction Items Bid Schedule in the Instructions to Bidders in Division 1.

1.2 SUMMARY

- A. This Section includes:
 - 1. Unit Price work as shown at bottom of the Construction Items Bid Schedule.
 - 2. List of unit prices required.
 - 3. Procedures for unit price work.

1.3 DEFINITIONS

- A. Unit price is an amount proposed by bidders, stated on the Bid Form and Construction Items Bid Schedule, as a price per unit of measurement for materials or services added to or deducted from the Contract Sum by appropriate modification, if estimated quantities of Work required by the Contract Documents are increased or decreased.

1.4 SUBMITTALS

- A. Supporting Data: When applications for payment include unit price work submit substantiated measurement of quantity installed or executed.

1.5 PROCEDURES

- A. Unit Prices include all costs necessary to satisfactorily complete the work identified, including materials, delivery, labor, and installation. Insurance, overhead, profit and other General Conditions are shown separately as a percentage added.
- B. Measurement and Payment: Refer to the individual Specification Sections for work that requires establishment of a unit price. Methods of measurement and payment for unit price items are specified in this section.
- C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and the right to have such work measured, at Contractor's expense, by an independent surveyor acceptable to Owner.
- D. List of Unit Prices: A list of unit prices is included on the Construction Items Bid

Schedule. Specification Sections and details are referenced on the bid schedule that identifies requirements for materials described under each unit price item.

- E. Unit Price Quantities: In case of unit price quantity discrepancies between Bid Form, Construction Items Bid Form and this form, or any other section, the unit price quantities stated in this section shall prevail.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 LIST OF UNIT PRICES

A. Unit Price: Rock Excavation.

1. Description: Removal of unexpected rock forming a void to be filled. Excavate and remove the rock from the site.
2. Purpose: To adjust the contract sum when actual rock is encountered, and a quantity is determined.
3. Unit of Measurement: Cubic Yard removed.
4. Quantity to be included in Contract Sum: **10 cy Allowance:**
5. Include only the following in the unit price: Excavation, loading, hauling and dumping fees to remove the materials from the site.
6. Overhead and profit to show as a separate percentage.
7. Include all other costs in contract sum.
8. Method of measurement: Measurement will be made as outlined in the specifications and verified by the owner.

B. Unit Price: :Excavation and Removal of Unsatisfactory soil

1. Description: Removal of unsatisfactory soils encountered and requiring excavation as defined in the specifications.
2. Purpose: To adjust the contract sum when actual quantity is determined.
3. Unit of Measurement: Cubic Yard
4. Allowance quantity and priced to be included in the unit cost of the fill material to be used to fill the void.
5. Include in the unit price: Excavation to subgrade, hauling and disposal off site.
6. Overhead and profit as part of the unit price of the fill material.
7. Method of measurement: Measurement will be made as outlined in the specifications and verified by the owner.
- 8.

Replace with satisfactory earth fill:

9. Description: Removal of unsatisfactory soils leaves an unexpected void to be filled. Fill the void with earth fill up to proposed subgrade.
10. Purpose: To adjust the contract sum when actual quantity is determined.
11. Unit of Measurement: Cubic Yard
12. Quantity to be included in Contract Sum: **50 cy Allowance:**
13. Include only the following in the unit price: Excavation and removal of unsuitable soils. Securing and bringing suitable earth fill material from off site to fill the void to the original level of the soils removed.
14. Overhead and profit to show as a separate percentage.
15. Include all other costs in contract sum.

16. Method of measurement: Measurement will be made as outlined in the specifications and verified by the owner.

Replace with Graded Aggregate Base (GAB) or #57 Stone:

17. Description: Removal of unsatisfactory soils leaves an unexpected void to be filled. Fill the void with GAB or #57 stone up to proposed subgrade.
18. Purpose: To adjust the contract sum when actual quantity is determined.
19. Unit of Measurement: Cubic Yard
20. Quantity to be included in Contract Sum: **50 cy Allowance:**
21. Include only the following in the unit price: Excavation and removal of unsuitable soils. Securing and bringing GAB or #57 stone from off site to fill the void to the original subgrade level of the soils removed.
22. Overhead and profit to show as a separate percentage.
23. Include all other costs in contract sum.
24. Method of measurement: Measurement will be made as outlined in the specifications and verified by the owner.

C. Unit Price: Additional Ramp Step and Frame Section

1. Description: Construction of additional ramp steps and framing where needed in the field to transition the slope but not shown on the plans.
2. Purpose: To adjust the contract sum when actual quantity is determined in the field.
3. Unit of Measurement: Linear Foot
4. Allowance quantity to be included in Contract Sum: **30 lf**
5. Include the following in the unit price: Hand-grading, materials and construction of the ramp step detail as included in the drawings.
6. Overhead and profit are included as a separate percentage.
7. Include all labor and material costs for clearing and construction in the contract sum.
8. Method of measurement: Measurement will be made as outlined in the specifications and verified by the owner

D. Unit Price: Silt Sock

1. Description: Construction of additional silt sock where needed in the field and not shown on the plans.
2. Purpose: To adjust the contract sum when actual quantity is determined in the field.
3. Unit of Measurement: Linear Foot
4. Allowance quantity to be included in Contract Sum: **100 lf.**
5. Include only the following in the unit price: Material and construction of the silt sock per detail; maintenance, repair, replacement and removal of silt sock.
6. Overhead and profit are included as a separate percentage.
7. Include all other costs in contract sum.
8. Method of measurement: Measurement will be made as outlined in the specifications and verified by the owner.

E. Unit Price: Additional tree protection fence

1. Description: Protect additional trees where needed in the field and not delineated on the plans.
2. Purpose: To adjust the contract sum after actual quantity is determined in the field.

3. Unit of Measurement: Linear Foot
4. Allowance quantity to be included in Contract Sum: **400 lf.**
5. Include only the following in the unit price: Placement within the park boundary.
6. Overhead and profit are included as a separate percentage.
7. Include all other costs in contract sum.
8. Method of measurement: Measurement will be made as outlined in the specifications and verified by the owner.

F. Unit Price: Additional French Drain

1. Description: Construction of additional French drain where needed on the lawn and not delineated on the plans.
2. Purpose: To adjust the contract sum after actual quantity is determined in the field.
3. Unit of Measurement: ‘Linear Foot’
4. Allowance quantity to be included in Contract Sum: **50 lf.**
5. Include only the following in the unit price: Material and construction of the FDR process within the park boundary.
6. Overhead and profit are included as a separate percentage.
7. Include all other costs in contract sum.
8. Method of measurement: Measurement will be made as outlined in the specifications and verified by the owner.

G. Unit Price: Additional 5’ Concrete Sidewalk

1. Description: Construction of additional concrete sidewalk and steps where needed in the field to connect to the lake but not delineated on the plans.
2. Purpose: To adjust the contract sum after actual quantity is determined in the field.
3. Unit of Measurement: ‘Square Foot of sidewalk and linear foot of step’
4. Allowance quantity to be included in Contract Sum: **400 sf.**
5. Include only the following in the unit price: Material and construction of the sidewalk and steps within the park boundary.
6. Overhead and profit are included as a separate percentage.
7. Include all other costs in contract sum.
8. Method of measurement: Measurement will be made as outlined in the specifications and verified by the owner.

