

**PROPOSAL FORM**  
**BALTIMORE COUNTY**  
**DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION**  
**TOWSON, MARYLAND**

**Division of Construction Contracts Administration**

**ARCHITECT**

Site Resources, Inc.  
4 North Park Drive; Suite 100  
Cockeysville, Maryland 21030  
Phone: 410-689-0438



Contract Number 25067 GX0  
Property Management Project  
Cloverland Park Renovations & Enhancements –  
12340 Dulaney Valley Road, Phoenix, Maryland 21131  
Phoenix – District 10c3  
Workday Number  
PROJ-10000752

**CONTRACT BASED ON SEPTEMBER 2023**  
**STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS**  
**AND STANDARD DETAILS FOR CONSTRUCTION**

**Bidders Information**

A pre-bid meeting will be held on Wednesday, June 18, 2025 at 11:00 a.m. EST via WebEx. *Phone-In* (Audio Only) 1-415-655-0001, Meeting Number 2314 392 4132##. *Video Conference* go to <https://signin.webex.com/join> Meeting Number 2314 392 4132, **Password: 9jZYJySZV72**, for Webex link go to: [www.baltimorecountymd.gov/departments/public-works/engineering/contracts/current-solicitations](http://www.baltimorecountymd.gov/departments/public-works/engineering/contracts/current-solicitations)

Baltimore County First Source Hiring Agreement **see pages 203-204**. State Prevailing Wage Requirements & Wage Rates **see pages 205-211**.

**(Contract Disclosure):** “*Wage rates that are in effect as of the contract solicitation date will be the wage rates through the duration of the project*”

MBE/WBE Requirements & Forms **see pages 212-226**

**THIS PROPOSAL FORM INCLUDES AND INCORPORATES ALL DOCUMENTS AND INFORMATION REFLECTED, LISTED, AND/OR REFERENCED IN THIS TABLE OF CONTENTS, AND ALL SUCH DOCUMENTS AND INFORMATION ARE PART OF AND INCORPORATED INTO THE CONTRACT DOCUMENTS.**

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# SECTION I

## INFORMATION FOR BIDDERS

### ELECTRONIC SUBMITTAL PROCESS

To be considered, Bids (Section IV – Proposal) shall be received by the bid closing date and time to the following email address [dpwbid@baltimorecountymd.gov](mailto:dpwbid@baltimorecountymd.gov). The contract number and company name should be referenced in the Subject Line of the email. Bids may not be submitted by any other means. Bids that are mailed or otherwise delivered to the Purchasing Division (including emails which indicate links to locations where the bid may be downloaded) and/or emails sent to any other Baltimore County email address will not be accepted.

Late Bids will not be considered. Bidders are strongly encouraged not to wait until the last minute to submit bids. The time stated on the auto-receipt (described below) will be definitive of the time of receipt. Bids received after the deadline will not be accepted. Bidders are advised that the County cannot receive email attachments greater in size than twenty-five (25) megabytes and this size limitation may be further reduced by requirements of the Bidder's email provider which are beyond the control of the County. Bidder should consider separating any large bid attachment into multiple parts and emailing each part separately. In such case, Bidder will note that each email is *1 of 2, 2 of 2*, etc. Multiple part bids will not be considered unless all parts are received by the bid closing date and time.

After submitting a Bid to [dpwbid@baltimorecountymd.gov](mailto:dpwbid@baltimorecountymd.gov), and upon successful receipt by the County thereof, Bidder will receive an auto-receipt email. This receipt is proof that the bid has been received by the Division of Construction Contracts Administration and should be retained for Bidder's records. In the case of a bid submitted in multiple parts as described above, an auto-receipt email will be generated for each part. The County has no obligation to consider any Bid for which an auto-receipt was not generated.

As with any system, power outages or technology problems may arise that are outside of the County's control and could affect your submission. The County will not be held accountable for such issues that may delay the transmission of any Bid.

**NOTE:** Electronic copy of the Bid Bond will be accepted at bid opening. The apparent low bidder is required to submit the original Bid Bond within ten (10) days after the bid opening to the Division of Construction Contracts Administration, 111 West Chesapeake Avenue, Room 300B, Towson, Maryland 21204.

### INSTRUCTIONS AND SPECIFICATIONS

Refer to the enclosed proposal sheets for quantities to be bid upon. All proposals submitted on the attached form must give the price in clear figures for each item of the proposed work and be signed by the bidder with his name and address. Bidders must not change any item in the proposal for which a price has been stipulated by the County. Any change will cause rejection of the proposal.

NOTE: STATEMENT UNDER OATH FORM TO ACCOMPANY BID as per Baltimore County Purchasing Act 65-98, Section 15-94 and 15-95 which requires that the enclosed affidavit (see Proposal Affidavit pages in Section IV) be completed and submitted as part of the sealed bid.

Proposals made on any other than the attached form will not be considered. All papers included in, bound thereto, or attached to the Proposal Form are necessary parts thereof and shall not be detached, separated, or altered in their intent.

**Changes in the phraseology of the proposal, additions, or limiting provisions will render the proposal informal or void and may cause its rejection.**

All right is hereby reserved by the Purchasing Agent to reject any or all proposals and to waive formalities and technicalities as the interest of the County may require.

No successful bidder may withdraw his bid within NINETY (90) days after the opening thereof.

The successful bidder will be required to be bonded to Baltimore County, Maryland to the sum of One Hundred per Cent (100%) of the amount of his proposal or proposals according to the form of bond hereto attached for projects in excess of \$25,000.00.

This Proposal must be accompanied by a Bid Bond in an amount of 5% of the bid, the exact amount to be determined by the difference between the low bid and the next lowest bid if two or more bids are received, or 5% of the bid if one bid is received. This guarantees payment of the amount thus determined in case of a default in any matter specified as required before award or in any matter resulting in failure to execute and deliver an Agreement, together with Payment and Performance Bonds, after award. The Bid Bond must be in the form accompanying the Proposal executed by a Surety licensed in the State of Maryland. The Surety must be currently rated "B" or better by the A. M. Best Company, and the bid must be in an amount less than, or equal to, the underwriting limitation contained in Department of Treasury Circular 570 as amended at the time of the underwriting.

All work to be performed under this contract shall be done under strict compliance with Baltimore County Department of Public Works and Transportation September 2023 Standard Specifications for Construction and Materials and Standard Details for Construction and any and all proposed revisions thereto as of the date of advertisement and copies of which are available on the County's website at [www.baltimorecountymd.gov/departments/public-works/standards](http://www.baltimorecountymd.gov/departments/public-works/standards), and all of which are made a part hereof and incorporated herein (collectively, the "Specifications").

If the bidder to whom an award is made shall fail to execute the contract and bond hereto attached and as herein provided, the award may be annulled and the contract awarded to the lowest responsible bidder who has consented to a time extension, and such bidder shall fulfill every stipulation embraced herein as if he were the original party to whom the award was made, or the Purchasing Agent may reject all of the bids as the interest of the County may require.

The Bid Bond of the three lowest bidders is deemed to be effective until the execution and delivery of the Contract Agreement, together with Payment and Performance Bonds for projects in excess of \$25,000.00 or until rejection of all bids, whereupon Surety is deemed relieved of all further obligations under the bid bonds provided.

Bidders must examine the drawings and specifications carefully and must make a personal examination of the location and nature of the proposed work. In case doubt shall arise as to the meaning or intent of anything shown on the drawings or comprised in the specification, inquiry shall be made of the Director of Public Works and Transportation at least five (5) days prior to the date of

bid opening. The submission of the Proposal shall indicate that the bidder thoroughly understands the drawings and the terms of the Specifications.

To better ensure fair competition and to permit a determination of the lowest bidder, unresponsive bids or bids obviously unbalanced may be rejected by the Purchasing Agent.

Bidders are required to fill out the total price column and total their proposals so that the result of the bidding, barring possible arithmetical errors, will be known at once. Any errors in computations will be corrected by the Engineer when the proposals are canvassed. Where the unit price and the total price are at variance, the unit price will prevail.

Bidders must be prepared to complete the work within the time stated in the proposal.

**NOTE: ONLY CONTRACTORS FORMALLY PRE-QUALIFIED WITHIN THE ADVERTISED WORK CLASSIFICATION BY THE DIRECTOR OF PUBLIC WORKS AND TRANSPORTATION OF BALTIMORE COUNTY 10 CALENDAR DAYS PRIOR TO BID OPENING WILL BE ELIGIBLE TO SUBMIT BIDS.**

Contracts for work under this proposal will obligate the contractors and subcontractors not to discriminate in employment practices. Bidders must, if requested, submit a compliance report concerning their employment practices and policies in order to maintain their eligibility to receive the award of the contract. Successful bidders must be prepared to comply in all respects with the Contract Provisions regarding nondiscrimination.

Baltimore County has adopted a Minority Business Enterprise (MBE) program and Women's Business Enterprise (WBE) Program. The percentage of participation applies to the contract amount awarded to the Contractor. Qualified minority subcontractors are those certified as being a Minority Business Enterprise by the following:

1. Maryland Department of Transportation Certification Committee (MDOT)
2. City of Baltimore, Minority Business Certification Council

Projects funded by the Federal Highway Administration are limited to the certification listed under #1 (MDOT).

More detailed information regarding the County's MBE/WBE Program can be obtained from the County MBE Office, telephone (410) 887-3407. See Executive Order dated December 6, 2022. MBE/WBE Participation Summary and Forms A, B, C, D and E enclosed in this proposal booklet.

**NOTE:** If you do not complete and submit the enclosed forms with your bid or offer to the County, the County may, in its sole discretion, deem your bid or offer **NON-RESPONSIVE** and accordingly the **COUNTY WILL NOT CONSIDER YOU FOR CONTRACT AWARD.**

The County reserves the right to require the low bidder to produce evidence indicating that the company's financial condition is equal to, or better than, that enjoyed by the company at the time of prequalification. This additional information may be in the form of a financial statement or other evidence satisfactory to the Office of Budget and Finance.

Bidders' attention is directed to the requirement that a permit must be obtained from the Baltimore County Bureau of Highways and Bureau of Traffic Engineering prior to cutting any County

road for the purpose of obtaining sub-surface soils information, and permission must be obtained from the State Highways Administration prior to making any openings in a State road.

Under no circumstances shall a bidder enter upon any property outside a County or State road for the purpose of securing sub-surface soils information until permission is received from the property owner. The fact that the County has obtained a utility easement does not give the bidder the right to enter upon the property.

**Prevailing index price of asphalt cement/ton \$640.00.**

**INCLEMENT WEATHER POLICY:** If Baltimore County General Government Offices are open or open with liberal leave the day the bids are due, the bids are due as stated in the bid documents (date and time). **ONLY** when the Baltimore County General Government Offices are **OFFICIALLY CLOSED** the day the bids are due, the bid date will be postponed and an Addendum will be issued the next business (or next day buildings are officially open) day the county offices are open with the new bid date and time.

**BID TABULATIONS:** All bid tabulations will be confidential until after final award, at which time the total bid amounts for all bidders, as well as the complete bid tabulations for the top three (3) bidders, can be inspected by others when requested in writing pursuant to the Maryland Public Information Act.

**ALTERNATIVE SOURCES OF CONTRACT BONDS:** In the event your company is unable to qualify for bonding through a traditional commercial surety company, you may qualify for the required bonds through the State of Maryland, Department of Commerce (DOC). The **Maryland Small Business Development Financing Authority (MSBDFA, pronounced Mis-Bid-Fa)**, an agency of DOC, operates a Surety Bond Program designed to assist small businesses, based in Maryland, that are unable to obtain adequate bonding on reasonable terms in the commercial marketplace. MSBDFA provides bid, payment and performance bonds for contracts funded by government agencies, regulated utilities and private entities. The penal sums of the bonds are limited to the aggregate amount of \$2,500,000 and companies may pre-qualify for multiple bonds within pre-approved terms and conditions. MSBDFA also provides lines of credit, term loans and loan guarantees to help qualified businesses purchase equipment and real property, make improvements to leased property, refinance existing debt and assist them with their working capital needs. For more information on how to apply, you may contact: Meridian Management Group, Inc. (MMG), (the Program's Manager), 826 E. Baltimore Street, Baltimore, Maryland 21202, Telephone: (410) 333-4270. Or visit their website at [www.mmcapitalgroup.com](http://www.mmcapitalgroup.com) for information, applications and a checklist of required documents and reports that must accompany the application.

## **SECTION II**

### **SPECIAL PROVISIONS**

## **MAINTENANCE BOND**

Per the Baltimore County Department of Public Works and Transportation September 2023 Standard Specifications for Construction and Materials, Section GP – 4.10 (C) states, the contractor is required to post a maintenance bond in the amount of five (5) percent of the total cost of the contract or withhold five (5) percent retainage for two (2) years from the date of Final Acceptance.

BALTIMORE COUNTY, MARYLAND

BOND NO. \_\_\_\_\_

CONTRACT NO. \_\_\_\_\_

**MAINTENANCE BOND**

THIS MAINTENANCE BOND is entered into on this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by and between \_\_\_\_\_ as principal (“Principal”) and \_\_\_\_\_, a business entity that is authorized to transact business in the State of Maryland and is organized and existing under the laws of the State of \_\_\_\_\_, as surety ("Surety"), are held and firmly bound unto Baltimore County, Maryland, a body corporate and politic of the State of Maryland (“County”), as Obligee.

WHEREAS, the above-named Principal has entered into a written contract known as Contract Number \_\_\_\_\_ dated \_\_\_\_\_, 20\_\_ with Obligee for \_\_\_\_\_ (the "Agreement"), the terms of which are hereby incorporated by reference; and

WHEREAS, Principal has completed construction under the Agreement; and

WHEREAS, the Agreement includes a warranty on the quality of the Work performed that runs for a period of two (2) years from the date of the County’s final acceptance and that runs for two (2) additional years beyond the repair date if any repair is done during the warranty period; and

WHEREAS, Principal is required to cause this instrument to be executed and delivered to Obligee as security for maintenance during the warranty period in an amount equal to 5% of the total value of the Contract.