END OF SECTION 01220

SECTION 01300

SUBMITTALS

1.1 GENERAL

- A. Submittal Procedures: Coordinate submittal preparation with construction, fabrication, other submittals, and activities that require sequential operations. Transmit in advance of construction operations to avoid delay.
1. Coordinate submittals for related operations to avoid delay because of the need to review submittals concurrently for coordination. The Landscape Architect reserves the right to withhold action on a submittal requiring coordination until related submittals are received.
 2. Processing: Allow 2 weeks for initial review. Allow more time if the Landscape Architect must delay processing to permit coordination. Allow 2 weeks for reprocessing.
 - a. No extension of Contract Time will be authorized because of failure to transmit submittals sufficiently in advance of the Work to permit processing.
 3. Submittal Preparation: Place a permanent label on each submittal for identification. Provide a 4- by 5-inch (100- by 125-mm) space on the label or beside title block to record review and approval markings and action taken. Include the following information on the label for processing and recording action taken.
 - a. Project name.
 - b. Date.
 - c. Name and address of the Architect/Landscape Architect.
 - d. Name and address of the Contractor.
 - e. Name and address of the subcontractor.
 - f. Name and address of the supplier.
 - g. Name of the manufacturer.
 - h. Number and title of appropriate Specification Section.
 - i. Drawing number and detail references, as appropriate.
 4. Submittal Transmittal: Package each submittal appropriately. Transmit with a transmittal form. The Architect will not accept submittals from sources other than the Contractor.
 5. Transmittal Form: Use AIA Document G810. On the form, record requests for information and deviations from requirements. Include Contractor's certification that information complies with requirements.

- B. Contractor's Construction Schedule: Prepare a horizontal bar-chart-type, contractor's construction schedule. Provide a separate time bar for each activity and a vertical line to identify the first working day of each week. Use the same breakdown of Work indicated in the "Schedule of Values." See Section 01026 Indicate estimated completion in 10 percent increments. As Work progresses, mark each bar to indicate actual completion.
1. Submit on date of Pre-Construction Meeting.
 2. Prepare the schedule on stable transparency, or other reproducible media, of width to show data for the entire construction period.
 3. Secure performance commitments from parties involved. Coordinate each element with other activities; include minor elements involved in the Work. Show each activity in proper sequence. Indicate sequences necessary for completion of related Work.
 4. Coordinate with the Schedule of Payment, list of subcontracts, Submittal Schedule, payment requests, and other schedules.
 5. Indicate completion in advance of Substantial Completion. Indicate Substantial Completion to allow time for the Architect's procedures necessary for certification of Substantial Completion.
 6. Phasing: Show how phased completion affects the Work.
 7. Work Stages: Indicate important stages for each portion of the Work.
 8. Area Separations: Provide a separate time bar to identify each construction area for each portion of the Work. Indicate where each element must be sequenced with other activities.
- C. Submittal Schedule: After developing the Contractor's Construction Schedule, prepare a schedule of submittals. Submit within 10 days of submittal of the Construction Schedule.
1. Coordinate with list of subcontracts, Schedule of Values, list of products, and the Contractor's Construction Schedule.
 2. Prepare the schedule in chronological order. Provide the following information:
 - a. Date for first submittal.
 - b. Related Section number.
 - c. Submittal category (Shop Drawings, Product Data, or Samples).
 - d. Name of the subcontractor.
 - e. Description of the Work covered.
 - f. Date for the Architect's final approval.
 3. Schedule Distribution: Distribute copies of the Contractor's Construction Schedule and the Submittal Schedule to the Architect, Owner, subcontractors, and parties required to comply with submittal dates. Post copies in the field office.
 - a. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their Work and are no longer involved in construction activities.

- b. Updating: Revise the schedule after each meeting or activity where revisions have been made. Issue the updated schedule concurrently with thereport of each meeting.

D. Daily Construction Reports: See Section 1200 for more detail

E. Shop Drawings: See Section 01340 for more detail about Shop Drawings. See Shop Drawings in respective Technical Sections as identified.

Do not use Shop Drawings without an appropriate final stamp indicating action taken.

F. Product Data: Collect Product Data into a single submittal for each element of construction. Mark each copy to show applicable choices and options. Where Product Data includes information on several products, mark copies to indicate applicable information.

1. Include the following information:

- a. Manufacturer's printed recommendations.
- b. Compliance with trade association standards.
- c. Compliance with recognized testing agency standards.
- d. Application of testing agency labels and seals.
- e. Notation of dimensions verified by field measurement.
- f. Notation of coordination requirements.

2. Preliminary Submittal: Submit a preliminary single copy of Product Data where selection of options is required.

3. Submittals: Submit 2 copies; submit 4 copies where required for maintenance manuals. The Landscape Architect will retain one and return the other marked with action taken.

- a. Unless noncompliance with Contract Documents is observed, the submittal serves as the final submittal.

4. Distribution: Furnish copies to installers, subcontractors, suppliers, and others required for performance of construction activities. Show distribution on transmittal forms. Do not proceed with installation until a copy of Product Data is in the Installer's possession.

- a. Do not use unmarked Product Data for construction.

G. Samples: Submit full-size Samples cured and finished as specified and identical with the material proposed. Mount Samples to facilitate review of qualities.

1. Include the following:

- a. Specification Section number and reference.
 - b. Generic description of the Sample.
 - c. Sample source.
 - d. Product name or name of the manufacturer.
 - e. Compliance with recognized standards.
 - f. Availability and delivery time.
2. Submit Samples for review of size, kind, color, pattern, and texture, for a check of these characteristics, and for a comparison of these characteristics between the final submittal and the actual component as delivered and installed. Where variations are inherent in the material, submit at least 3 units that show limits of the variations.
 - a. Refer to other Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation, and similar characteristics.
 - b. Refer to other Sections for Samples to be incorporated in the Work. Samples must be undamaged at time of use. On the transmittal, indicate special requests regarding disposition of Sample submittals.
 - c. Samples not incorporated into the Work, or designated as the Owner's property, are the Contractor's property and shall be removed from the site.
 3. Preliminary Submittals: Submit a full set of choices where Samples are submitted for selection of color, pattern, texture, or similar characteristics from standard choices. The Architect will review and return submittals indicating selection and other action.
 4. Submittals: Except for Samples illustrating assembly details, workmanship, fabrication techniques, connections, operation, and similar characteristics, submit 3 sets. One set will be returned marked with the action taken. Maintain sets of Samples, at the Project Site, for quality comparison.
 - a. Unless noncompliance with Contract Documents is observed, the submittal may serve as the final submittal.
 - b. Sample sets may be used to obtain final acceptance of the construction associated with each set.
 5. Distribution of Samples: Distribute additional sets to subcontractors, manufacturers, and others as required for performance of the Work. Show distribution on transmittal forms.
- H. Quality Assurance Submittals: Submit quality-control submittals, including design data, certifications, manufacturer's instructions, and manufacturer's field reports required under other Sections of the Specifications.

1. Certifications: Where certification that a product or installation complies with specified requirements is required, submit a notarized certification from the manufacturer certifying compliance.
 - a. Signature: Certification shall be signed by an officer authorized to sign documents on behalf of the company.

I. Sample Panels:

1. Contractor shall construct sample panels in accordance with the Technical Specifications for review and approval by Landscape Architect.
2. Samples shall be prepared in advance of construction sequencing to allow time for modifications and approvals.
3. Contractor shall allow Landscape Architect five days to respond to a request to see a sample.
4. Full scale construction of any work requiring a pre-approved sample shall not begin until after Landscape Architect issues a statement of approval.

J. Architect's Action: Except for submittals for the record or information, where action and return are required, the Architect will review each submittal, mark to indicate action taken, and return. Compliance with specified characteristics is the Contractor's responsibility.

1. Action Stamp: The Architect will stamp each submittal with an action stamp. The Architect will mark the stamp appropriately to indicate the action taken.

1.2 PRODUCTS (Not Applicable)

1.3 EXECUTION (Not Applicable)

END OF SECTION 01300

SECTION 01400

QUALITY CONTROL

1.1 GENERAL

- A. Quality control services include inspections, tests, and related actions, including reports performed by Contractor, by independent agencies, and by governing authorities. They do not include contract enforcement activities performed by the Landscape Architect.
- B. Contractor Responsibilities: Unless they are the responsibility of another entity, Contractor shall provide inspections and tests specified elsewhere and required by authorities having jurisdiction. Costs for these services shall be included in the Contract Sum.
 - 1. Where inspections and tests are the Contractor's responsibility, the Contractor shall employ and pay a qualified independent testing agency to perform these services. Costs for these services are included in the Contract Sum.
 - 2. Where inspections and tests are the Owner's responsibility, the Owner will employ and pay a qualified independent testing agency to perform those services.
 - 3. Where inspections and tests are the Owner's responsibility, the Owner will engage the services of a qualified independent testing agency to perform those services. Payment will be made from the Inspection and Testing Allowance, as authorized by Change Orders.
 - a. Where the Owner engages an agency to test or inspect part of the Work and the Contractor is required to engage an entity to test or inspect the same or related element, the Contractor shall not employ the entity engaged by the Owner, unless the Owner agrees in writing.
- C. Retesting: The Contractor is responsible for retesting where results of inspections and tests prove unsatisfactory and indicate noncompliance with requirements.
 - 1. The cost of retesting is the Contractor's responsibility where tests performed indicated noncompliance with requirements.
- D. Auxiliary Services: Cooperate with agencies performing inspections and tests. Provide auxiliary services as requested. Notify the agency in advance of operations to permit assignment of personnel. Auxiliary services include the following:
 - 1. Providing access to the Work.
 - 2. Furnishing incidental labor and facilities to assist inspections and tests.
 - 3. Taking adequate quantities of representative samples of materials that require testing or assisting the agency in taking samples.
 - 4. Providing facilities for storage and curing of test samples.
 - 5. Delivering samples to testing laboratories.

6. Providing preliminary design mix proposed for use for materials mixes that require control by the testing agency.
 7. Providing security and protection of samples and test equipment.
- E. Duties of the Testing Agency: The testing agency shall cooperate with the Landscape Architect and the Contractor in performing its duties. The agency shall provide qualified personnel to perform inspections and tests.
1. The agency shall notify the Landscape Architect and the Contractor of irregularities or deficiencies observed in the Work during performance of its services.
 2. The agency shall not release, revoke, alter, or enlarge requirements or approve or accept any portion of the Work.
 3. The agency shall not perform duties of the Contractor.
- F. Coordination: Coordinate activities to accommodate services with a minimum of delay. Avoid removing and replacing construction to accommodate inspections and tests.
1. The Contractor is responsible for scheduling inspections, tests, taking samples, and similar activities.
- G. Submittals: The testing agency shall submit a certified written report, in duplicate, of each inspection and test to the Landscape Architect. If the Contractor is responsible for the service, submit a certified written report, in duplicate, of each inspection or test through the Contractor.
1. Submit additional copies of each report to the governing authority, when the authority so directs.
 2. Report Data: Reports of each inspection, test, or similar service include, but are not limited to, the following:
 - a. Date of issue.
 - b. Project title and number.
 - c. Name, address, and telephone number of testing agency.
 - d. Dates and locations of samples and tests or inspections.
 - e. Names of individuals making the inspection or test.
 - f. Designation of the Work and test method.
 - g. Identification of product and Specification Section.
 - h. Complete inspection or test data.
 - i. Test results and an interpretation of test results.
 - j. Ambient conditions at the time of sample taking and testing.
 - k. Comments or professional opinion on whether inspected or tested Work complies with requirements.
 - l. Name and signature of laboratory inspector.
 - m. Recommendations on retesting.

- H. Qualifications for Service Agencies: Engage inspection and testing service agencies that are prequalified as complying with the American Council of Independent Laboratories' "Recommended Requirements for Independent Laboratory Qualification" and that specialize in the types of inspections and tests to be performed.
 - 1. Each agency shall be authorized by authorities having jurisdiction to operate in the state where the Project is located.

1.2 PRODUCTS (Not Applicable)

1.3 EXECUTION

- A. Repair and Protection: Upon completion of inspection, testing, and sample taking, repair damaged construction. Restore substrates and finishes. Comply with Division 1 Section "Cutting and Patching."
- B. Protect construction exposed by or for quality-control service activities and protect repaired construction.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for inspection and testing.

END OF SECTION 01400

SECTION 01500

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

1.1 GENERAL

- A. Summary: This Section specifies construction facilities and temporary controls including temporary utilities, support facilities, and security and protection facilities.
- B. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:
 - 1. Building code requirements.
 - 2. Health and safety regulations.
 - 3. Utility company regulations.
 - 4. Police, fire department, and rescue squad rules.
 - 5. Environmental protection regulations.
- C. Standards: Comply with NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations," ANSI A10 Series standards for "Safety Requirements for Construction and Demolition," and NECA Electrical Design Library "Temporary Electrical Facilities."
 - 1. Electrical Service: Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with NFPA 70 "National Electric Code."
- D. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.
- E. Temporary Utilities: Prepare a schedule indicating dates for implementation and termination of each temporary utility. Submit reports of tests, inspections, meter readings, and procedures performed on temporary utilities. At the earliest time, change over from use of temporary service to use of permanent service.
- F. Shelter: Contractor may use one of the pavilions on site as a field office is desired. Contractor must repair any damage sustained to the pavilion after the project is done.

1.2 PRODUCTS

- A. Materials: Provide new materials. If acceptable to the Architect, the Contractor may use undamaged, previously used materials in serviceable condition. Provide materials suitable for use intended.
 - 1. Lumber and Plywood: Comply with Division 6 Section "Rough Carpentry." Provide UL-labeled, fire-treated lumber and plywood for temporary offices and

- sheds. Provide exterior, Grade B-B high-density concrete form overlay plywood for signs. Provide 5/8-inch- (16-mm-) thick exterior plywood for other uses.
2. Roofing Materials: UL Class A standard-weight asphalt shingles or UL Class C mineral-surfaced roll roofing on roofs of temporary offices, shops, and sheds.
 3. Paint: Comply with Division 9 Section "Painting."
 - a. For exposed lumber and plywood, provide exterior-grade acrylic-latex emulsion over exterior primer.
 - b. For sign panels and applying graphics, provide exterior-grade alkyd gloss enamel over exterior primer.
 - c. For interior walls of temporary offices, provide 2 coats interior latex-flat wall paint.
 4. Tarpaulins: Waterproof, fire-resistant, UL-labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures, provide translucent, nylon-reinforced, laminated polyethylene or polyvinyl chloride, fire-retardant tarpaulins.
 5. Water: Potable water approved by local health authorities.
 6. Open-Mesh Fencing: 0.120-inch- (3-mm-) thick, galvanized 2-inch (50-mm) chain link fabric fencing 6 feet (2 m) high with galvanized barbed-wire top strand and galvanized steel pipe posts, 1-1/2 inches (38 mm) I.D. for line posts and 2-1/2 inches (64 mm) I.D. for corner posts.
- B. Equipment: Provide new equipment. If acceptable to the Architect, the Contractor may use undamaged, previously used equipment in serviceable condition. Provide equipment suitable for use intended.
1. Water Hoses: 3/4-inch (19-mm), heavy-duty, abrasion-resistant, flexible rubber hoses 100 feet (30 m) long. Provide adjustable shutoff nozzles at hose discharge.
 2. Electrical Outlets: Properly configured, NEMA-polarized outlets. Provide outlets equipped with ground-fault circuit interrupters, reset button, and pilot light for connection of power tools and equipment.
 3. Electrical Power Cords: Grounded extension cords. Use hard-service cords where exposed to abrasion and traffic.
 4. Lamps and Light Fixtures: General service incandescent lamps. Provide guard cages or tempered-glass enclosures where exposed to breakage. Provide exterior fixtures where exposed to moisture.
 5. Heating Units: Temporary heating units that have been tested and labeled by UL, FM, or another recognized trade association related to the type of fuel being consumed.
 6. Fire Extinguishers: Hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for the exposures.
 - a. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