NOW, THEREFORE, the Principal and Surety are held and firmly bound unto the Obligee in the sum of \$ \_\_\_\_\_ Dollars (\$ \_\_\_\_\_), lawful money of the United States of America, for the payment of which sum of money the Principal and Surety do bind themselves and their personal representatives, legal representatives, successors, and assigns, jointly and severally, firmly by this maintenance bond.

The conditions of this bond are as follows:

1. The Principal shall, for a period of two (2) years from and after the date of completion and acceptance of same by Obligee, replace all defects arising in the Work, whether resulting from defective materials, equipment, design furnished or workmanship. After such period, this obligation shall be null and void; otherwise it shall remain in full force and effect.

2. In the event of a default on the part of the Principal that may be the subject of a claim under this bond, Obligees shall mail, by certified mail, to Surety at the address listed below, a written statement that a claim is being made under the bond and, with substantial accuracy, the amount of the claim. Surety shall have no obligation to Obligees under this bond until the notice of claim is mailed.
3. When the Obligees has satisfied the condition of Paragraph 2 that a notice of claim be mailed, the Surety shall promptly and at the Surety's expense send an answer to Obligees within 30 days after the date of the claim. The answer shall state the amounts that are undisputed and the basis for challenging any amounts that are disputed. The answer shall be accompanied by payment (or arrangements for immediate payment) of any undisputed amounts.
4. Surety expressly waives any right to receive notice of extensions of time or alterations or modifications to the Agreement that may be granted by Obligees and agreed upon by Principal, and any such extensions, alterations, or modifications shall not affect the obligation of the Surety under this bond.
5. This bond is a specialty governed by the twelve-year statute of limitations period set forth in the Annotated Code of Maryland Courts and Judicial Proceedings §5-102.

WITNESS OR ATTEST:

\_\_\_\_\_

\_\_\_\_\_  
(Principal – Contractor Name)

By: \_\_\_\_\_

Type Name: \_\_\_\_\_

Type Title: \_\_\_\_\_

Date: \_\_\_\_\_

\_\_\_\_\_  
(Surety)

By: \_\_\_\_\_

Type Name: \_\_\_\_\_

Type Title: \_\_\_\_\_

Type Address: \_\_\_\_\_

\_\_\_\_\_  
Date: \_\_\_\_\_

The Contract shall be done in strict compliance with the Baltimore County Department of Public Works and Transportation September 2023 "Standard Specifications for Construction and Materials" and "Standard Details for Construction", and any and all revisions thereto as of the date of the fully executed Contract, including but not limited to the General Conditions Building Projects, as applicable, and all of which are made a part hereof and incorporated herein ( collectively, the "**Specifications**"). Copies of which are available on the County's website at [www.baltimorecountymd.gov/departments/public-works/standards](http://www.baltimorecountymd.gov/departments/public-works/standards). **IN ADDITION, THE CONTRACTOR UNDERSTANDS AND AGREES THAT THE FOLLOWING SECTIONS OF THE SPECIFICATIONS (GP-1.03 AND GP-5-15) SHALL BE STRICKEN AND THE FOLLOWING SHALL BE INSERTED IN AND INCORPORATED INTO THE CONTRACT IN LIEU THEREOF:**

## **GP-1.03 ORGANIZATIONAL DEFINITIONS**

**Administration** - Baltimore County.

**Administrator** - The Director of the Office of Budget and Finance, Baltimore County.

**Baltimore County** - Baltimore County, Maryland: a body corporate and politic.

**Department** - The word "Department" shall mean the Office of Budget and Finance of Baltimore County.

**Engineer** - One of the following engineering executives:

Director of Office of Budget and Finance  
Chief, Property Management Division of the Office of Budget and Finance

Any delegation of the Engineer's authority must be authorized in writing by any one of the above listed officials, and such delegation of authority will pertain only to the specific contract and/or contracts shown by the authorization. The title of the specific official will appear in those cases within these specifications where the word "Engineer" as defined herein is not sufficiently specific.

**Inspector** - The authorized representative of the procurement officer assigned to make detailed inspection of any or all portions of the work, or materials therefor.

**Procurement Officer** - See Engineer.

## **GP-5.15 DISPUTES**

(a) Except as otherwise may be provided by applicable law or regulation, all disputes arising under or as a result of a breach of this Contract that are not disposed of by mutual agreement shall be resolved in accordance with this General Provision.

(b) As used herein, "claim" means a: written demand or assertion by one of the parties seeking, as a legal right, the payment of money, adjustment or interpretation of Contract terms, or other relief, arising under or relating to this Contract.

A voucher, invoice, or request for payment that is not in dispute when submitted is not a claim under this General Provision. However, if the submission subsequently is not acted upon in a reasonable time, or is disputed either as to liability or amount, it may be converted to a claim for the purpose of this General Provision.

**(c)** When a claim cannot be resolved by mutual agreement, the Contractor shall submit a written request for decision to the Department's Chief of the Property Management Division for his decision in consultation with the County Office of Law. The Contractor's written request shall set forth all the facts surrounding the controversy, including, but not limited to, those items listed in GP-5.14(b). Any claim by the County shall be decided in like manner.

**(d)** The Contractor, at the discretion of the Engineer, may be afforded an opportunity to be heard and to offer evidence in support of his claim. Pending resolution of a claim, the Contractor shall proceed diligently with the performance of the Contract.

**(e)** The Department's Chief of the Property Management Division shall decide any and all claims. The decision by the Department's Chief of the Property Management Division shall be issued within ninety (90) Days on matters of less than fifty thousand dollars (\$50,000) and within one hundred eighty (180) Days on matters of fifty thousand dollars (\$50,000) or more. The written decision of the Department's Chief of the Property Management Division shall be final and binding unless appealed in writing to the Director of the Department within thirty (30) Days of the Chief's written opinion to the parties. If the Chief's decision is timely appealed in writing to the Director of the Department, the Director of the Department, serving as referee, will review the written appeal submitted to assure all reasonable attempts were made to resolve the appeal.

**(f)** The Director shall issue his/her decision in writing within ninety (90) Days. The Director's decision shall be final and conclusive unless a written appeal is mailed or otherwise filed with the County Administrative Officer within thirty (30) Days of the Director's written decision.

**(g)** When the County Administrative Officer is satisfied all efforts at the Department level were made to resolve the dispute, a claim shall be resolved as follows:

**(1)** Subject to, and without in any way enlarging or limiting the other provisions of the Contract, the parties to any Agreement which adopts or incorporates by reference these Standard Specifications, appoint the County Administrative Officer as an administrative hearing officer pursuant to Article 25A, "Chartered Counties of Maryland", of the Annotated Code of Maryland.

**(2)** The parties further grant the County Administrative Officer the right to delegate this responsibility and authority in writing to a County official who is a registered professional engineer, independent of the Department of Public Works and Transportation's Division of Construction Contracts Administration, or to any other County official.

**(3)** For disputes involving ten thousand dollars (\$10,000) or more the decision of the administrative hearing officer shall be final and binding on both parties, subject only to such appeals on the record as provided by Article 25A. For disputes involving less than ten thousand dollars (\$10,000), the decision of the administrative hearing officer shall be final and binding on both parties.

# **GENERAL CONDITIONS**

## **BUILDING PROJECTS**



**Revised September 1, 2024,  
in compliance with September 2023  
Standard Specifications for Construction and Materials**

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# GENERAL CONDITIONS DESIGN BUILD BUILDING PROJECTS

## I. SPECIFICATIONS

### Article 1 Applicable Specifications

All work performed under this Contract shall be done under strict compliance with the *Specifications* bound herewith, and with the *Baltimore County Standard Specifications for Construction and Materials* and the *Standard Details for Construction* dated September 2023 and subsequent addenda thereto, so far as the same may be applicable, copies of which are available on the County's website at [www.baltimorecountymd.gov/departments/public-works/standards](http://www.baltimorecountymd.gov/departments/public-works/standards). These General Conditions are in addition to the aforementioned Specifications. Should there be any conflict with the aforementioned manuals, the *General Conditions* take preference.

## II. DEFINITIONS

### Article 2 Definitions

- A. *Architect and/or Engineer* shall mean the registered Architect and/or Engineer commissioned by the County to prepare the plans and contract documents.
- B. *Engineer* in these General Conditions and in the Construction Specifications in some instances refers to authorized representatives of the Office of Budget and Finance, Property Management.
- C. *Subcontractor*, as employed herein, includes only those having a direct contract with the Contractor. It includes one who furnished material worked to a special design according to the Plans and Specifications for the "work." It excludes one who merely furnished material not so worked.
- D. *Written Notice* shall be deemed to have been duly served if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered to or sent by registered mail to the last business address known to him who gives the notice.
- E. *Repair* means to restore after injury, deterioration, or wear; to mend, to renovate, by such means as appropriate, and to supply such materials and labor as necessary to render the item to be repaired sound, solid, true, plumb, square, even, smooth, and fully serviceable. Upon completion of such repair it must be, unless otherwise stated, rendered to such condition as to present a first-class finished work, or in instances where the repaired item serves as a base for additional finish, the repaired work must be such as to permit a first-class finish, to be applied without extra cost to the County. When the word "repair" is used in connection with machinery or mechanical equipment, it shall mean, in addition to the above, rendering the equipment completely serviceable and efficient, ready for the normal use for which it was originally intended.

- F. Some parts of the "Construction Specifications," bound herewith are of the abbreviated or "streamlined" type and includes incomplete sentences. Omissions of words or phrases such as "the Contractor shall", "in conformity therewith", "shall be", "as noted on the drawings", "according to the plans", "a", "an", "the", and "all" are intentional. Omitted words or phrases shall be supplied by inference in the same manner as they are when a "note" occurs on the drawings. Words "shall be" or "shall" will be supplied by inference when colon (:) is used within sentences or phrases.

### **Article 3 Time Limits**

The proposal shall indicate whether the contract limit is based on Working Days or Calendar Days. If this is not indicated in the Proposal, then the time limits will be based on Calendar Days.

### **Article 4 Sunday, Night and Holiday Work**

If Sunday, night or holiday work is necessary due to an emergency or is permitted by the Engineer, the Contractor shall secure and pay for any and all permits required in connection with this work.

## **III. CONTRACT DOCUMENTS AND SHOP DRAWINGS**

### **Article 5 Contract Documents**

#### A. Clarification

It is assumed that the Contractor has obtained clarification of all questions which may have arisen as to intent of the contract documents, or assumed, or actual conflict between two or more items in the Contract Documents as required in "Instructions to Bidders." Should the Contractor have failed to obtain such clarification as required by the "Instructions to Bidders," then the Engineer may direct the work to proceed by any method indicated, specified or required by the Contract Documents in the interest of maintaining the best construction practice. Such direction by the Engineer shall not constitute a claim for extra by the Contractor.

#### B. Jargon

Work described in words that have a well-known technical or trade meaning shall be held to refer to such recognized standard use.

#### C. Drawings

The Contractor shall do no work without proper drawings and instructions. Drawings are, in general, drawn to scale; however, symbols are used to indicate materials and structural and mechanical requirements. When symbols are used, the drawings are, of necessity, diagrammatic, as it is not possible to indicate all connections, fittings, fastenings, etc., which are included as a part of the work. Diagrammatic indication of mechanical piping, ducts, and conduit within the buildings is subject to adjustment in order to obtain proper grading, passage over, under or past obstructions, to avoid exposure in finished rooms and unsightly and obstructing conditions. The Contractor shall coordinate these adjustments.

1. Copies no longer Furnished

The County will no longer furnish the Contractor any copies of the Drawings and Specifications. Additional copies may be obtained by the Contractor downloading drawings and specifications from the Baltimore County Solicitation Web Page.

2. Copies of the Work

The Contractor shall keep in the office on the job a complete set of all drawings, specifications, shop drawings, schedules, etc., in good order and available to the Engineer and representatives of the County.

3. Ownership

All documents as furnished by the County remain the property of the County. They must not be used on other work but shall be returned to the County upon completion of the work.

D. Large Scale Detail Drawings

The Architect shall furnish, when necessary, additional instructions in the form of large scale developments of the drawings used for bidding, or to amplify Construction Specifications for the proper execution of the work. These shall be true developments of the bidding documents and reasonably inferable there from. The work shall be executed in conformity herewith. [See Article 6, Paragraph A.3.(c)]

E. Dimensions

The Contractor shall carefully check all dimensions prior to execution of the particular work affected. Whenever inaccuracies or discrepancies are found, the Contractor shall consult the Engineer prior to any construction or demolition. Should any dimensions be missing, the Engineer will be consulted and supply them prior to execution of the work. Dimensions for items to be fitted into constructed conditions at the job will be taken at the job and will be the responsibility of the Contractor. The obvious intent of the documents or obvious requirements dictated by conditions existing or being constructed supersedes dimensions or notes which may be in conflict herewith.

Whenever a stock size manufactured item or piece of equipment is specified by its nominal size, it is the responsibility of the Contractor to determine the actual space requirements for setting or entrance to the setting space. No extra will be allowed by reason of work requiring adjustment in order to accommodate the particular item of equipment.

Whenever new work, building, addition or portions thereof are not accurately located by plan dimensions, the Engineer will supply exact position prior to execution of the work.

## **Article 6 Shop Drawings**

### **A. Shop Drawings (those prepared by the Contractor or Vendor of Material)**

The Contractor shall submit for the Architect's approval, at such times as agreed (see Article 8), shop drawings (to include setting drawings and schedules) as required for the work of the various trades. These drawings shall be prepared in conformity with the best practice and standards for the trade concerned. Due regard shall be given to speed and economy of fabrication and erection.

#### **1. Items to be Detailed**

Shop details shall be supplied for all items which are specially fabricated for the work or when the assembly of several items is required of a working unit. Shop drawings are required for all reinforcing and structural steel, specially made or cut masonry units, miscellaneous metal work, specially made flashings or roofing and sheet metal work, specially made millwork, special rough hardware and all heating, ventilating, plumbing and electrical requiring special fabrication or detailed connections, including ducts.