1.3 EXECUTION

- A. Installation, General: Use qualified personnel to install temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
1. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.
 2. Conditions of Use: Keep temporary facilities clean and neat in appearance. Operate safely and efficiently. Relocate as the Work progresses. Do not overload facilities or permit them to interfere with progress. Take necessary fire- prevention measures. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.
- B. Temporary Utility Installation: Engage the local utility company to install temporary service or connect to existing service. Where company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with company recommendations.
1. Arrange with company and existing users for a time when service can be interrupted to make connections for temporary services.
 2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
 3. Obtain easements to bring temporary utilities to the site where the Owner's easements cannot be used for that purpose.
 4. Use Charges: Cost or use charges for temporary facilities are not chargeable to the Owner or Architect. Neither the Owner nor Architect will accept cost or use charges as a basis of claims for Change Orders.
 5. Temporary Water Service: Install temporary water service and distribution piping of sizes and pressures adequate for construction. Maintain service until permanent water service is in use. Sterilize piping prior to use.
 6. Temporary Electric Power: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics. Include meters, transformers, overload-protected disconnects, automatic ground-fault interrupters, and main distribution switch gear. Install service underground.
 - a. Power Distribution: Install wiring overhead and rise vertically where least exposed to damage.
 - b. Temporary Lighting: Provide temporary lighting with local switching to fulfill security requirements and illumination for construction operations and traffic conditions.
 7. Temporary Heat: Provide temporary heat for curing or drying of completed installations or for protection of installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful

effect on completed installations. Coordinate ventilation requirements to produce ambient condition required and minimize consumption of energy.

- a. Heating Facilities: Except where the Owner authorizes use of the permanent system, provide vented, self-contained, LP-gas or fuel oil heaters with individual space thermostatic control. Use of gasoline-burning space heaters, open flame, or salamander heating units is prohibited.
8. Temporary Telephones: Provide telephone service for each personnel engaged in construction. Provide a separate line for each temporary office and first aid station on site. Provide a dedicated telephone line for a fax machine in the field office. At each telephone, post a list of important telephone numbers.
 9. Sanitary Facilities: Comply with regulations and health codes for the type, number, location, operation, and maintenance of fixtures and facilities. Install where facilities will best serve the Project's needs. Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Provide covered waste containers.
 - a. Toilets: Install self-contained, single-occupant toilet units of the chemical, aerated recirculation, or combustion type. Provide units properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted.
 - 1) Provide separate facilities for male and female personnel.
 - b. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that require wash-up. Dispose of drainage properly. Supply cleaning compounds.
 - 1) Provide safety showers, eyewash fountains, and similar facilities for safety, and sanitation of personnel.
 - c. Drinking-Water Facilities: Provide containerized, tap-dispenser, bottled drinking-water units.
 10. Sewers and Drainage: If sewers are available, provide temporary connections to remove effluent. If sewers are not available or cannot be used, provide drainage ditches, dry wells, stabilization ponds, and similar facilities. If neither sewers nor drainage facilities can be lawfully used for discharge of effluent, provide containers to remove and dispose of effluent off-site in a lawful manner.
 - a. Filter out soil, construction debris, chemicals, and similar contaminants that might clog sewers or pollute waterways.
 - b. Connect temporary sewers to the municipal system, as directed by sewer department officials. Maintain temporary sewers and drainage facilities in a

- clean, sanitary condition. Following heavy use, restore normal conditions promptly.
- c. Provide earthen embankments and similar barriers in and around excavations and subgrade construction to prevent flooding by runoff of storm water from heavy rains.
- C. Support Facilities Installation: Locate field offices, storage sheds, and other construction and support facilities for easy access and in coordination with the Owner. Maintain facilities until near Substantial Completion. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.
1. Provide incombustible construction for offices, shops, and sheds located within the construction area or within 30 feet (9 m) of building lines. Comply with requirements of NFPA 241.
 2. Field Offices: Provide heated and air-conditioned, insulated, weather tight temporary offices of size to accommodate personnel at the Project Site. Provide offices on foundations adequate for normal loading. Provide units with lockable entrances, operable windows, and serviceable finishes. Keep the office clean and orderly for use for small progress meetings. Furnish and equip offices as follows:
 - a. Furnish field offices with a desk and chairs, a 4-drawer file cabinet, plan table, plan rack, and a 6-shelf bookcase. Equip with a water cooler and toilet complete with water closet, lavatory, and medicine cabinet unit with a mirror.
 3. Storage and Fabrication Sheds: Install sheds equipped to accommodate materials and equipment involved. Sheds may be open shelters or fully enclosed spaces within the building.
 4. Temporary Paving: Construct temporary paving for roads, storage areas, and parking where the same permanent facilities will be located. Comply with Division 2 Section "Hot-Mixed Asphalt Paving."
 - a. Coordinate temporary paving development with subgrade grading, compaction, installation and stabilization of subbase, and installation of base and finish courses of permanent paving.
 - 1) Install temporary paving to minimize the need to rework the installations and to result in permanent roads and paved areas without damage or deterioration when occupied by the Owner.
 - b. Delay installation of the final course of permanent paving until immediately before Substantial Completion. Coordinate with weather conditions to avoid unsatisfactory results.
 - c. Extend temporary paving in and around the construction area as necessary to accommodate delivery and storage of materials, equipment usage, administration, and supervision.

5. Dewatering Facilities and Drains: For temporary drainage and dewatering operations not directly associated with construction, comply with dewatering requirements of applicable Division 2 Sections. Where feasible, utilize the same facilities. Maintain excavations and construction free of water.
 6. Temporary Enclosures: Provide temporary enclosures for protection of construction from exposure, foul weather, other construction operations, and similar activities. Where heat is needed and the permanent building enclosure is not complete, provide temporary enclosures where there is no other provision for containment of heat. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions.
 - a. Install tarpaulins securely, with incombustible wood framing and other materials. Close openings of 25 sq. ft. (2.3 sq. m) or less with plywood or similar materials.
 - b. Close openings through floor or roof decks and horizontal surfaces with load-bearing, wood-framed construction.
 7. Temporary Lifts and Hoists: Provide facilities for hoisting materials and employees.
 8. Temporary Elevator Use: Refer to Division 14 Sections for elevators.
 9. Project Signs: Install project identification and other signs where indicated to inform the public and persons seeking entrance to the Project. Support on framing of preservative-treated wood or steel. Do not permit installation of unauthorized signs. Engage an experienced sign painter to apply graphics. Comply with details indicated.
 10. Temporary Exterior Lighting: Install exterior yard and sign lights so signs are visible when Work is being performed.
 11. Waste Collection and Disposal: Collect waste daily. Comply with requirements of NFPA 241. Enforce requirements strictly. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material lawfully.
 - a. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80° F (27° C).
 12. Pest Control: Retain an exterminator or pest control company to perform extermination and control procedures at regular intervals so the Project will be free of pests at Substantial Completion. Perform control operations lawfully, using environmentally safe materials.
 13. Stairs: Provide temporary stairs where ladders are not adequate. Cover finished, permanent stairs with a protective covering of plywood or similar material so finishes will be undamaged at the time of acceptance.
- D. Security and Protection Facilities Installation: Except for use of permanent fire protection as soon as available, do not change over from use of temporary security and protection facilities to permanent facilities until Substantial Completion.