#### **2. Submissions**

Shop drawings, brochures and catalog cut submissions shall consist of sufficient copies to provide for the retention by the Architect and County of five (5) copies total plus such additional copies as the Contractor may require. Drawings shall not exceed 24 in. x 36 in. in size.

#### **3. Examination and Approval**

The Contractor shall review all shop drawings, brochures and catalog cuts provided by the subcontractors and vendors prior to submitting them to the Architect. The Architect shall examine shop drawings with reasonable promptness, noting desired corrections, or granting approval.

##### **a. Field Dimensions and Conditions**

The Architect is not responsible for the checking of dimensions or existing conditions in the field. This is the sole responsibility of the Contractor.

##### **b. Resubmission**

When the Architect's notations or corrections are extensive, then the Contractor shall resubmit the drawings with changes made on the drawings.

c. Contractor's Responsibility

Unless the Contractor has in writing, notified the Architect to the contrary, at the time of submission, it will be assumed that the drawings are in conformity with the Contract Documents and do not involve any change in the Contract price or any change which will alter the space within the structure or alter the manner of operation from that contemplated in the Contract Documents.

d. Architect's Notations

Should the Contractor consider any change or notation received in compliance with paragraph (c) above as increasing the cost of the work from that contemplated in the Contract Documents, then the Contractor shall desist from further action relative to the item he/she questions and shall notify the Engineer, in writing, within five (5) days of the additional cost involved. No work shall be executed until the entire matter is cleared or a Change Order issued, or the Contractor is ordered by the Engineer to proceed under the provisions of the County's Standard Specifications. Failure of the Contractor to serve written notice, as above required, shall constitute a waiver of any claim in relation thereto.

(1) Similarly, should the Architect's notation or change involve less work than is covered by the Contract Documents, the Contractor shall allow the County the credit resulting from the change.

(2) Should the Contractor consider that any notation or change made by the Architect under provisions of this paragraph, paragraph (c), above, as involving a complete change in the subcontractor's relation or the substitution of a material different from that on which the Contract was based, then the Contractor shall act as herein stated or as in paragraph (c) above.

4. Project Completion

At the completion of the project, the Contractor shall submit a list of shop drawings for the entire project. This list shall contain the following information: title, description, specialty (Architectural, Structural, Mechanical, etc.), decision (no exceptions taken, approved, approved as noted, etc.).

**Article 7 Separate Contracts**

A. The County reserves the right to let other contracts in connection with paving and utilities adjoining this work. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work, and shall properly connect and coordinate his work with theirs.

- B. If any part of the Contractor's work depends for proper execution or results upon the work of any other contractor, the Contractor shall inspect and promptly report to the Engineer any defects in such work that render it unsuitable for such proper execution and results. Failure to inspect and report shall constitute an acceptance of the other contractor's work as fit and proper for the reception of the work, except as to the defects which may develop in the other contractor's work after the execution of the work.
- C. To ensure the proper execution of his/her subsequent work, the Contractor shall verify work already in place and shall at once report to the Engineer any discrepancy between the executed work and the drawings.

#### **IV. PAYMENTS**

##### **Article 8 Payments**

- A. Under this Contract payments will be made monthly on the valuation of work accomplished and on account of materials delivered on the site, for incorporation in the work, which are suitably stored.
- B. At the first of each month, the Contractor shall submit to the Engineer an application for payment on a form provided by the Engineer. Prior to application for first payment, the Contractor shall submit to the Engineer a schedule of values for the various parts of the work, including quantities, aggregating to the total sum of the Contract. This shall be so divided as to facilitate payment to subcontractors in accordance with Article 28, Paragraph C.1. The form of this submission shall be such as the Contractor or Engineer have agreed upon, and, if required, shall be supported by such evidence as to its correctness as the engineer may direct. This schedule, when approved by the Engineer, shall be used as a basis for approval of payment unless it is found to be in error. In applying for payment, the Contractor shall submit a statement based upon the schedule, itemized in such form and supported by such evidence as the Engineer may require, showing the Contractor's right to the payment claimed. If required, the Contractor shall show receipts and other vouchers for the payments for materials and labor including payments to subcontractors, as required by Article 28.
- C. Materials Purchased Under Allowance

The Engineer will provide schedules for all materials to be purchased from specified allowance.

##### **Article 9 Approval of Payments**

If the Contractor has made application, as above, the Engineer shall review and approve such payments as is decided to be properly due in accordance with the approved schedule. In approving such partial payments, there shall be retained no more than 10% of the total amount for the first 50% of the contract, after which only 5% of the total amount of the contract may be withheld unless the need is demonstrated for retaining more to protect the public interest.

## **Article 10 Payment Withheld**

- A. The Engineer may withhold, or on account of subsequently discovered evidence, nullify the whole or a part of any payment to such extent as may be necessary to protect the County from loss on account of:
1. Defective work not remedied.
  2. Claims filed, or reasonable evidence indicating probable filing of claims, by parties other than the Contractor.
  3. Failure of the Contractor to make payments properly to subcontractors or for material or labor.
  4. A reasonable doubt that the Contract can be completed for the balance then unpaid.
  5. Damage to another Contractor.
  6. Failure of the Contractor to submit data required within the time limits stated in the Contract Documents.

Upon removal of the above, payment shall be made for the amounts withheld.

## **Article 11 Changes in Work**

- A. The County, without invalidating the Contract, may order changes in the work by altering, adding to or deduction from the work, the Contract sum being adjusted accordingly. Such change shall be executed under these *General Conditions*. Extension of time made necessary thereby shall be adjusted at the time of such Change Order.
- B. The Engineer shall have authority to make minor changes in the work not involving extra cost and not inconsistent with the purpose of the project. Otherwise, except in an emergency endangering life or property, no extra work or change shall be made unless a written order for the Office Budget and Finance, Property Management signed or countersigned by the Director has been received by the Contractor. No claim for addition to the Contract sum shall be valid unless so ordered.
- C. The value of any such extra work or change shall be determined in one or more of the following ways as determined by the Office of Budget and Finance, Property Management.
1. By Estimate and Acceptance of a Lump Sum
    - a. The prime Contractor shall furnish a breakdown of the estimated construction cost. The breakdown shall be of sufficient detail to describe the extra work and related costs for labor, material, overhead and profit.

b. Overhead and Profit

(1) Extra work by Subcontractor:

Subcontractor will be allowed 10% overhead and 10% profit added to the direct labor and material costs. The prime contractor will be allowed to increase the subcontractors total lump sum by 10% to cover his/her administration.

(2) Extra work by Prime Contractor:

The prime contractor will be allowed 10% overhead and 10% profit added to the labor and material costs.

c. The prime contractor will be allowed 1 % for the bond added to the labor and material costs.

d. The allowed overhead will include all supervision; no additional allowance will be made for it.

2. By Unit Prices Named in the Contract or Subsequently Agreed Upon

Such unit prices are to include all supervision, overhead, taxes, insurance and profit.

3. By Cost and a Fixed Fee

Added to the cost is a fixed fee portion which is to include supervision, overhead, insurance and profit.

4. By Force Account (Labor and Material Cost plus)

In accordance with the *Baltimore County Specifications for Construction and Materials* Section GP 9.02, the Contractor is allowed to add 65% mark-up.

D. Should none of the methods stated in Paragraph C. 1, 2, or 3 be determined, the Contractor shall, providing he/she receives an order as defined in Paragraph B, above, proceed with the work on the basis of Paragraph C. 4. Force Account.

The Contractor and Engineer shall keep accurate costs, in such form as the Engineer may direct, for presentation, together with vouchers, to the Office of Budget and Finance Property Management for determination of the value of the work included in each Change Order. Pending determination of the final value, the Engineer may include payments for materials and labor, as stated in Article 8, in monthly vouchers.

## **Article 12 Claims for Extra Cost**

No claim for extra will be granted which includes cost of delays or work stoppage due to strikes, lockouts, fire, avoidable casualties or damage or delay in transportation for which the County or its agents are not responsible. (See also Article 14.)

## **Article 13 Deductions for Uncorrected Work**

If the Engineer and County deem it expedient to correct work injured or done not in accordance with the Contract, an equitable deduction from the Contract price shall be made therefore.

## **Article 14 Delays and Extension of Time**

If no schedule or agreement stating the dates upon which drawings shall be furnished is made (see Article 8), then no claim for delay shall be allowed on account of failure to furnish drawings until two (2) weeks after demand for such drawings, and then not unless such claim is reasonable.

## **Article 15 Correction of Work After Final Payment**

Neither the final certificate nor payment nor any provision in the Contract Documents shall relieve the Contractor of responsibility for faulty materials and workmanship. Unless otherwise specified, the Contractor shall remedy any defects and pay for any damage to other work resulting there from that appears within the guarantee period. The County shall give notice of observed defects with reasonable promptness. All questions arising under this Article shall be decided by the Director of Budget and Finance, Property Management.

## **Article 16 (Deleted)**

## **Article 17 Assignment**

The Contractor shall not assign the Contract. It shall not be sublet as a whole or sublet by trades or other portions in an amount of more than 75% of the monetary value of the Contract. The remaining 25% shall be executed by the Contractor with labor and materials directly purchased and paid for by the Contractor. Costs for insurance, over-head, supervisions, etc., may not be claimed as a portion of the 25% mentioned above. The execution of work by a subsidiary of the Contractor is not considered direct employment. The Contractor shall not assign any monies due or to become due to him/her hereunder, without the previous written consent of the County.

## **Article 18 Maryland State Sales Tax**

- A. Contractors who are performing work for the State of Maryland or any of its political subdivisions are required to pay tax on materials and supplies which will be incorporated into the work.

- B. The Contractor must pay the tax on all equipment which is purchased, Even though it may be used on a job for the State of any of its political subdivisions.

**V. MATERIALS**

**Article 19 Materials**

Materials include all manufactured products and processed and unprocessed natural substances required for completion of the Contract. The Contractor in accepting the Contract is assumed to be thoroughly familiar with the materials required and their limitations as to use and requirements for connections, setting, maintenance and operation.

Whenever an article, material or equipment is specified and a fastening, furring, connection (including utility connections), bed or accessory is normally considered essential to its installation in good quality construction, such shall be included as if fully specified. Nothing in the Construction Specifications shall be interpreted as authorizing any work in any manner contrary to applicable law, codes or regulations (See Article 31).

**A. Approval**

All materials are subject to the Architect's or Engineer's approval as to conformity with the specifications, quality, design, color, etc. No work for which approval is necessary shall be contracted for, or used, until written approval is given by the Architect or Engineer. Approval of a subcontractor, as such, does not constitute approval of a material which is other than that included in the Construction Specifications.

**B. New Materials**

Unless otherwise specified, all materials shall be new.

**C. Quality**

Unless otherwise specified, all material shall be of the best quality of the respective kinds.

**D. Samples**

The Contractor shall furnish for approval all samples as directed. The work shall be the same as the approved samples.

**E. Painting and Color**

The Architect and Contractor shall jointly prepare the paint and color schedules. The Architect shall direct the exact color, texture and finish.

#### F. Proof of Quality

The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of materials either before or after installation. The Contractor shall pay for any tests as may be deemed necessary in relation to "Substitutions" (Paragraph I. below).

#### G. Contractor's Option

When several products or manufacturers are named in the Construction Specifications for the same purpose or use, then the Contractor shall select any of those so named. However, all of the units of a thing required for a project must be the same in material and manufacture.

#### H. "Or Equal", "Equal", "Approved Equal"

The above terms are used as synonyms throughout the Construction Specifications. They are implied in reference to all named manufacturers. Only materials that, in the opinion of the Engineer, are fully equal in all details of construction, methods of assembly, finish and design quality will be considered. (See A, C, E, above, and I. below.)

#### I. Substitutions

Should the Contractor desire to substitute another material for one or more specified by name, the Contractor shall apply, in writing, for such permission and state the credit or extra involved by the use of such material. The Engineer will not consider the substitution of any material different in type or construction methods unless such substitution effects a benefit to the County. (See A. and D. above.)

The Contractor shall not submit for approval, materials other than those specified without a written statement why such a Substitution is proposed. Approval of a "substitute" material by the Architect or Engineer when the Contractor has not designated such material is a "substitute," shall not be binding on the County nor release the Contractor from any obligations of the Contract, unless the Architect or Engineer approves such "substitutions" in writing.

#### J. Standard Specifications

Whenever references are made in the Contract Documents to the *Baltimore County Standard Specifications for Construction and Materials* and *Standard Details for Construction*, it shall be understood that the latest standards and/or requirements are intended and shall apply. When no specification is cited and the quality, processing, composition or method of installation of a thing is only generally referred to then:

1. For things not otherwise specified below, the latest edition of the Applicable American Society for Testing Materials Specifications shall apply.

2. For things covered by the applicable portions, the National Bureau of Fire Underwriters Code shall apply.
3. For things generally considered as plumbing and those things requiring plumbing connections, the applicable portions of the latest edition of the American Society of Mechanical Engineers Code and the Baltimore County Plumbing Code shall apply.
4. For things generally considered as heating and ventilating work and not covered by A.S.M.E. Code, the applicable portions of the latest edition of the Heating and Ventilating Guide, published by the American Society of Heating and Ventilating Engineers, and the Baltimore County Building Code shall apply.

K. Storage

The contractor shall confine apparatus and storage of materials to the "off-road" area delineated as the "Limit of Contract." The Contractor shall not load or permit any part of the structure to be loaded with a weight that will endanger the safety of the structure or any part thereof.

**VI. QUALIFICATION, EMPLOYEES, WORKMANSHIP, SUBCONTRACTORS AND ADVERTISING**

**Article 20 Qualification of Bidders**

Bidders are required to be prequalified 10 days prior to bid opening, satisfactorily evidencing that they have the ability, equipment, organization and financial resources sufficient to enable completion of the work satisfactorily within the time specified in the Proposal.

**Article 21 Employees and Workmanship**

A. Employees

1. Qualification

Only personnel thoroughly trained and skilled in the task assigned them may be employed on any portion of the work, or they shall be removed.

2. Licensed

When County, State or Federal laws require that certain personnel (electricians, plumbers, etc.) be licensed, then all such personnel employed on the work shall be so licensed.

B. Quality of Labor

The Contractor shall employ on the work, at all times, sufficient personnel to complete the work within the time stated in the Proposal.

### C. Work Areas

The Contractor shall confine the operations of his/her employees to the limits as provided by law, ordinance, permits or directions of the Office of Budget and Finance Property Management. Generally, the "off-road" area will be the same as the "limit of Contract" line.

### D. Methods and Quality

1. All workmanship shall be of good quality. Whenever the method of the work or manner of procedure is not specifically stated or shown in the Contract Documents, then it is intended that the best standard practice shall be adhered to. Recommendations of the manufacturers of approved materials shall be considered as a part of Construction Specifications and all materials shall be applied, installed, connected, erected, used, cleaned and conditioned as so called for thereby. This, however, does not remove any requirement in Construction Specifications to add to the manufacturer's recommendations.
2. All materials shall be accurately assembled, set, etc., and when so required in good construction, shall be true to line, even, square, plumb, level and regularly spaced, coursed, etc. Under no circumstances, either in new or old work, shall any material be applied over another which has not been thoroughly cleaned, sanded or otherwise treated so as not to impair the finish, adhesion, or efficiency of the next applied item.
3. All methods, procedures and results are subject to the Engineer's approval as to finished result to be obtained. However, this is not to be interpreted as placing upon the Engineer any responsibility for the "work" management which is solely the responsibility of the Contractor.

### E. Joining of Work

1. The Contractor shall so schedule the work as to ensure efficient and uninterrupted progress and to hold to an absolute minimum the cutting and patching of new work. All cutting, patching and digging necessary to the execution of the work is included.
2. The Contractor shall so schedule (to include subcontracts) the construction performed by each group or trade that each installation or portion of the construction shall member with and join with all other work as required for a complete installation, all according to accepted good construction practice.

### F. Superintendent

The Contractor shall keep on the work, at all times during its progress, a competent superintendent and all necessary assistants, all approved by the

Office of Budget and Finance Property Management. Prior to commencement of the work, the Contractor shall submit in writing to the Office of Budget and Finance Property Management the name and qualifications of the person to be employed as Superintendent for the execution of the Contract. A written approval or rejection will be given following review of the data. Persons who have previously proved unsatisfactory on work executed for the County, or who are without proper qualifications, will not be approved. Should the Superintendent be complained of by the Office of Budget and Finance Property Management for cause, he/she shall be removed from the work. Should it be necessary to change the Superintendent, the above procedure shall be repeated. The Superintendent will represent the Contractor. All directions given to the Superintendent shall be as binding as if given to the Contractor. Important directions shall be confirmed on written request in each case.

#### G. Discipline

The Contractor shall at all times enforce strict discipline and good order among his/her employees and shall not employ or permit to remain on the work any unfit person. The Contractor shall enforce all instructions relative to use of water, heat, power, no smoking, and control any use of fires, as required by law and for the Office of Budget and Finance Property Management. Employees must not be allowed to loiter on the premises before or after job working hours.

#### **Article 22 Employment Lists**

The Contractor may contact MARYLAND STATE EMPLOYMENT SERVICE, Towson, MD, 21204, if so desired, for additional labor regarding this project.

#### **Article 23 Contractor's Supervision** (Also see Article 21, Paragraph F.)

The Contractor shall constantly maintain efficient supervision of the work, using his/her best skills and coordinating ability. The Contractor shall carefully study and compare all drawings, specifications, and other instructions and check them against conditions existing or being constructed on the project. The Contractor shall report to the Engineer any error inconsistency or omission which may be discovered. (See also Article 5, Paragraph E, and Instructions to Bidders.) The Contractor shall not be held responsible for the existence or discovery of such errors or conflicts and neither shall the adjustment of such errors or conflicts be grounds for claim for extra on the art of the Contractor unless such adjustment involves work not obviously contemplated by the Contract Documents or necessary to progress of the work. The Contractor shall be responsible for the coordination of the work of all subcontractors.

#### **Article 24 The County's Right to do Work**

If the Contractor should neglect to prosecute the work properly or fail to perform any provision of this Contract, the County after three days' written notice to the Contractor may, without prejudice to any other remedy, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor.

## **Article 25 County's Right to Terminate Contract**

### **A. Terminate Contract**

The Office of Budget and Finance, Property Management, upon proof that sufficient cause exists to satisfy such action, may without prejudice to any other right or remedy, and after giving the Contractor seven (7) days' written notice, terminate the employment of the Contractor and take possession of the premises and of all materials, tools, and appliances thereon and finish the work by whatever method may be deemed expedient, if any of the following conditions exists:

1. If the contractor should
  - a. Be adjudged a bankrupt or make a general assignment for the benefit of creditors,
  - b. Has a receiver appointed on account of insolvency.
  - c. Fails to or repeatedly and persistently refuses to supply properly skilled workers or proper materials, except in cases for which extension of time is provided,
  - d. Fails to make payment to subcontractors, or for materials and labor,
  - e. Persistently disregards laws, ordinances or the instructions of the Engineer, or
  - f. Is otherwise guilty of a substantial violation of any provision of the Contract.
2. Payment Status

In cases such as identified above, the Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the Contract price shall exceed the expenses of finishing the work, including compensation for additional managerial and administrative services, such excess shall be paid to the Contractor. If such expense shall exceed such unpaid balance, the contractor shall pay the difference to the County. The expense incurred by the County as herein provided, and the damage incurred through the Contractor's default, shall be itemized by the Engineer and a certified copy supplied to the Contractor.

## **Article 26 Sanitary Conveniences**

- A. The Contractor shall arrange for the erection and Maintenance of temporary toilets equipped with running water and drain connection for use of employees. These conveniences shall be erected and kept clean and in good condition, as required by law, until ordered removed by the Engineer.
- B. In lieu of A. above, the Contractor may install a portable approved chemical toilet at an approved location.
- C. The permanent plumbing fixtures to be constructed under this Contract shall not be used during construction, under any circumstances.

## **Article 27 Subcontracts Deleted**

## **Article 28 Relation of Contractor and Subcontractor**

- A. **The Contractor agrees** to bind every subcontractor and every subcontractor agrees to be bound by the terms of the Agreement, *Baltimore County's Standard Specifications for Construction and Materials* and *Standard Details for Construction the General Conditions*, the Drawings and Construction Specifications, as far as applicable, to his/her work, including the following provisions of this Article, unless specifically noted to the contrary in the subcontract approved in writing as adequate by the Office of Budget and Finance, Property Management.
- B. **The Subcontractor agrees** to be bound to the Contractor by the terms of the Agreement, *Baltimore County's Standard Specifications for Construction and Materials* and *Standard Details for Construction, General Conditions*, Special Provisions, Construction Specifications, and to assume towards him/her all obligations and responsibilities that he/she, by those documents, assumes towards the County.
  - 1. To submit to the Contractor applications for payment in such reasonable times as to enable the Contractor to apply for payment under Article 8 of these *General Conditions*.
  - 2. To make all claims for extras, for extensions of time and for damages for delays or otherwise, to the Contractor in the manner provided in *Baltimore County's Standard Specifications for Construction and Materials* or those *General Conditions* for like claims by the Contractor upon the County, except that the time for making claims for extra cost is one (1) week.

C. **The Contractor agrees** to be bound to the Subcontractor by all the obligations the County assumes to the Contractor under Agreement, *Baltimore County's Standard Specifications for Construction and Materials, General Conditions*, Drawings and Construction Specifications, and by all the provisions thereof affording remedies and redress to the Contractor from the County.

1. To pay the Subcontractors:
  - a. Upon receipt of payment, if issued under the schedule of values described in *Baltimore County's Standard Specifications for Construction and Materials, G.P.- 9.03* or Article 8 of these *General Conditions*, the amount allowed to the Contractor on account of the Subcontractor's work, to the extent of the Subcontractor's interest herein.
  - b. Upon the receipt of payment, if issued otherwise than as in Paragraph C.1., above, so that at all times the total payments shall be as large in proportion to the value of the work done by him as the total amount certified to the Contractor is to the value of the work done by him/her.
  - c. To such extent as may be provided by the Contract Documents or the subcontract, if either of these provides for earlier or larger payments than the above.
  - d. On demand for his/her work or materials as far as executed and fixed in place, less the retained percentage, at the time the payment is requested, even though the Engineer fails to approve it for any cause not the fault of the Subcontractor.
  - e. A just share of any fire insurance money received by him/her, the Contractor, under Article 35 of these *General Conditions*.
2. To make no demand for liquidated damages or penalty for delay in any sum in excess of such amount as may be specified in the subcontract.
3. That no claim for services rendered or materials furnished by the Contractor to the Subcontractor shall be valid unless written notice thereof is given by the Contractor to the Subcontractor during the first ten (10) days of the calendar month following that in which the claim was originated.
4. To give the Subcontractor an opportunity to be present and to submit evidence in any manner involving his/her rights.

5. The Contractor and the Subcontractor agree that nothing in this Article shall create any obligation on the part of the County to pay to or to see to the payment of any sums to any Subcontractor.

### **Article 29 Interlocking Contracts**

The attention of the Contractor and all Subcontractors is specifically called to the necessity of reading the Specifications covering items of the work which connect with or are dependent upon the work specified under each heading, and each Contractor executing the work called for there under shall be responsible for arranging for proper provision for connecting and coordinating his/her work with such other items.

### **Article 30 Advertising Signs**

- A. The Contractor will furnish, erect and maintain a project sign for the duration of the project. The sign shall be placed on the site where and as directed by the Engineer. The sign shall be fastened to three posts spaced 4' apart. The posts shall be 4" x4", seven feet above ground and three feet below ground.
- B. The project sign is shown on page GC-27 in this book.

## **VII. LAWS, PERMITS, LICENSES, INSURANCE, AND BONDS**

### **Article 31 Laws, Permits and Regulations**

- A. Permit and Service Connections:
  1. **BUILDING PERMIT** - The County will obtain the building permit at no cost to the Contractor.
  2. **PERMANENT WATER SERVICE** - The County will apply for the water service and pay all related charges; i.e., water meter, water systems connection charge, water distribution charge and sewer systems connection charge. Total installation of the permanent water service is part of this Contract. Water service shall be installed by a County Prequalified Utility Contractor.
  3. **PLUMBING PERMIT** - The Contractor shall apply for the Permit; however, the County will pay all related charges and fees.
  4. **PERMANENT ELECTRIC SERVICE** - The Contractor shall apply for and pay for the electrical permit. The County shall obtain BGE permanent gas and electric service to the site at no cost to the Contractor.

The Contractor shall coordinate the installation of permanent gas and electric service with Baltimore Gas & Electric

Company. Both the gas and electric services shall be activated at the same time under one account number showing Baltimore County as owner. The Contractor shall be responsible for payment of consumption charges for the use of gas and electric energy obtained through the permanent service until the building is accepted by the County or until agreed upon by the County in direct coordination with the Building Services Division of Baltimore County. Charges from BGE for removal of existing electric service will be paid by the County.

5. **PERMANENT TELEPHONE SERVICE** - The County shall pay for the telephone service and systems to and in the building. The Contractor is responsible for supplying and installing all conduit, cables and junction boxes as shown on the drawings or called out in the Specifications.
  6. **CABLE** - The County shall pay for any cable television service into the building. The contractor is responsible for supplying and installing the remaining work as shown on the drawings and called out in the Specifications.
  7. **TEMPORARY SERVICES** -All temporary services, such as water, electric, telephone, etc., shall be the Contractor's entire responsibility. (Also see Article 46.)
  8. **MISCELLANEOUS PERMITS** - The Contractor shall procure any and all necessary permits not previously mentioned and pay any and all related charges and fees required and incidental to the due and lawful prosecution of the work.
- B. The Contractor shall give all notices and comply with all State and Federal laws, ordinances, rules and regulations bearing on the conduct of the work as drawn and specified. If the Contractor observes that the Drawing and Contract Specifications are at variance therewith, he/she shall promptly notify the Engineer, in writing, and any necessary changes shall be adjusted as provided in the Contract for changes in the work. If the Contractor performs any work knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to the Engineer, he/she shall bear all costs arising there from.

### **Article 32 Compensation, Liability, and Property Damage Insurance**

(See Insurance Provision in Part VI of this Contract.)

### **Article 33 Builder's Risk Insurance**

- A. The Contractor shall, at his/her own cost, insure the work and keep it insured at all times during the period of construction, and until final acceptance of it by the County, against loss or damage covered by

an "All Risk" Builders Risk type of policy. The amount of insurance shall be the 100% estimated replacement cost of the work.

- B. The policies shall be made payable to the County and the Contractor, as their interest may appear, and the policies shall be left in the possession of the Engineer, prior to the start of construction.

#### **Article 34 Guaranty Bonds**

- A. Prior to signing of the Contract, the Contractor will be required to furnish bond covering the faithful performance of the Contract and the payment of all obligations arising there under, in such form as the County may prescribe with such sureties as the County may approve. The premiums shall be paid by the Contractor.
- B. The Bond to be in the amount of the total Contract price.
- C. At the direction of the Office of Budget and Finance, Property Management, the Contractor may be required to increase the above bond. Such addition will be paid for by the County in the amount of actual cost to the Contractor.

#### **Article 35 Damages**

- A. If either party to this Contract should suffer damages in any manner because of the wrongful act or neglect of the other party or of anyone employed by him/her, then reimbursement shall be made by the other party for such damage.
- B. Claims under this clause shall be made in writing to the party liable within a reasonable time at the first observance of such damage and not later than the time of final payment, except as expressly stipulated otherwise in the case of faulty work or materials, and shall be adjusted by agreement.
- C. Should the Contractor cause damage to any separate contractor on the work, the Contractor agrees, upon due notice, to settle with such contractor by agreement or refer the matter to the Office of Budget and Finance, Property Management, who will render a decision after hearing all evidence in the matter. The Contractor shall pay or satisfy such decision.