1. Temporary Fire Protection: Until permanent facilities supply fire-protection needs, install and maintain temporary fire-protection facilities of types needed to protect against controllable fire losses. Comply with NFPA 10 and NFPA 241.
 - a. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell. Maintain unobstructed access to fire extinguishers.
 - b. Store combustible materials in containers in fire-safe locations.
 - c. Prohibit smoking in hazardous fire-exposure areas.
 - d. Provide supervision of welding operations, combustion-type temporary heating units, and similar sources of fire ignition.
2. Permanent Fire Protection: At the earliest date, complete installation of the permanent fire-protection facility and place into operation and use. Instruct key personnel on use of facilities.
3. Barricades, Warning Signs, and Lights: Comply with code requirements for erection of barricades. Paint with appropriate colors, graphics, and warning signs. Where appropriate and needed, provide lighting, including flashing red or amber lights.
4. Enclosure Fence: Before excavation begins, install an enclosure fence with lockable entrance gates to enclose the entire site or the portion sufficient to accommodate construction.
 - a. Provide open-mesh, chain link fencing with posts set in a compacted mixture of gravel and earth.
 - b. Provide plywood fence, 8 feet (2.5 m) high, framed with four 2-by-4-inch (50-by-100-mm) rails, and preservative-treated wood posts spaced not more than 8 feet (2.5 m) apart.
5. Covered Walkway: Erect a protective covered walkway along the adjacent public street. Coordinate with entrance gates. Comply with regulations of authorities having jurisdiction.
 - a. Construct walkways, if needed, using wood plank overhead decking, protective plywood enclosure walls, handrails, barricades, warning signs, lights, safe and well-drained walkways, and similar provisions for protection. Extend back wall beyond the structure to complete the enclosure fence. Paint and maintain in a manner acceptable to the Owner.
6. Security Enclosure and Lockup: Install temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, and theft. Provide a secure lockup where materials and equipment are of value and must be stored.
7. Environmental Protection: Operate temporary facilities and conduct construction in ways that comply with environmental regulations and minimize the possibility

that air, waterways, and subsoil might be contaminated or polluted. Avoid use of tools and equipment that produce harmful noise. Restrict use of noise-making equipment to hours that will minimize complaints.

- E. Operation: Enforce discipline in use of temporary facilities. Limit availability to intended uses to minimize waste and abuse.
- F. Maintenance: Maintain facilities in operating condition until removal. Protect from damage by freezing temperatures and similar elements. Maintain temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid damage.
- G. Protection: Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect during excavation.
- H. Termination and Removal: Remove each temporary facility when the need has ended, when replaced by a permanent facility, or no later than Substantial Completion. Complete or restore permanent construction delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 - 1. Materials and temporary facilities are the Contractor's property. The Owner reserves the right to take possession of project identification signs.
 - 2. Remove temporary paving. Where the area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil in the area. Remove materials contaminated with oil, asphalt and other petrochemical compounds, and substances that might impair growth of plant materials or lawns. Repair or replace paving, curbs, and sidewalks at the temporary entrances, as required by the governing authority.
 - 3. At Substantial Completion, clean and renovate permanent facilities used during the construction period.
 - a. Replace air filters and clean inside of ductwork and housings.
 - b. Replace worn parts and parts subject to unusual operating conditions.
 - c. Replace burned out lamps.

END OF SECTION 01500

SECTION 015639

TREE CARE AND PROTECTION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes general protection and pruning of existing trees and plants that are affected by execution of the Work, whether temporary or permanent construction.
- B. Related Sections.
 - 1. Section 02060 "Site Demolition" for temporary site fencing.
 - 2. Section 02100 "Site Preparation" Clearing" for removing existing trees and shrubs.
 - 3. Section 02112 "Tree Protection" Tree penalty clause
- C. Caliper: Diameter of a trunk measured by a diameter tape at 48 inches above the ground for trees larger than 4-inch size.
- D. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction, and indicated on Drawings.
- E. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction, defined by a circle concentric with each tree with a radius 1.5 times the diameter of the drip line, unless otherwise indicated.
- F. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Verification: For each type of the following:
 - 1. Organic Mulch: 1-pint volume of organic mulch; in sealed plastic bags labeled with composition of materials by percentage of weight and source of mulch.
 - 2. Protection-Zone Fencing: Assembled Samples of manufacturer's standard size made from full-size components.
 - 3. Protection-Zone Signage: Full-size Samples of each size and text, ready for installation.
- C. Tree Pruning Schedule: Written schedule detailing scope and extent of pruning of trees to remain that interfere with or are affected by construction.
 - 1. Species and size of tree. Large 50" Oak
 - 2. Location on site plan. Along entrance road adjacent to playfield.
 - 3. Reason for pruning. Preserve the life of the tree

1.3 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified arborist and tree service firm.
- B. Certification: From arborist, certifying that trees indicated to remain have been protected during construction according to recognized standards and that trees were promptly and properly treated and repaired when damaged.

- C. Maintenance Recommendations: From arborist, for care and protection of trees affected by construction during and after completing the Work.
- D. Existing Conditions: Tree is currently in the edge of the entrance road of the park and its roots spread out under the existing asphalt. Pavement has been lifted by the root growth.
 - 1. Contractor shall carefully document the existing conditions by photo or video.
 - 2. Contractor must identify any existing wounds or damage to the tree or root system that is visible or discovered during the process.

1.4 QUALITY ASSURANCE

- A. Arborist Qualifications. Licensed arborist in jurisdiction where Project is located.
- B. Tree Service Firm Qualifications: An experienced tree service firm that has successfully completed prescriptive tree care and protection work similar to that required for this Project and that will assign an experienced, qualified arborist to Project site during execution of the Work.
- C. Pre-prescription Care Conference: Conduct conference at Project site with arborist and landscape architect.
 - 1. Review methods and procedures related to prescriptive tree care and protection including, but not limited to, the following:
 - a. Construction schedule. Verify availability of materials, personnel, and equipment needed to make progress and avoid delays.
 - b. Enforcing requirements for protection zones.
 - c. Arborist's responsibilities.
 - d. Field quality control.

1.5 PROJECT CONDITIONS

- A. The following practices are prohibited within protection zones:
 - 1. Storage of construction materials, debris, or excavated material.
 - 2. Parking vehicles or equipment.
 - 3. Foot traffic.
 - 4. Erection of sheds or structures.
 - 5. Impoundment of water.
 - 6. Excavation or other digging unless otherwise indicated.
 - 7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
- B. Do not direct vehicle or equipment exhaust toward protection zones.
- C. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones and organic mulch.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Topsoil: Natural or cultivated top layer of the soil profile or manufactured topsoil; containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and

other objects more than 1 inch in diameter; and free of weeds, roots, and toxic and other non-soil materials.

1. Obtain topsoil only from well-drained sites where topsoil is 4 inches deep or more; do not obtain from bogs or marshes.
- B. Topsoil: Imported or manufactured topsoil complying with ASTM D 5268.
- C. Organic Mulch: Free from deleterious materials and suitable as a top dressing for trees and shrubs, consisting of one of the following:
 1. Type: Wood and bark chips.
 2. Size Range: 3 inches maximum, 1/2 inch minimum.
 3. Color: Natural.
- D. Protection-Zone Fencing: Fencing fixed in position and meeting the following requirements. Previously used materials may be used when approved by Architect.
 1. Plastic Protection-Zone Fencing: Plastic construction fencing constructed of high-density extruded and stretched polyethylene fabric with 2-inch maximum opening in pattern and weighing a minimum of 0.4 lb/ft.; remaining flexible from minus 60 to plus 200 deg F; inert to most chemicals and acids; minimum tensile yield strength of 2000 psi and ultimate tensile strength of 2680 psi; secured with plastic bands or galvanized-steel or stainless-steel wire ties; and supported by tubular or T-shape galvanized-steel postspaced not more than 8 feet apart.
 - a. Height: 4 feet.
 - b. Color: High-visibility orange, nonfading.
 2. Gates: Single or Double swing access gates matching material and appearance of fencing, to allow for maintenance activities within protection zones; leaf width 36 inches.
- E. Protection-Zone Signage: Shop-fabricated, rigid plastic or metal sheet with attachment holes pre-punched and reinforced; legibly printed with nonfading lettering and as follows:
 1. Size and Text: As shown on Drawings.
 2. Lettering: 3-inch-high minimum, black characters on white background.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Erosion and Sedimentation Control: Examine the site to verify that temporary erosion- and sedimentation-control measures are in place. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.
- B. For the record, prepare written report, endorsed by arborist, listing conditions detrimental to tree and plant protection.

3.2 PREPARATION.

- A. Locate and clearly identify trees, shrubs, and other vegetation to remain or to be relocated. Flag each tree trunk at 27 inches above the ground.

- B. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.
- C. Tree-Protection Zones: Mulch areas inside tree-protection zones and other areas indicated.
 - 1. Apply 3-inch average thickness of organic mulch. Do not place mulch within 6 inches of tree trunks.

3.3 TREE- AND PLANT-PROTECTION ZONES

- A. Protection-Zone Fencing: Install protection-zone fencing along edges of protection zones before materials or equipment are brought on the site and construction operations begin in a manner that will prevent people from easily entering protected area except by entrance gates. Construct fencing so as not to obstruct safe passage or visibility at vehicle intersections where fencing is located adjacent to pedestrian walkways or in close proximity to street intersections, drives, or other vehicular circulation.
- B. Protection-Zone Signage: Install protection-zone signage in visibly prominent locations in a manner approved by Architect. Install one sign spaced approximately every 50 feet on protection-zone fencing, but no fewer than four signs with each facing a different direction.
- C. Maintain protection zones free of weeds and trash.
- D. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by Architect.
- E. Maintain protection-zone fencing and signage in good condition as acceptable to Architect and remove when construction operations are complete and equipment has been removed from the site.
 - 1. Do not remove protection-zone fencing, even temporarily, to allow deliveries or equipment access through the protection zone.
 - 2. Temporary access is permitted subject to preapproval in writing by arborist if a root buffer effective against soil compaction is constructed as directed by arborist. Maintain root buffer so long as access is permitted.

3.4 EXCAVATION

- A. General: Excavate at edge of protection zones and for trenches indicated within protection zones according to requirements in Section 02200 "Earthwork."
- B. Trenching near Trees: Where utility trenches are required within protection zones, hand excavate under or around tree roots or tunnel under the roots by drilling, auger boring, or pipe jacking. Do not cut main lateral tree roots or taproots; cut only smaller roots that interfere with installation of utilities. Cut roots as required for root pruning.
- C. Redirect roots in backfill areas where possible. If encountering large, main lateral roots, expose roots beyond excavation limits as required to bend and redirect them without breaking. If encountered immediately adjacent to location of new construction and redirection is not practical, cut roots approximately 3 inches back from new construction and as required for root pruning.
- D. Do not allow exposed roots to dry out before placing permanent backfill. Provide temporary earth cover or pack with peat moss and wrap with burlap. Water and maintain in a moist condition. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil.

3.5 CROWN PRUNING

- A. Prune branches that are affected by temporary and permanent construction. Prune branches as follows:
 - 1. Prune trees to remain to compensate for root loss caused by damaging or cutting root system. Provide subsequent maintenance during Contract period as recommended by arborist.
 - 2. Pruning Standards: Prune trees according to ANSI A300 (Part 1).
 - 3. Cut branches with sharp pruning instruments; do not break or chop.
 - 4. Do not apply pruning paint to wounds.
- B. Chip removed branches and spread or stockpile over areas identified by Landscape Architect or dispose of off-site. Add nitrogen to all fresh mulch to accelerate decomposition.

3.6 REGRADING

- A. Lowering Grade: Where new finish grade is indicated below existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.
- B. Lowering Grade within Protection Zone: Where new finish grade is indicated below existing grade around trees, slope grade away from trees as recommended by arborist unless otherwise indicated.
- C. Raising Grade: Where new finish grade is indicated above existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.
- D. Minor Fill within Protection Zone: Where existing grade is 2 inches or less below elevation of finish grade, fill with topsoil. Place topsoil in a single uncompacted layer and hand grade to required finish elevations.

3.7 FIELD QUALITY CONTROL

- A. Inspections: Engage a qualified arborist to direct plant-protection measures in the vicinity of trees, shrubs, and other vegetation indicated to remain and to prepare inspection reports.

3.8 REPAIR AND REPLACEMENT

- A. General: Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by Architect.
 - 1. Submit details of proposed root cutting and tree and shrub repairs.
 - 2. Have arborist perform the root cutting, branch pruning, and damage repair of trees and shrubs.
 - 3. Treat damaged trunks, limbs, and roots according to arborist's written instructions.
 - 4. Perform repairs within 24 hours.
 - 5. Replace vegetation that cannot be repaired and restored to full-growth status, as determined by Architect.
- B. Trees: Remove and replace trees indicated to remain that are more than 25 percent dead or in an unhealthy condition before the end of the corrections period or are damaged during construction operations that Architect determines are incapable of restoring to normal growth pattern.
 - 1. Plant and maintain new trees as specified in Section 02900 "Plants."
- C. Soil Aeration: Where directed by Architect, aerate surface soil compacted during construction. Aerate 10 feet beyond drip line and no closer than 36 inches to tree trunk. Drill 2-inch-diameter

holes a minimum of 12 inches deep at 24 inches oc. Backfill holes with an equal mix of augured soil and sand.

3.9 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Remove excess excavated material, displaced trees, trash and debris, and legally dispose of them off Owner's property.

END OF SECTION 015639

SECTION 01600

MATERIALS AND EQUIPMENT

1.1 GENERAL

- A. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock.
 - 1. "Named Products" are items identified by the manufacturer's product name, including make or model number or designation, shown or listed in the manufacturer's published product literature.
- B. "Materials" are products substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.
- C. "Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections, such as wiring or piping.
- D. Product List: A list of products required is included at the end of this Section. Prepare a schedule in tabular form showing each product listed. Include the manufacturer's name and proprietary product names for each item listed. Coordinate product list with the Contractor's Construction Schedule and Submittal Schedule.
 - 1. Form: Prepare product list with information on each item tabulated under the following column headings:
 - a. Related Specification Section number.
 - b. Generic name used in Contract Documents.
 - c. Proprietary name, model number, and similar designations.
 - d. Manufacturer's name and address.
 - e. Supplier's name and address.
 - f. Installer's name and address.
 - g. Projected delivery date or time span of delivery period.
 - 2. Within 60 days after date of commencement of the Work, submit 3 copies of the product list. Provide a written explanation for omissions of data and variations from Contract requirements.
 - 3. The Architect will respond within 2 weeks of receipt of the list. No response within this period constitutes no objection to listed manufacturers or products but does not waive the requirement that products comply with Contract Documents. The Architect's response will include a list of unacceptable products.
- E. Source Limitations: To the fullest extent possible, provide products of the same kind from a single source.

1. When the Contractor is given the option of selecting between 2 or more products for use on the Project, the product selected shall be compatible with products previously selected.
- F. Nameplates: Except for required labels and operating data, do not attach manufacturer's nameplates or trademarks on surfaces exposed to view in occupied spaces or on the exterior.
1. Labels: Locate required product labels and stamps on concealed surfaces or, where required for observation after installation, on accessible surfaces that are not conspicuous.
 2. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on an easily accessible surface that is inconspicuous in occupied spaces. The nameplate shall contain the following information and other essential operating data:
 - a. Name of product and manufacturer.
 - b. Model and serial number.
 - c. Capacity.
 - d. Speed.
 - e. Ratings.
- G. Deliver, store, and handle products according to the manufacturer's recommendations, using means and methods that will prevent damage, deterioration, and loss, including theft.
1. Schedule delivery to minimize long-term storage and to prevent overcrowding construction spaces. Coordinate with installation to assure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 2. Deliver products in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 3. Inspect products upon delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
 4. Store products to facilitate inspection and measurement of quantity or counting of units. Store heavy materials away from the structure in a manner that will not endanger the supporting construction.
 5. Store products subject to damage by the elements aboveground, under cover in a weather tight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

1.2 PRODUCTS

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, new at the time of installation.