### **VIII. INSPECTION AND SURVEYS**

#### **Article 36 Inspection**

- A. If the Construction Specifications, the Engineer's instructions, laws, ordinances, or any public authority require any work to be specially tested or approved, the Contractor shall give the Engineer timely notice of its readiness for inspection, and if the inspection is by another authority, the date fixed for such inspection. Inspections by

the Engineer shall be made promptly, and where practicable, at the source of supply. Any work covered without approval of the Engineer must, if required, be uncovered for examination at the Contractor's expense.

- B. If initial tests and/or inspections show substandard products, materials, workmanship, etc. and the Contractor elects, with the Engineer's approval, to perform additional tests and/or inspections to prove the acceptability of the substandard products, materials, workmanship etc., he/she shall perform same at his/her expense.

### **Article 37 Surveys**

- A. The General Contractor shall, at his/her own expense, employ a registered surveyor to provide Elevation Bench Mark, and locate corners of the building and the limits of contract.
- B. The General Contractor shall, at his/her own expense, employ a competent field engineer, to give the lines and levels for the building, sidewalks and footings, etc. The Contractor will be responsible for all lines and levels and will guarantee all lines and levels as are shown on drawings.

### **Article 38 Unauthorized Work**

Work done without lines and grades being established, work done beyond the lines and grades shown on the Plans or as established, except as herein provided, or any extra work done without written authority will be considered as unauthorized and at the expense of the Contractor and will not be measured by the Engineer, or paid for by the County. Work so done may be ordered by the Engineer to be removed and replaced at the Contractor's expense.

## **IX. CONSTRUCTION**

### **Article 39 Construction Schedule**

The Contractor shall hold bi-weekly "progress meetings" at the site, at a time suitable to the Engineer, at which the progress of the work shall be reported upon in detail with reference to schedules. Each interested subcontractor shall be required to have present a competent representative to report the condition of his/her branch of the work and to receive instructions. Minutes of these "progress meetings" shall be taken by the Contractor who shall type them for distribution to members of the conference, the Office of Budget and Finance, Property Management, and other interested persons. These minutes shall be received by all parties prior to the next scheduled "progress meeting."

#### **Article 40 Protection of Work and Property**

- A. All trees along the way of access shall be boxed, also all trees surrounding the building which are liable to injury by the moving, storing and working up of materials. No permanent tree shall be used for attachment of any ropes or derricks. Every public way, catch basin, conduit, tree, fence or things injured in carrying out this Contract, shall be replaced and put in good condition, unless the same shall be permanently done away with by order of the Engineer.
- B. The Contractor shall erect and properly maintain at all times as required by the conditions and progress of the work, all necessary safeguards for the protection of workers and the public and shall post danger signs warning against the hazards created by such features of construction as protruding nails, hod hoists, well holes, elevator hatchways, scaffolding, window openings, stairways and falling material.
- C. In an emergency affecting the safety of life, or of the work, or of the adjoining property, the contractor, without special instruction or authorization is hereby permitted to act, at his/her discretion, to prevent such threatened loss or injury, and he/she shall so act, without appeal, if so instructed or authorized. Any compensation claimed by the Contractor on account of emergency work shall be determined as outlined in Article 11.

#### **Article 41 Shoring, Bracing and Sheeting**

- A. The Contractor shall do all necessary shoring, bracing and sheeting required, or as directed by the Engineer, to carry out the work, install the foundations and other building construction, to protect the street, sidewalks and all adjoining buildings and property. He/she shall thoroughly brace and protect all earth banks sides of pits, trenches, and other excavations to prevent danger to persons or structures, and to prevent injurious cavings or erosion of any sort. Shoring and sheeting shall be removed after, or as, the walls are built and properly set.
- B. Full responsibility for both the design (by an Engineer licensed in Maryland) and the execution of all shoring, bracing, and sheeting work shall rest upon the contractor. While the Engineer shall be fully advised of all details for such work before the work itself is executed, this shall not in any way relieve the Contractor for full responsibility for all damage or expense arising from faulty installation of the said work of shoring, bracing, or sheeting.

#### **Article 42 Tests**

- A. Soils testing shall be performed by an independent testing firm arranged and paid for by the County.

- B. Materials testing shall be performed by an independent testing firm, paid for by the Contractor, which has previously been approved by the County and Architect/Engineer. Certified copies of all such test reports shall be submitted to the Engineer for approval.

#### **Article 43 Cleaning Up**

- A. The Contractor shall at all times keep the premises free from accumulations of waste material or rubbish caused by his/her employees or work, and at the completion of the work, shall remove all his/her rubbish from and about the project site, and all his/her tools, scaffolding and surplus material.

In case of dispute, the County may remove the rubbish and charge the cost to the several contractors as the Engineer shall determine to be just.

- B. All debris shall be kept sprinkled to reduce dust and shall be promptly removed from the building, and no combustible materials shall be stored against perimeter walls.
- C. The Contractor shall clean entirely the building as it is completed, wash all windows, scrub all floors at least once, and leave all floors free from spots and blemishes. The interior of the building and the project area shall be left "broom clean," or its equivalent.

#### **Article 44 As-Built Drawings**

The Contractor shall, as the project progresses, neatly record on a set of white prints any changes and all revisions to the work wherever they shall differ from the Contract Drawings. Upon completion of the work, the Contractor shall turn over to the Architect this set of prints.

#### **Article 45 Drainage and Pumping**

The Contractor shall remove all water, including rain water, encountered during the entire progress of the work, using pumps, drains or other methods approved by the Engineer. Excavations and the project site shall be kept free from water until all backfilling is completed. The water shall be discharged to catch basins, or other drainage points as directed by the Engineer.

#### **Article 46 Temporary Water, Electric and Other Services**

- A. The Contractor shall arrange for and pay for the installation of temporary connection to the County's water mains, including all incidental fees and expenses for water supply during construction of the project, and shall pay for all water used. Wasting of County water will not be permitted.

- B. The Contractor shall arrange for and pay for temporary electric light and power service required during construction of the project, and shall pay for all electricity used. Gasoline or other torches for lighting will not be permitted.
- C. The Contractor shall provide and pay for any other temporary services which may be required for the satisfactory completion of the project.
- D. The Contractor shall provide, at his/her own expense, all cold weather protection, temporary heat and fuel as necessary to carry on the work expeditiously during inclement weather, to protect work and materials against injury from dampness and cold, to dry out the building and provide suitable working conditions. Refer to other sections for temperatures required for work under the various trades

The methods of heating and type of fuel and equipment used shall be subject to approval by Engineer.

With special permission, in writing, permanent heating system may be used to dry out building and provide suitable working conditions in all or various parts thereof as soon as practicable. If used, Contractor shall be responsible for use of permanent heating system for purpose described and all costs of fuel, attendance, etc. in connection therewith shall be borne by him/her. Such use shall not relieve Contractor of his/her responsibility to turn over system to Owner in perfect condition on completion of project, including the removal of all dust of construction from air handling units, etc., the replacing of all filters, etc., nor shall it shorten stipulated guarantee period which will commence upon the date of final acceptance of the work.

#### **Article 47 Connecting to Existing Utilities**

The Contractor shall, at his/her own cost and expense and as part of this work under the Contract, furnish all labor, materials, tools, and appliances, and do all work required for making connections to existing storm drains, sanitary sewer, water, gas and electric service connections, as shown on drawings, and the cost of making such connections shall be included in his/her bid.

#### **Article 48 Existing Utilities Shown on Plans**

Water mains, gas mains, storm drains, sanitary sewers, and other utilities are shown on the Plans, in accordance with the best information available, for the information of the Contractor. The County assumes no responsibility for accuracy or completeness of the information shown. Existing mains and services shall be carefully protected and any damage to them caused by the work shall be immediately repaired to the satisfaction of the Engineer by the Contractor at his own expense, using materials of the quality and kinds damaged.

**X. MISCELLANEOUS ADDENDA**

**Article 49 Holidays**

The word "holidays" used in these Contract Documents shall be taken to mean the below listed holidays, which in Baltimore County, occur as shown below:

January 1	New Year's Day
3rd Monday in January	Martin Luther King's Birthday
3rd Monday in February	President's Day
4th Monday in May	Memorial Day
June 19	Juneteenth Independence
July 4	Independence Day
1st Monday in September	Labor Day
2nd Monday in October	Indigenous Peoples' Day
November 11	Veteran's Day
4th Thursday in November	Thanksgiving Day
December 25	Christmas
All Days of General Elections	

If any holiday occurs on Sunday, the following Monday shall be considered a holiday. If the holiday occurs on Saturday, the Friday immediately preceding shall be considered a holiday.

**Article 50 Buy American Steel Act**

The State of Maryland has approved House Bill No. 1659 to "Buy American Steel" for all Public Works projects in the State of Maryland, effective July 1, 1978. Compliance with Article 20.17 Metal Pipe (Page 100) and Article 20.18 Metal for Structures (Page 102) in the *S.H.A. Specifications for Materials, Highways, Bridges and Incidental Structures* dated March 1968 will satisfy this condition. Also see *Baltimore County's Standard Specifications for Construction and Materials* Section GP 7.28.

**Article 51 Guarantee**

- A. The Contractor guarantees all work against faulty or imperfect materials, against all imperfect or careless and/or unskilled workmanship, against all leaks and against all mechanical and electrical failure of equipment for a period of two (2) years from the date of acceptance of the project by the County. See other Sections of this Specification for other guarantees.
- B. The Contractor shall remove, replace or re-execute, without cost to the Owner, any work found to be imperfect during the guarantee period.

**Article 52 Offices and Telephones**

- A. The Contractor shall erect and maintain upon the project site, and where directed by the Engineer, suitable offices for his/her own use and that of the Engineer.

- B. A room of adequate size shall be provided and maintained in the Contractor's office to be used for "Progress Meetings," which frequently involve fifteen (15 or more persons). This space shall be so arranged that they can be held without interference with or from the other office or supervisory work. The room shall be 300 sq. ft. minimum and 10 ft. minimum width.

These offices shall be provided with adequate heating and lighting, all at the expense of the Contractor. In addition to the above requirements, air-conditioning will be required, the cost of which is to be included in the lump sum bid price. The system must be capable of maintaining a temperature of 80 degrees F dry bulb and approximately 50% relative humidity in the conditioned area when outside temperatures are 95 degrees F dry bulb and 78 degrees F wet bulb.

- C. The Engineer's office shall meet or exceed all requirements for a Type 1 office in accordance with *Baltimore County's Standard Specifications for Construction and Materials*, Section 103 Engineer's Office.

The Contractor shall provide telephone and FAX service in the Office of the Engineer. The Contractor shall pay all costs of installation and all charges for local and Baltimore City calls, but will not be expected to pay for long distance calls made from the Engineer's Office.

8' 0"

GREEN BORDER

2"

2"



FULL COLOR COUNTY SEAL

# BALTIMORE COUNTY OBF

Baltimore County Executive  
**Katherine A. Klausmeier**  
and the Baltimore County Council

## PROJECT NAME

Office of Budget and Finance  
Contract Number:  
www.baltimorecountymd.gov For  
Additional Information Call:  
410-887-3861

Contractor: \_\_\_\_\_

Engineer: Office of Budget and Finance

4' 0"

2"

2"

2"

4" X 4" POSTS

3/4" EXTERIOR PLYWOOD

GREEN LETTERS  
ON LUMINOUS WHITE BACKGROUND

NOTE: All costs of furnishing, erecting & maintaining the "Improvement Sign", including posts, shall be included in the "Lump Sum" bid for MOBILIZATION. Contractor to provide 2 sign (s).

EX. GRADE

3' 0"

3' 0"

42

GC-27

SECTION 001001 – SITE-CIVIL TABLE OF CONTENTS

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334600 - SUBDRAINAGE

END OF SECTION 001001

SECTION 015639 - TEMPORARY TREE AND PLANT PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes general protection and pruning of existing trees and plants that are affected by execution of the Work, whether temporary or permanent construction.
- B. Related Requirements:
  - 1. Section 311000 "Site Clearing" for erosion and sediment control requirements, marking existing utilities, removing existing trees, shrubs and vegetation.
  - 2. Section 312000 "Earth Moving" for excavation, backfilling, and compaction requirements in adjoining construction areas.
  - 3. Section 329113 "Soil Preparation" for Planting Mix requirements.

1.3 DEFINITIONS

- A. ANSI: American National Standards Institute.
- B. ASCA: American Society of Consulting Arborists.
- C. ASTM: American Society for Testing and Materials International.
- D. Arborist: A licensed or certified professional experienced in the cultivation, management, and horticultural practices necessary to promote the health and safety of trees, shrubs, and woody plants.
- E. Caliper (DBH): Diameter at breast height. Diameter of a trunk as measured by a diameter tape at a height fifty-four (54) inches above the ground line.
- F. DNR: Maryland Department of Natural Resources.
- G. ISA: International Society of Arboriculture.
- H. LOD: Limit of Disturbance.
- I. LOW: Limit of Work.

- J. Non-Specimen Tree: An existing tree having a diameter measured at 4.5 feet above the ground that is less than 30 inches in diameter at breast height.
- K. Plant Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction as indicated.
- L. Specimen Tree: An existing tree having a diameter measured at 4.5 feet above the ground that is 30 inches or greater, or trees having 75% or more of the diameter of the current State champion of that species as defined in the current edition of the State Forest Conservation Technical Manual, as amended to date, published by the Maryland Department of Natural Resources (MD-DNR). Specimen Trees also includes Champion Trees.
- M. Tree Service Firm: A professional tree service firm operating in the State of Maryland as a “Licensed Tree Expert” as noted in Maryland DNR’s current Forest Service “Tree Expert List”. The tree service firm shall employ a full-time Arborist licensed in the State of Maryland, and shall have at least 10-years’ of successful experience performing these services.
- N. Vegetation: Trees, shrubs, groundcovers, grass, and other woody and herbaceous plants.