1. Provide products complete with accessories, trim, finish, safety guards, and other devices and details needed for a complete installation and the intended use and effect.
 2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.
- B. Product Selection Procedures: Procedures governing product selection include the following:
1. Proprietary Specification Requirements: Where Specifications name only a single product or manufacturer, provide the product indicated. No substitutions will be permitted.
 2. Semiproprietary Specification Requirements: Where Specifications name 2 or more products or manufacturers, provide 1 of the products indicated. No substitutions will be permitted.
 - a. Where products are specified by name, accompanied by the term "or equal," comply with provisions concerning "substitutions" to obtain approval for use of an unnamed product.
 3. Nonproprietary Specifications: When Specifications list products or manufacturers that are available and may be incorporated in the Work, but do not restrict the Contractor to use of these products only, the Contractor may propose any available product that complies with Contract requirements. Comply with Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.
 4. Descriptive Specification Requirements: Where Specifications describe a product, listing characteristics required, with or without use of a brand name, provide a product that provides the characteristics and otherwise complies with requirements.
 5. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply and are recommended for the application. Manufacturer's recommendations may be contained in product literature or by the manufacturer's certification of performance.
 6. Compliance with Standards, Codes, and Regulations: Where Specifications only require compliance with an imposed code, standard, or regulation, select a product that complies with the standards, codes, or regulations specified.
 7. Visual Matching: Where Specifications require matching a Sample, the Architect's decision on whether a product matches will be final. Where no product in the specified category matches and complies with other requirements, comply with provisions concerning "substitutions" for selection of a matching product in another category.
 8. Visual Selection: Where requirements include the phrase "... as selected from manufacturer's standard colors, patterns, textures ..." or a similar phrase, select a

product that complies with other requirements. The Architect will select the color, pattern, and texture from the product line selected.

1.3 EXECUTION

- A. Comply with manufacturer's instructions for installation of products. Anchor each product securely in place, accurately located and aligned with other Work. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION 01600

SECTION 01631

SUBSTITUTIONS

1.1 GENERAL

- A. Substitutions: Changes in products, materials, equipment, and methods of construction required by the Contract Documents proposed after award of the Contract are considered requests for substitutions. The following are not a request for substitutions:
1. Substitutions requested during the bidding period and accepted by Addendum prior to award of the Contract.
 2. Revisions to the Contract Documents requested by the Owner.
 3. Specified options included in the Contract Documents.
 4. Contractor's compliance with regulations issued by governing authorities.
- B. Substitution Request Submittal: The Architect/Engineer or Client Representative will consider requests for substitution received within 60 days after commencement of the Work.
1. Submit 3 copies of each request for substitution. Submit requests according to procedures required for change-order proposals.
 2. Identify the product or method to be replaced in each request. Include related Specification Section and Drawing numbers.
 3. Provide documentation showing compliance with the requirements for substitutions and the following information:
 - a. Coordination information, including a list of changes needed to other Work that will be necessary to accommodate the substitution.
 - b. A comparison of the substitution with the Work specified, including performance, weight, size, durability, and visual effect.
 - c. Product Data, including Drawings and descriptions of products and installation procedures.
 - d. Samples, where applicable or requested.
 - e. A statement indicating the effect on the Contractor's Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the substitution on Contract Time.
 - f. Cost information, including a proposal of the net change, if any in the Contract Sum.
 - g. Certification that the substitution conforms to the Contract Documents and is appropriate for the applications indicated.
 - h. The Contractor's waiver of rights to additional payment or time that may become necessary because of the failure of the substitution to perform adequately.
 4. Architect's Action: If necessary, the Architect will request additional information within one week of receipt of a request for substitution. The Architect will notify

the Contractor of acceptance or rejection within 2 weeks of receipt of the request. Acceptance will be in the form of a change order.

- a. Use the product specified if the Architect cannot make a decision within the time allocated.

1.2 PRODUCTS

- A. Conditions: The Architect will receive and consider a request for substitution when one or more of the following conditions are satisfied. Otherwise, the Architect will return the requests without action except to record noncompliance with these requirements.
 1. Extensive revisions to the Contract Documents are not required.
 2. Changes are in keeping with the intent of the Contract Documents.
 3. The specified product cannot be provided within the Contract Time. The Architect will not consider the request if the specified product cannot be provided as a result of failure to pursue the Work promptly.
 4. The request is related to an "or-equal" clause.
 5. The substitution offers the Owner a substantial advantage, in cost, time, or other considerations, after deducting compensation to the Architect for redesign and increased cost of other construction.
 6. The specified product cannot receive approval by a governing authority, and the substitution can be approved.
- B. The Contractor's submittal and the Architect's acceptance of Shop Drawings, Product Data, or Samples for construction not complying with the Contract Documents do not constitute an acceptable request for substitution, nor do they constitute approval.

1.3 EXECUTION (Not Applicable)

END OF SECTION 01631

SECTION 01700

CONTRACT CLOSEOUT

1.1 GENERAL

- A. Closeout requirements for specific construction activities are included in the appropriate Sections in Divisions 2 through 16.
- B. Substantial Completion: Before requesting inspection for certification of Substantial Completion, complete the following:
 - 1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the Work claimed as substantially complete.
 - a. Include supporting documentation for completion and an accounting of changes to the Contract Sum.
 - 2. Advise the Owner of pending insurance changeover requirements.
 - 3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications, and similar documents.
 - 4. Submit record drawings, maintenance manuals, final project photographs, damage or settlement surveys, property surveys, and similar final record information.
 - 5. Deliver tools, spare parts, extra stock, and similar items.
 - 6. Changeover locks and transmit keys to the Owner.
 - 7. Complete startup testing of systems and instruction of operation and maintenance personnel. Remove temporary facilities, mockups, construction tools, and similar elements.
 - 8. Splash pad operation and maintenance training by the Splash Pad equipment provider.
 - 9. Complete final cleanup requirements, including touchup painting.
 - 10. Touch up and repair and restore marred, exposed finishes.
- C. Inspection Procedures: On receipt of a Request for Inspection, the Landscape Architect will proceed or advise the Contractor of unfilled requirements. The Landscape Architect will prepare the Certificate of Substantial Completion following inspection or prepare a Punch List to advise the Contractor of construction items that must be completed or corrected before the certificate will be issued.
 - 1. The Landscape Architect will repeat inspection when requested and assured that the Work is substantially complete.
 - 2. Results of the completed inspection will form the basis of requirements for final acceptance.
- D. Final Acceptance: Before requesting inspection for certification of final acceptance and final payment, complete the following:

1. Final payment request with releases and supporting documentation. Include insurance certificates where required.
 2. Submit a statement, accounting for changes to the Contract Sum.
 3. Submit a copy of the final inspection list stating that each item has been completed or otherwise resolved for acceptance.
 4. Submit final meter readings for utilities, a record of stored fuel, and similar data as of the date of Substantial Completion.
 5. Submit consent of surety to final payment.
 6. Submit a final settlement statement.
 7. Submit evidence of continuing insurance coverage complying with insurance requirements.
- E. Re-inspection Procedure: The Landscape Architect will re-inspect the Work upon receipt of notice that the Work has been completed, except for items whose completion is delayed under circumstances acceptable to the Architect.
1. Upon completion of re-inspection, the Landscape Architect will prepare a certificate of final acceptance. If the Work is incomplete, the Landscape Architect will advise the Contractor of Work that is incomplete or obligations that have not been fulfilled but are required in the form of a Punch List.
 2. If necessary, re-inspection will be repeated.
- F. Record Document Submittals: Do not use record documents for construction. Protect from loss in a secure location. Provide access to record documents for the Landscape Architect's reference.
- G. Record Drawings: Maintain a set of prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark the drawing most capable of showing conditions fully and accurately. Give attention to concealed elements.
1. Mark sets with red pencil. Use other colors to distinguish between variations in separate categories of the Work.
 2. Organize record drawing sheets into manageable sets. Bind with durable-paper cover sheets; print titles, dates, and other identification on the cover of each set.
 3. Upon completion of the work, submit one reproducible copy of the Record Drawings to the Owner.
- H. Record Specifications: Maintain one copy of the Project Manual, including addenda. Mark to show variations in Work performed in comparison with the text of the Specifications and modifications. Give attention to substitutions and selection of options and information on concealed construction. Note related record drawing information and Product Data.
1. Upon completion of the Work, submit record Specifications to the Landscape Architect for the Owner's records.
 2. Submit complete copies of all testing data and shop drawings to the Owner.