#### 1.4 PRE-INSTALLATION MEETING

- A. Pre-installation Meeting: Conduct meeting at Project site.
  - 1. Review methods and procedures related to temporary tree and plant protection including, but not limited to, the following:
    - a. Tree-service firm's personnel and equipment required to make progress and avoid delays in the Work.
    - b. Arborist's responsibilities.
    - c. Quality-control program.
    - d. Coordination of site clearing operations and equipment movement adjacent to plant protection-zone locations.
    - e. Trenching by hand or with air-spade within Plant Protection Zones.
    - f. Field quality control.
    - g. Extent of branch pruning.
  - 2. Submit Meeting Notes to Landscape Architect and Owner’s Representative from Pre-Installation Meeting.

#### 1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings:
  - 1. Include plans, elevations, sections, and locations of protection-zone fencing, signage, and gates.
  - 2. Show relationship of equipment-movement routes and material storage locations in relation to plant protection-zones.

3. Detail fabrication and assembly of protection-zone fencing, gates, and signage.
  4. Indicate extent of trenching by hand or with air-spade within Plant Protection Zones.
- C. Samples: For each type of the following:
1. Shredded Hardwood Mulch: One (1) quart volume of shredded hardwood mulch, in sealed plastic bag labeled with composition of materials by percentage of weight and source of mulch.
  2. Protection Zone Signage: One (1) full-size sample of each required, showing size and text, ready for installation.
- D. Protection-Zone Fencing Mockups:
1. Install at least one (1) fully assembled mockup panel for each type of protection-zone fencing. Mockup panel may be incorporated into the Work if approved by the Landscape Architect or Owner's Representative.
- E. Tree Branch Pruning Schedule: Submit written schedule that details the scope and extent of pruning for trees to remain that interfere with or are affected by construction.
1. Species and size of tree.
  2. Location on site plan. Include unique identifier for each.
  3. Reason for pruning.
  4. Description of pruning to be performed.
  5. Description of maintenance following pruning.
- F. Written Certification from Arborist: Certifying that trees have been adequately protected throughout construction in accordance with referenced standards, and that trees were promptly and properly treated and repaired when damaged.
- G. Written Maintenance Recommendations: From Arborist, for care and protection of trees affected by construction during and after completion of the Work.

## 1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Arborist and Tree Service firm.
- B. Existing Conditions: Documentation of existing trees and plantings indicated to remain, which establishes preconstruction conditions that might be misconstrued as damage caused by construction activities.
1. Submit sufficiently detailed digital photographs or video recordings to document conditions of existing specimen trees and plant material to remain.
  2. Include diagrams with notations to indicate specific wounds and damage conditions of each tree or other plants to remain.
- C. Quality-control program from Arborist and Tree Service firm.

## 1.7 QUALITY ASSURANCE

- A. American National Standards Institute (ANSI): Referenced standards and publications.
- B. American Society for Testing and Materials International (ASTM): Referenced standards and publications.
- C. Arborist Qualifications by one or more of the following: Certified Arborist certified by ISA, Certified Arborist-Municipal Specialist certified by ISA, Licensed Arborist in the State of Maryland, or Registered Consulting Arborist designated by ASCA.
- D. Tree Service Firm Qualifications: An experienced tree service firm that has successfully completed temporary tree and plant protection work similar to that required for this Project and will assign an experienced, qualified Arborist to Project site during execution of the Work.
- E. Quality-Control Program: Prepare and submit a written program to demonstrate systematically the ability of personnel to properly follow procedures and handle materials and equipment during the Work without damaging trees and plantings.
  - 1. Include Arborist's and Tree Service firm's responsibilities.
  - 2. Include dimensioned diagrams for proposed placement of Plant Protection Zone fencing, gates and signage.
  - 3. Adequate instructions given to workers on the use and care of Plant Protection Zones, and enforcement of requirements for Plant Protection Zones.

## 1.8 FIELD CONDITIONS

- A. The following practices are prohibited within Plant Protection Zones:
  - 1. Storage of construction materials, debris, and excavated material.
  - 2. Moving or parking vehicles or equipment.
  - 3. Foot traffic.
  - 4. Erection of sheds or structures.
  - 5. Impoundment of water.
  - 6. Excavation and proposed disturbances, unless otherwise indicated or prior written permission is provided by the Arborist and Landscape Architect.
  - 7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
- B. Do not direct vehicle or equipment exhaust toward Plant Protection Zones.
- C. Prohibit heat sources, flames, ignition sources, and smoking within or near Plant Protection Zones and organic mulch.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Planting Mix for Adjusting Grades:
1. Satisfactory stockpiled on-site topsoil mixed with prepared Planting Mix (refer to Section 329113 “Soil Preparation” for Planting Mix requirements), having satisfactory moisture content and granular texture for installing around trees and plants.
  2. Planting Mix shall be free of stones, roots, plants, sod, clods, clay lumps, pockets of coarse sand, concrete slurry, concrete layers or chunks, cement, plaster, building debris, and all other extraneous materials harmful to plant growth.
- B. Shredded Hardwood Mulch: Free from deleterious materials and suitable as a top dressing for trees and shrubs, consisting of the following:
1. Type: Shredded hardwood bark and wood chips, aged.
  2. Size Range: Three (3) inches maximum length, one-half (1/2) inch minimum length, one (1) inch maximum diameter.
  3. Color: Natural, dark brown.
- C. Protection-Zone Fencing: Fencing shall be installed in temporary positions indicated and meeting the following requirements:
1. Plastic Mesh Protection-Zone Fencing: Plastic construction fencing constructed of high-density extruded and stretched polyethylene ‘Blaze Orange’ mesh fabric with 2-inch maximum opening in pattern, weighing a minimum of 0.4 lb./ft.
    - a. Fencing shall remain flexible from minus 60 to plus 200 deg F, inert to most chemicals and acids, minimum tensile yield strength of 2000 psi, with ultimate tensile strength of 2680 psi.
    - b. Plastic Bands or Galvanized-steel Wire Ties: To attach plastic mesh to posts.
    - c. Anchor Posts: Minimum 2-inch diameter galvanized steel ‘U’ channel or ‘T’ posts. Minimum length: 6 feet or as indicated.
    - d. Hardware: Provide hardware as required for mounting rail cross-braces to top of posts and hinges to mount gates on posts.
    - e. Top Rail Cross-Braces: #2, Ground-Contact, Pressure-treated 2”x 4” lumber; Lengths as required.
    - f. Fence Height: As indicated.
    - g. Wire ‘U’ Staples: Minimum 8” long or as indicated, to secure plastic mesh into the ground.
    - h. High Visibility Flagging: As indicated and noted.
    - i. Gates to allow access for maintenance activities within plant protection-zones: Pressure-treated wood, single or double leaf swing, sizes as indicated. Access gate fabric shall match the material and appearance of fencing fabric.
- D. Protection-Zone Signage: Shop-fabricated, rigid plastic or metal sheet with attachment holes pre-punched and reinforced; legibly printed with nonfading lettering in accordance with local regulations, and as follows:

1. Sign Size and Text Style: As indicated.
2. Lettering: 3-inch high black characters on white background.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Erosion and Sediment Control Devices and Measures: Examine the site to verify that temporary erosion and sediment control devices and measures are in place.
  1. Meet on-site with the Arborist and Grading/Sediment Control Inspector to resolve potential conflicts, and to make minor adjustment of devices and measures with the Inspector's approval in the field.
  2. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross Plant Protection Zones.
- B. Prepare written report from Arborist to Landscape Architect listing conditions detrimental to tree and plant protection. Provide written recommendations for proposed corrective action.

#### 3.2 PREPARATION

- A. Locate and clearly identify trees, shrubs and shrub beds, and all other designated vegetation to remain with sequential numbering and labeled as such on a copy of the applicable Existing Conditions & Demolition Plan. Submit the marked-up Drawing to the Landscape Architect and Architect for review and approval.
  1. For trees to remain, label and tie a 1-inch blue vinyl tape around each tree trunk at fifty-four (54) 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. Plant Protection Zones: Mulch areas inside Plant Protection Zones and other areas indicated. Do not exceed indicated thickness of mulch.
  1. Apply 4-inch uniform thickness of shredded hardwood mulch unless otherwise indicated. Do not place mulch within six (6) inches of tree trunks.

#### 3.3 PLANT PROTECTION-ZONES

- A. Plant Protection-Zone Fencing:
  1. Install protection-zone fencing along edges of Plant Protection Zones as indicated before materials or equipment are brought on the site and construction operations begin in a manner that will prevent people and animals from easily entering protected areas except by entrance gates.

2. 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.
  3. Plastic Mesh Protection-Zone Fencing: Install as indicated and noted on the Drawings.
  4. Access Gates: Install where indicated.
    - a. Adjust to operate smoothly, easily, and quietly; free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction throughout entire operational range.
    - b. Confirm that latches and locks engage accurately and securely without forcing or binding.
- B. Plant Protection-Zone Signage: Install protection-zone signage in visibly prominent locations in a manner approved by Landscape Architect.
1. Install one sign spaced approximately every twenty (20) feet on protection-zone fencing, but no fewer than four (4) signs with each facing a different direction.
- C. Maintain protection-zone free of weeds and trash, fencing and signage in good condition as acceptable to Landscape Architect. 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 Plant Protection Zone.
  2. Temporary access might be allowed, subject to preapproval in writing by Arborist, if recommended root buffer protection to avoid soil compaction is installed as directed by Arborist. Maintain root buffer as long as temporary access is allowed.

### 3.4 EXCAVATION

- A. General: Excavate at edge of Plant Protection Zones where indicated adjacent to Plant Protection Zones according to requirements in Section 312000 "Earth Moving".
- B. Trenching within Plant Protection Zones: With Arborist and Landscape Architect's advance written permission, where utility trenches are required within Plant Protection-Zones, excavate under or around tree roots by hand or with air spade, tunnel under the roots by drilling, auger boring, or pipe jacking.
1. Do not cut main lateral tree roots or taproots; cut only smaller roots that interfere with installation of utilities.
  2. With Arborist's approval, cut roots as required for root pruning. If excavating by hand, use narrow-tine spading forks to comb soil and expose roots.
- C. Redirect roots in backfill areas where possible.
1. If encountering large, main lateral roots, with Arborist's direction expose roots beyond excavation limits as required to bend and redirect them without breaking.
  2. If encountered immediately adjacent to location of new construction, and redirection is not practical, cut roots approximately three (3) inches back from new construction and as required for root pruning.

- D. Do not allow exposed roots to dry out before backfilling with Planting Mix.
  - 1. With Arborist’s approval, install temporary earth cover or pack using peat moss and wrap with burlap.
  - 2. Water as required to maintain in a satisfactory moist condition.
  - 3. Install temporary support and protect roots from damage until they are permanently relocated and covered with Planting Mix.

### 3.5 BRANCH PRUNING

- A. Prune branches that are affected by temporary and permanent construction. Prune branches as directed by Landscape Architect and Arborist.
  - 1. Prune to remove only injured, broken, dying, or dead branches and do not prune for shape unless directed by Landscape Architect.
  - 2. Do not remove or reduce living branches to compensate for root loss caused by damaging or cutting root system.
  - 3. Pruning Standards: Prune trees according to ANSI A300 (Part 1) as amended to date.
  - 4. Type of Pruning: Raising and thinning as directed by Landscape Architect and Arborist.
- B. Do not cut tree leaders.
- C. Cut branches with sharp pruning instruments; do not break or chop.
- D. Do not paint or apply sealants to wounds.
- E. Provide subsequent maintenance pruning during the Project Warranty period as recommended by Arborist.
- F. Remove all pruned branches and dispose of off-site.

### 3.6 REGRADING

- A. Lowering Grade beyond Plant Protection-Zones: Where proposed finish grades are indicated to be lower than existing grade beyond the Plant Protection-Zone, provide satisfactory slope and grade transition as directed by Landscape Architect. Maintain existing grades within the Plant Protection-Zone.
- B. Lowering Grade within a Plant Protection-Zone: Where proposed finish grade is indicated to be lower than existing grade around existing trees and vegetation, install Planting Mix and other measures indicated. Provide satisfactory slope and grade a transition away from existing trees and vegetation as directed by Landscape Architect and Arborist.
  - 1. Root Pruning: Prune tree roots exposed by lowering the grade.
  - 2. Do not cut main lateral roots or taproots; cut only smaller roots. Cut roots as directed for root pruning.
- C. Raising Grade within a Plant Protection-Zone: Where proposed finish grade is indicated to be higher than existing grade around existing trees and vegetation, install Planting Mix and other

measures as indicated. Provide satisfactory slope and grade a transition within and beyond the Plant Protection-Zone as directed by Arborist and Landscape Architect.

- D. Minor Fill within Plant Protection-Zones: Where existing grade is two (2) inches or less below proposed finish grade elevations, fill with Planting Mix as indicated. Place Planting Mix in a single layer, hand grade and lightly compact to designated proposed s finish grade elevations.

### 3.7 FIELD QUALITY CONTROL

- A. Inspections: Engage a qualified Arborist to direct plant-protection measures, root and crown pruning, and other necessary Work for trees, shrubs, and other vegetation to remain in a healthy condition.
1. Prepare and submit inspection reports to the Landscape Architect and Owner's Representative.

### 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, as directed by Arborist and Landscape Architect.
1. Submit details of proposed pruning and repairs for approval by Arborist and Landscape Architect.
  2. Perform repairs of damaged trunks, branches, and roots within twenty-four (24) hours according to Arborist's written instructions.
  3. Replace trees and other plants that cannot be repaired and restored to full-growth status, as directed by Landscape Architect.
- B. Existing Non-Specimen Trees: Remove and replace existing trees indicated to remain that are more than twenty-five (25) percent dead, or in an unhealthy condition, due to damage during construction operations that Landscape Architect determines are incapable of restoring to normal growth pattern.
1. Small Tree: Provide one (1) new tree of same size and species as those being replaced for each tree that measures four (4) inches or smaller in caliper size.
  2. Non-Specimen Large Tree: Provide three (3) new trees of 6-inch caliper size for each tree being replaced that measure more than six (6) inches in caliper size.
  3. Species: To be selected by Landscape Architect.
  4. Plant and maintain replacement trees as specified in Section 329300 "Plants."
- C. Existing Specimen Trees: Damage to an existing specimen tree will require assessment by the Arborist to determine the extent of damage and proposed measures in an attempt to repair and/or mitigate unrepairable damage to each individual specimen tree.
1. Prior to implementing proposed repairs and/or remedial measures, the Arborist shall submit a detailed description with associated cost estimate for each option for the proposed repairs and remedial measures to the Landscape Architect and Owner's Representative for review and approval.

2. The Contractor and Arborist shall implement the approved repairs and remedial measures at no additional cost to the Owner.

### 3.9 DISPOSAL OF SURPLUS SOIL, TRIMMINGS, MULCH AND WASTE MATERIALS

- A. Trimmings: Immediately dispose of branches and limbs removed as the result of crown and branch thinning and selective thinning.
- B. Excess Mulch: Rake mulched area within Plant Protection Zones, being careful not to injure roots. Rake to loosen and remove mulch that exceeds a 4-inch uniform thickness.
- C. Remove all excess excavated soil and temporary protection-zone fence at the completion of construction.
  1. Dispose of trees removed for replacement, branches and related trimmings, trash, and debris.
  2. Legally dispose of all materials off of the Owner's property.

END OF SECTION 015639

## SECTION 103014 – PRE-FABRICATED STRUCTURES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:

- 1. Furnishing and installing a Pre-Fabricated Pavilion.
- 2. Furnishing and installing a Pre-Fabricated Shed.

- B. Related Sections:

- 1. DIVISION 01 for General Requirements.
- 2. Section 312000 “Earth Moving” for excavation, backfilling, and compaction requirements.
- 3. Section 321313 “Concrete Paving” for cast-in-place concrete footing and slab-on-grade concrete construction for the pavilion and shed structures.

#### 1.3 PRE-INSTALLATION MEETING

- A. Pre-installation Meeting: Conduct meeting at Project site.

- 1. Prepare and submit Meeting Notes to all attendees including the Project Civil Engineer and Owner’s Representative.

- B. Unless written permission is pre-approved and issued prior to the Pre-installation Meeting by the Owner’s Representative, the following individuals are required to attend the Pre-installation Meeting unless directed otherwise by the Owner’s Representative:

- 1. General Contractor’s Superintendent.
- 2. Sub-contractor responsible for constructing the poured-in-place concrete slabs.
- 3. Sub-contractor’s responsible for installation of the pavilion and shed.
- 4. Testing Agency Representative.
- 5. Owner’s Representative.

- C. Review methods and procedures related to the installation of the Pavilion and Shed, including but not limited to, the following:

- 1. Review the approved shed shop drawings for confirmation of the standard, optional and custom features requested by the Owner’s Representative.
- 2. Review the construction sequence for the Pavilion footings and concrete slab-on-grade in conjunction with installation of the pavilion and shed.
- 3. Review requirements for protecting adjoining work.

- D. Submit notes from the Pre-Installation Meeting to all attendees including the Project Civil Engineer and the Owner’s Representative.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each pre-fabricated structure, including accessories and related components.
- B. Samples: Representative sizes, for each exposed product and for each finish specified.
- C. Shop drawings: Submit design, fabrication, installation and custom details, and calculations for the:
  - 1. Dual Slope Shelter Pavilion.
  - 2. “Gable Gold Series” Shed.
- D. Delegated-Design Submittal for the Dual Slope Shelter Pavilion:
  - 1. Submit signed and sealed plan sets that meet Baltimore County Code requirements, prepared by a Professional Engineer registered in the State of Maryland.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Manufacturer’s Special Warranty.

#### 1.6 CLOSEOUT SUBMITTALS

- A. Maintenance data.

#### 1.7 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with applicable codes and other applicable requirements of referenced Specifications, standards and publications.
- B. Manufacturer Qualifications.
  - 1. Furnish all items required to install a complete product. Request all missing items from the manufacturer promptly.
  - 2. Manufacturer’s responsibilities include providing Delegated Design professional engineering services necessary to assume engineering responsibility.
  - 3. Engineering Responsibility: Preparation of Shop Drawings and comprehensive engineering analysis by the qualified Professional Engineer.
  - 4. Submit structural, electrical and mechanical calculations, drawings and specifications approved, sealed and signed by Professional Engineers licensed in the State of Maryland.
  - 5. All work shall comply with all applicable Codes, including load analysis data signed and sealed by the qualified Professional Engineer responsible for their preparation.

#### 1.8 WARRANTY

- A. Manufacturer’s Special Warranty: Manufacturer agrees to repair or replace products, materials, or workmanship within specified warranty period.

1. Warranty Period: Twenty (20) years from date of Substantial Completion.

## PART 2 - PRODUCTS

2.1 BASIS OF DESIGN: Products specified in PART 2 – PRODUCTS are intended to establish the “Basis of Design” for products and materials that are required for this Project.

### 2.2 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified Professional Engineer registered in the State of Maryland to prepare the Delegated Design for each pre-fabricated structure..

### 2.3 MANUFACTURERS

- A. Dual Slope Shelter Pavilion: Model “DS20x24S-P108-45-90-150 with 8 foot eave” shall be manufactured by the following, or approved equal:

ICON Shelter Systems, Inc.  
1455 Lincoln Avenue  
Holland, MI 49423  
Telephone: (800) 748-0985      Website: [www.iconselters.com](http://www.iconselters.com)

1. Steel Frame: Powder Coat Colors shall be selected by the Owner’s Representative.
2. Wood Frame and Roof Decking: Finish shall be selected by the Owner’s Representative.
3. Roof: Standing Seam Metal Roof. Color shall be selected from the Manufacturer’s Standard Steel Roof Colors or the Manufacturer’s Standard Steel Roof Colors - Metallics by the Owner’s Representative.
4. Protection: Members shall be wrapped for shipping.
5. Storage and Erection: The Contractor is responsible for protection of the materials after arrival at destination.
  - a. If stored temporarily, members should be placed on blocks well off the ground and separated with wood strips so that air can circulate around each member.
  - b. If stored temporarily, members should be placed on blocks well off the ground and separated with wood strips so that air can circulate around each member.
  - c. If stored temporarily, members should be placed on blocks well off the ground and separated with wood strips so that air can circulate around each member.
  - d. Cover top and bottom with moisture-resistant paper.
  - e. Use non-marring slings when handling.
6. Shop Drawings: The Manufacturer shall furnish a complete set of shop drawings showing the typical details.

- B. Shed: “Gable Gold Series” shall be custom fabricated by the following, or approved equal:

High Point Buildings, LLC  
2200 York Road  
Timonium, MD 21093  
Telephone: (443) 800-4256      Website: [www.highpointbuildings.com](http://www.highpointbuildings.com)

1. Style: “Gable Gold Series”.
2. Sidewall height: 6’-3”.
3. Wall sheathing: ½” Duratemp.
4. All 2” x 4” lumber framing with stud walls 16” on centers.
5. Floor Size: 12’ x 12’.
6. Pressure-treated Floor joists: 12” on center with 5/8” pressure-treated floor decking on 4” x 4” pressure treated skids
7. Siding: Vinyl; Color to be selected by the Owner’s Representative.
8. Roof: Architectural shingles (30-year Warranty) over TechShield metallic insulation barrier.
9. Overhead Garage Door size: 8’ x 6’ aluminum construction; Color to be selected by the Owner’s Representative.
10. Shop Drawing: The Manufacturer shall furnish a complete set of shop drawings showing the typical details, and optional/custom details required by the Owner’s Representative.
11. Options/Custom Features:
  - a. Gable Vent: Provide and install one (1) vent at each end; Size to be confirmed by Representative.
  - b. Steel Step Plate for Bottom of Overhead Door: Include a special detail in the shop drawings which shows the proposed dimensions, materials, fasteners, and powder coat finish for review and approval by the Owner’s Representative.
12. Warranties:
  - a. General Materials and Workmanship: Minimum of three (3) years.
  - b. Special Warranties: Manufacturer’s standard warranty.

### PART 3 - EXECUTION

- 3.1 All Pavilion and Shed components shall be installed in accordance with the manufacturer’s instructions and the approved shop drawings.
- 3.2 Refer to Section 321313 “Concrete Paving” for cast-in-place concrete footing and slab-on-grade concrete construction for the pavilion and shed structures.
- 3.3 Remove and legally dispose of all excess materials, waste and debris at the conclusion of installation.

END OF SECTION 103014

## SECTION 311000 - SITE CLEARING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

A. Section Includes:

1. Protecting existing vegetation to remain.
2. Removing existing vegetation.
3. Utility locating-designating and test pitting.
4. Clearing and grubbing.
5. Stripping and stockpiling topsoil.
6. Removing above- and below-grade site improvements.
7. Disconnecting, capping or sealing, and removing site utilities and abandoning site utilities in place.
8. Temporary erosion and sediment control.
9. Temporary traffic control.

B. Related Requirements:

1. Section 015639 “Temporary Tree and Plant Protection” for temporary tree and plant protection requirements during demolition, clearing, and new construction activities.
2. Section 312000 “Earth Moving” for excavation, fill and backfill materials, and compaction requirements.
3. Section 329113 “Soil Preparation” for Planting Mix requirements.

#### 1.3 DEFINITIONS

- A. Subsoil: Soil beneath the level of subgrade; soil beneath the topsoil layers of a naturally occurring soil profile, typified by less than one percent (1%) organic matter and few soil organisms.
- B. Surface Soil: Soil that is present at the top layer of the existing soil profile. In undisturbed areas, surface soil is typically called "topsoil," but in disturbed areas such as urban environments, the surface soil can be subsoil.
- C. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in-place surface soil; the zone where plant roots grow.
  1. Its appearance is generally friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil.

2. Reasonably free of subsoil, clay lumps, gravel, and other objects larger than 2-inches in diameter.
  3. Free of weeds, roots, toxic materials, or other non-soil materials.
- D. Plant Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction as indicated.
- E. Utilities: Domestic and fire supply water services, sanitary sewer, storm drainage, natural gas, steam, chilled water supply and return systems, electrical, and telecommunication utilities and associated structures, including related surface and subsurface structural and mechanical features and conditions.
- F. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

#### 1.4 PRE-INSTALLATION MEETING

- A. Pre-installation Meeting: Conduct meeting at Project site.
1. Review the field stakeout of the proposed Limit of Disturbance (LOD) and proposed locations for plant protection measures.
  2. Review the proposed locations of saw cuts within existing paved areas for utility trenching.
  3. Topsoil Stripping and Onsite Stockpiling Operations: Review procedures for stripping topsoil and locations for stockpiling onsite.

#### 1.5 MATERIAL OWNERSHIP

- A. All cleared and grubbed materials shall become Contractor's property and shall be removed from Project site.

#### 1.6 INFORMATIONAL SUBMITTALS

- A. Existing Conditions: Documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.
1. Use sufficiently detailed digital photographs or video recordings to document all applicable existing conditions.
  2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plant designated to remain.
  3. Refer to Section 015639 “Temporary Tree and Plant Protection” for additional requirements.
- B. Topsoil stripping and on-site stockpiling program.
- C. Record Drawings: Identifying and accurately showing the locations of all existing utilities by subsurface utility locating-designating methods, and test pitting as applicable.

#### 1.7 QUALITY ASSURANCE

- A. Topsoil Stripping and On-site Stockpiling Operations: Submit a written program to demonstrate the ability of personnel to properly follow procedures, handle materials and equipment during the Work.
  - 1. Include dimensioned diagrams for placement and protection of stockpiles.

## 1.7 FIELD CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
  - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
  - 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- B. Utility Locating-Designating Services and Test Pitting:
  - 1. Notify “Miss Utility” and obtain utility locating-designating services to field locate and mark existing utilities within the Limit of Disturbance (LOD) and adjoining areas where Project is located prior to beginning any site demolition, site clearing and earth-moving operations.
  - 2. For utilities not located and marked by “Miss Utility”, obtain the services of a private utility locating service to identify and surface mark remaining utilities.
  - 3. Review marked utilities with Owner’s Representative in the field prior to proceeding with Work.
  - 4. Complete test pitting operations and submit all reports to the Architect, Civil Engineer, and Owner’s Representative for further direction before proceeding with site demolition, clearing, grubbing, and earth-moving operations.
- C. Do not commence site clearing and grubbing operations until temporary erosion and sediment control and plant protection measures are in place.
- D. Temporary Tree and Plant Protection Zones: Protect as necessary and according to requirements in Section 015639 "Temporary Tree and Plant Protection."
- E. Soil Stripping, Handling, and Stockpiling: Perform only when the soil is dry or slightly moist.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Satisfactory Soil Material: Requirements for satisfactory soil material are specified in Section 312000 "Earth Moving."
  - 1. Obtain approved satisfactory borrow soil material off-site when satisfactory soil material is not available on-site.

### PART 3 - EXECUTION

#### 3.1 PREPARATION

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.
- B. Stake out the proposed Limit of Disturbance (LOD) according to the approved erosion and sediment control Drawings, proposed saw cut limits for removal of existing pavement for improvements and for utility trench excavations, and for temporary plant protection zones for review and approval by Arborist and Landscape Architect at the Pre-Installation Meeting prior to beginning any clearing and grubbing operations.
- C. Verify that trees, shrubs, and other vegetation to remain or to be relocated have been flagged and that protection zones have been identified and enclosed according to requirements in Section 015639 "Temporary Tree and Plant Protection."
- D. Protect existing site improvements to remain from damage during construction.
  - 1. Restore damaged improvements to their original condition, as acceptable to Owner's Representative.

#### 3.2 TEMPORARY EROSION AND SEDIMENT CONTROL

- A. Install temporary erosion and sediment control measures and devices to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways in accordance with the approved Erosion and Sediment Control (ESC) Drawings and requirements of authorities having jurisdiction.
- B. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.
- C. Inspect, maintain, and repair erosion and sediment control measures and devices after rainfall events and throughout construction until permanent vegetation has been established.
- D. With the approval of the Sediment Control/Grading Inspector, remove erosion and sediment controls, restore and stabilize areas disturbed during removal.