- I. Maintenance Manuals: Organize operation and maintenance data into sets of manageable size. Bind in individual, heavy-duty, 2-inch (51-mm), 3-ring, binders, with pocket folders for folded sheet information. Mark identification on front and spine of each binder. Include the following information:
 1. Emergency instructions.
 2. Spare parts list.
 3. Copies of warranties.
 4. Wiring diagrams.
 5. Shop Drawings and Product Data.

1.2 PRODUCTS (Not Applicable)

1.3 EXECUTION

- A. Operation and Maintenance Instructions: Arrange for each Installer of equipment that requires maintenance to provide instruction in proper operation and maintenance. Include a detailed review of the following items:
 1. Maintenance manuals.
 2. Spare parts, tools, and materials.
 3. Lubricants and fuels.
 4. Identification systems.
 5. Control sequences.
 6. Hazards.
 7. Warranties and bonds.
 8. Maintenance agreements and similar continuing commitments.
- B. As part of instruction for operating equipment, demonstrate the following:
 1. Startup and shutdown.
 2. Emergency operations and safety procedures.
 3. Noise and vibration adjustments.
- C. Final Cleaning: Employ experienced cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Complete the following operations before requesting inspection for certification of Substantial Completion.
 1. Remove labels that are not permanent labels.
 2. Clean transparent materials, including mirrors and glass. Remove glazing compounds. Replace chipped or broken glass.
 3. Clean exposed finishes to a dust-free condition, free of stains, films, and foreign substances. Leave concrete floors broom clean. Vacuum carpeted surfaces.
 4. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication. Clean plumbing fixtures. Clean light fixtures and lamps.

- 5. Clean the site of rubbish, litter, and foreign substances. Sweep paved areas; remove stains, spills, and foreign deposits. Rake grounds to a smooth, even-textured surface.
- D. Pest Control: Engage a licensed exterminator to make a final inspection and rid the Project of rodents, insects, and other pests.
- E. Removal of Protection: Remove temporary protection and facilities.
- F. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Remove waste materials and dispose of lawfully.

END OF SECTION 01700

CITY OF BROOKHAVEN
CPL 15092.00 C

MURPHEY CANDLER PARK – COMMUNITY GREEN
CONTRACTOR WARRANTY

SECTION 01740-A

CONTRACTOR WARRANTY FORM

PROJECT: CITY OF BROOKHAVEN – MURPHEY CANDLER PARK IMPROVEMENTS

LOCATION: BROOKHAVEN, GEORGIA

OWNER: CITY OF BROOKHAVEN

GENERAL CONTRACTOR:

We _____, contractor
(Company Name)

for _____, as described in Specification Section (s)
(list trade)

_____ do hereby warrant
(list appropriate sections of specifications)

that all labor and materials furnished and work performed in conjunction with the above referenced project are in accordance with the Contract Documents and authorized modifications thereto, and will be free from defects due to defective materials or workmanship for a period of one year from Date of Substantial Completion and that all street signs will be free from defects due to defective materials or workmanship for a period of seven years from Date of Substantial Completion.

This warranty commences at 12:00 noon on _____ and expires at 12:00 noon on _____. Should any defect develop during the warranty period due to improper materials, workmanship or arrangement, the defect shall, upon written notice by the Owner, be repaired or replaced by the undersigned at no expense to the Owner.

Nothing in the above shall be deemed to apply to work which has been abused or neglected by the Owner.

DATE: _____ FOR: _____
(COMPANY NAME)

BY: _____

TITLE: _____

END OF SECTION 01740A

SECTION 01740

WARRANTIES

1.1 GENERAL

- A. Standard product warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner.
- B. Special warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the Owner.
 - 1. Refer to General Conditions for Contractor's period for correction of Work.
 - 2. Refer to Section 02900 for plant material warranties.
 - 3. All conditions of this Section also apply to warranties stated in other sections.
- C. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products. Manufacturer's disclaimers and limitations on product warranties do not relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.
- D. Related Damages and Losses: When correcting failed or damaged warranted construction, remove and replace construction that has been damaged as a result of such failure or must be removed and replaced to provide access for correction of warranted construction.
- E. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
- F. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of the Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.
- G. Owner's Recourse: Expressed warranties made to the Owner are in addition to implied warranties and shall not limit the duties, obligations, rights, and remedies otherwise available under the law. Expressed warranty periods shall not be interpreted as limitations on the time in which the Owner can enforce such other duties, obligations, rights, or remedies.
 - 1. Rejection of Warranties: Owner reserves the right to reject warranties and to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

2. Where the Contract Documents require a special warranty, or similar commitment, the Owner reserves the right to refuse to accept the Work, until the Contractor presents evidence that entities required to countersign such commitments are willing to do so.
- H. Submit written warranties to the Architect prior to the date certified for Substantial Completion. If the Architect's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion, submit written warranties upon request of the Architect.
1. When a designated portion of the Work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Architect within 15 days of completion of that designated portion of the Work.
- I. When the Contract Documents require the Contractor, or the Contractor and a subcontractor, supplier or manufacturer to execute a special warranty, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Owner, through the Architect, for approval prior to final execution.
1. Refer to Divisions 2 through 16 Sections for specific content requirements and particular requirements for submitting special warranties.
- J. Bind warranties and bonds in heavy-duty, commercial-quality, durable 3-ring, vinyl-covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (*115-by-280-mm*) paper.
1. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the 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 the Installer.
 2. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project title or name, and name of the Contractor.
 3. When warranted construction requires operation and maintenance manuals, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

1.2 PRODUCTS (Not Applicable)

1.3 EXECUTION

- A. List of Warranties: As follows:
Irrigation, Planting, Lighting, Electrical and any other products under warranty.
- B. Schedule: Provide warranties on products and installations as specified in the included Sections: Division 2, thru Division 16.

END OF SECTION 01740

SUB-CONTRACTOR WARRANTY FORM

PROJECT: CITY OF BROOKHAVEN – MURPHEY CANDLER PARK IMPROVEMENTS

LOCATION: MURPHEY CANDLER PARK - BROOKHAVEN, GEORGIA

OWNER: CITY OF BROOKHAVEN

SUB-CONTRACTOR:

We _____, sub-contractor
(Company Name)

for _____, as described in Specification Section (s)
(list trade)

_____ do hereby warrant
(list appropriate sections of specifications)

that all labor and materials furnished and work performed in conjunction with the above referenced project are in accordance with the Contract Documents and authorized modifications thereto, and will be free from defects due to defective materials or workmanship for a period of one year from Date of Substantial Completion and that all street signs will be free from defects due to defective materials or workmanship for a period of seven years from Date of Substantial Completion.

This warranty commences at 12:00 noon on _____
_____ and expires at 12:00 noon on _____. Should by any defect develop during the warranty period due to improper materials, workmanship or arrangement, the defect shall, upon written notice by the Owner, be repaired or replaced by the undersigned at no expense to the Owner.

Nothing in the above shall be deemed to apply to work which has been abused or neglected by the Owner.

DATE: _____ FOR: _____
(COMPANY NAME)

BY: _____

TITLE: _____

END OF SECTION 01741