#### 3.3 TREE AND PLANT PROTECTION

- A. Protect trees and plants designated to remain on-site located within the Limit of Disturbance (LOD).
  - 1. Do not disturb existing trees and vegetation located outside of the LOD unless specifically noted and indicated.
- B. Repair or replace trees, shrubs, and other vegetation indicated to remain, or be relocated, that are damaged by demolition, clearing, grubbing, and construction operations in accordance with requirements in Section 015639 "Temporary Tree and Plant Protection".

### 3.4 EXISTING UTILITIES

- A. Complete field locating-designating and surface marking existing utilities, and test pitting operations and reporting, prior to beginning any site demolition, clearing and earth moving operations.
  - 1. Request that the Owner arrange for disconnection and sealing/capping of designated public utility services (water, electric, gas, telephone/telecommunication, as applicable) that serve existing structures before beginning site clearing.
- B. Interrupting Existing Utilities: Do not interrupt public and private utilities that serve existing facilities occupied by Owner or others, unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
  - 1. Notify the Owner’s Representative not less than ten (10) days in advance of proposed utility interruptions.
  - 2. Do not proceed with utility interruptions without the Owner Representative's written permission.
- C. Excavate for and remove underground utilities as indicated. Backfill and compact trenches and excavated areas after utility removal in accordance with Section 312000 “Earth Moving” requirements.
- D. Excavation, backfill, and compaction related to the removal of underground utilities is included in Section “Earth Moving”.
  - 1. Refer to applicable fire suppression, plumbing, HVAC, electrical, communications, electronic safety and security systems specified in other applicable utility sections for removal.

### 3.5 CLEARING AND GRUBBING

- A. Within the indicated Limit of Disturbance (LOD), remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.
  - 1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated within the LOD.
  - 2. Completely remove, or grind down stumps, and remove roots larger than two-inches (2”) in diameter, obstructions, and debris to a depth of at least 18-inches (18”) below exposed subgrade in turf areas and thirty-six inches (36”) below exposed subgrade in proposed paved or hardscape areas.
  - 3. Use only hand methods or air spade for grubbing within protection zones.
  - 4. Chip removed tree branches and dispose of off-site.
- B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.
  - 1. Place fill material in horizontal layers not exceeding a loose depth of eight-inches (8”) and compact each layer to a density matching adjacent original ground.

### 3.6 TOPSOIL STRIPPING

- A. Remove plants, sod and grass before stripping topsoil.
- B. Strip topsoil to its full depth in a manner to prevent intermingling with underlying subsoil or other waste materials.
  - 1. Remove subsoil and non-soil materials from topsoil including, but not limited to, clay lumps, gravel, and all other objects larger than two-inches (2”) in diameter, trash, debris, weeds, roots, and other waste materials.
- C. Temporarily stockpile topsoil away from edge of excavations without intermixing with subsoil or other materials. Grade and shape stockpiles to drain surface water.
  - 1. Cover to prevent windblown dust and erosion by water.
  - 2. Limit height of topsoil stockpiles to 72-inches (72”).
  - 3. Do not stockpile topsoil within protection zones.
  - 4. Dispose of surplus topsoil.
  - 5. Surplus topsoil is that which remains after finish grading and topsoiling have been satisfactorily completed.
  - 6. With the Landscape Architect and Owner Representatives written approval, surplus satisfactory topsoil may be used for respreading topsoil to a deeper depth in proposed turf areas if proposed grading can be adjusted and positive drainage is maintained in the regraded areas.

### 3.7 EXISTING SITE IMPROVEMENTS

- A. Remove existing above- and below-grade improvements as indicated and as necessary to facilitate new construction.
- B. Remove concrete slabs, asphalt paving, and aggregate base courses, curbs and gutters, and all features within the Limit of Disturbance (LOD) as indicated and noted.
  - 1. Review limits of designated removals, and limits of proposed saw cutting of pavements, with Landscape Architect and Owner’s Representative prior to removal.
  - 2. Where designated limits are within six-inches of existing full-depth joints, review with Landscape Architect and Owner’s Representative to verify if minor adjustments to saw cutting locations should be made.
  - 3. Unless existing full-depth joints coincide with proposed lines of demolition, neatly saw-cut existing pavement at designated limits before removing adjacent pavement.
  - 4. Cleanly saw-cut pavement faces vertically.
  - 5. Paint cut ends of steel reinforcement in concrete to remain with two (2) coats of antirust coating, following coating manufacturer's written instructions.
  - 6. Keep paint off surfaces that will remain exposed.

3.8 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove all surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of those items off the Owner's property.
- B. Burning tree, shrub, and other vegetation waste is prohibited.
  - 1. Burning of all other waste and debris is prohibited.
- C. Separate recyclable materials produced during site clearing from other non-recyclable materials. Store or stockpile without intermixing with other materials, and transport them to recycling facilities.

END OF SECTION 311000

## SECTION 312000 - EARTH MOVING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

A. Section Includes:

1. Utility locating-designating and test pitting.
2. Excavating and filling for rough grading the Site.
3. Preparing subgrades for miscellaneous concrete slabs-on-grade, pavements and associated subdrainage system, turf and grasses, athletic fields, and plants.
4. Excavating and backfilling for structures, pavements, concrete slabs-on-grade, and utilities.
5. Aggregate base course for miscellaneous concrete slabs-on-grade, walkways and pavements.
6. Aggregate base course for asphalt paving.
7. Subsurface drainage bedding and backfill for trenches.
8. Excavating and backfilling trenches for utilities and pits for buried utility structures.
9. Fine grading, scarifying and removal of stones and debris from subgrade.
10. Disposal of unsatisfactory and surplus soil and topsoil.
11. Temporary traffic control.
12. Testing and inspection requirements.

B. Related Requirements:

1. Section 015639 "Temporary Tree and Plant Protection" for temporary plant protection requirements during demolition, clearing, and new construction activities.
2. Section 311000 "Site Clearing" for site stripping, grubbing, stripping and stockpiling satisfactory topsoil, and removal of above- and below-grade improvements and utilities.
3. Section 321313 "Concrete Paving" for cast-in-place concrete footing requirements for the pre-fabricated pavilion and for cast-in-place concrete slabs-on-grade for the pavilion and shed.
4. Section 329113 "Soil Preparation" for Planting Mix requirements.
5. Section 329200 "Turf and Grasses" for finish grading in turf and lawn areas, including preparing and placing Planting Mix for turf and lawn areas located outside of the Cricket Athletic Field Area.
6. Section 329205 "Turf Establishment for Cricket Athletic Field Area" for finish grading the cricket field area, including preparing and placing Planting Mix for the cricket athletic field area.

7. Section 329220 “Cricket Field Pitch Area Construction” for construction of the cricket field pitch area.
8. Section 329300 "Plants" for finish grading in planting areas, and tree and shrub pit excavation.

### 1.3 EXCAVATION CLASSIFICATION

- A. All excavation shall be Unclassified for this Project.
  1. Refer to the “EXCAVATION, GENERAL” Article in PART 3 – EXECUTION below for additional information.
  2. Additional payment for excavation and disposal of Unsatisfactory Soil materials and Rock above subgrades will NOT be approved or authorized.

### 1.4 DEFINITIONS

- A. Backfill: Satisfactory soil material or controlled low-strength material (CLSM) used to fill an excavation.
  3. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
  4. Final Backfill: Backfill placed over initial backfill to fill a trench.
- B. Aggregate Base Course: Aggregate layer placed between subgrade and a hot-mix asphalt (HMA) base/binder course for asphalt paving or walk, or an aggregate layer placed between subgrade and a concrete slab, pavement, walkway or sidewalk.
- C. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe or designated utilities and related structures.
- D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.
- E. Controlled Low-Strength Material (CLSM) consists of a ready-mix, self-leveling and self-compacting concrete material.
- F. Drainage Course: Aggregate layer supporting a slab-on-grade that also minimizes upward capillary flow of pore water, or open graded, washed aggregate in a subsurface drainage system.
- G. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.
  1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Project Civil Engineer, Testing Agency or. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
  2. Bulk Excavation: Excavation more than 10 feet (10’) in width and more than 30 feet (30’) in length.
  3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Project Civil Engineer, Testing Agency, MEP, or Project Architect.

4. Unauthorized excavation, as well as remedial work directed by Project Civil Engineer, Testing Agency, MEP, or Project Architect shall be without additional compensation.
- H. Fill: Satisfactory soil materials used to raise existing grades.
- I. Flowable Fill: Controlled Low Strength Material (CLSM) consisting of a self-leveling and self-compacting material.
- J. Project MEP Engineer: Mechanical, Electrical, or Plumbing Engineer for the Project.
- K. Recycled Asphalt Pavement (RAP): Asphalt material resulting from the demolition or milling of existing asphalt pavement, specifically processed and graded for reuse in proposed, Testing Agency approved hot-mix asphalt (HMA) pavement mixes.
- L. Structural/Engineered Fill: Soil materials approved by the Testing Agency to be used to raise existing grades under structures, buildings, and site improvements.
- M. Structures: Buildings, footings, foundations, retaining walls, cement-concrete slabs, tanks, curbs, utility manholes and structures, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- N. Subbase Course: Aggregate layer placed between the subgrade and aggregate base course for hot-mix asphalt pavement or walkway, or aggregate layer placed between the subgrade and aggregate base course for a concrete pavement or a concrete walkway or sidewalk.
- O. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below a subbase course, aggregate base course, drainage course, topsoil, or planting mix materials.
- P. Plant Protection Zone: Area surrounding individual trees, groups of trees, shrubs, and other vegetation to be protected during construction.
- Q. Utilities: On-site and off-site underground pipes, conduits, ducts, cables, and utility structures as well as underground services within buildings.

#### 1.4 PRE-INSTALLATION MEETING

- A. Pre-installation Meeting: Conduct pre-excavation meeting at Project site.
  1. Prepare and submit Meeting Notes to all attendees including the Project Civil Engineer and Owner's Representative.
- B. Unless written permission is pre-approved and issued prior to the Pre-installation Meeting by the Owner's Representative, the following individuals are required to attend the Pre-installation Meeting unless directed otherwise by the Owner's Representative:
  1. General Contractor's Superintendent.
  2. Excavation/Grading Contractor's Superintendent and key personnel.
  3. Project Landscape Architect.
  4. Owner's Representative.

- C. Review the following and other topics of concern:
  - 1. Review excavation means and methods, and equipment to be used for “Unclassified” Excavation.
  - 2. Personnel and equipment needed to make progress and avoid delays.
  - 3. Coordination of Work with underground utility locating-designating mapping and findings.
  - 4. Review the different permanent turf establishment in areas outside of the Cricket Athletic Field Area and within the Cricket Athletic Field Area.
  - 5. Review the location and depths of proposed subdrainage systems.
  - 6. Review extent of trenching by hand or with air-spade within Plant Protection Zones.
  - 7. Review the approved Erosion and Sediment Control (ESC) Drawings and approved stormwater management (SWM) Drawings for related earth moving requirements, operations, and sequence of construction.
  - 8. Review SWM “As-Built” Submission requirements.
  - 9. Review temporary traffic control requirements.
  - 10. Review field quality control inspection and testing requirements.
  
- D. Submit notes from the Pre-Installation Meeting to all attendees including the Project Civil Engineer and the Owner’s Representative.

#### 1.5 ACTION SUBMITTALS

- A. Product Data: For each type of the following manufactured products required:
  - 1. Geotextiles.
  - 2. Controlled low-strength material (CLIM), including design mixture.
  - 3. Detectable warning tape.
  
- B. Samples for Verification: For the following products, in sizes indicated below, and submitted with the product data:
  - 1. Geotextiles: 12- by 12-inches, of each type.
  - 2. Detectable warning tape: 12-inches long; of each color.

#### 1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified testing agency.
  
- B. Material Test Reports: For each on-site and borrow soil material proposed for fill and backfill as follows:
  - 1. Classification according to ASTM D2487.
  - 2. Laboratory compaction curve according to ASTM D698 (Standard Proctor).
  
- C. Pre-excavation Digital Photographs or Videotape: Submit sufficiently detailed digital photographs or videotapes showing existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by earth-moving operations. Submit before earth moving operations begin.

## 1.7 QUALITY ASSURANCE

- A. Geotechnical Report: “Geotechnical Engineering Report, Baltimore County On-Call RFP No. 2021-05, Cloverland Park Cricket Field”, Phoenix, MD, SaLUT-TLB Reference Number 22-0007.01, dated April 26, 2024 and prepared by SaLUT-TLB, 530 McCormick Drive, Suite S, Glen Burnie, MD 21061 Telephone: 443.5773.1600 Website: [www.SaLUTinc.com](http://www.SaLUTinc.com)
- B. Maryland Department of Transportation, State Highway Administration, Standard Specifications for Construction and Materials (MDSHA) and current Special Provisions, latest edition as amended to date.
  - 1. References to “Measurement and Payment” and “Price Adjustment” provisions do not apply to Section 312000.
- C. Baltimore County, Department of Public Works and Transportation, Standard Specifications for Construction and Materials (BCDPW), as amended to date.
  - 1. References to “Measurement and Payment” do not apply to Section 312000.
- D. Comply with American Association of State Highway and Transportation Officials (AASHTO) referenced standards and publications, as amended to date.
- E. Comply with ASTM International (ASTM) referenced standards, as amended to date.
- F. Blasting is not allowed on this Project.
- G. Geotechnical Testing Agency Qualifications: Qualified according to ASTM E329 and ASTM D3740 for testing indicated.

## 1.8 UTILITY LOCATING-DESIGNATING AND TEST PITTING

- A. Utility Locating-Designating Services: Notify and obtain utility locating-designating services to field locate and mark existing utilities within the Limit of Disturbance (LOD) and associated areas where Project is located prior to beginning any site demolition, clearing, grubbing, and earth-moving operations.
  - 1. Obtain "Miss Utility" services to field locate and surface mark utilities.
  - 2. For utilities not located and marked by “Miss Utility”, obtain the services of a private utility locating-designating service to identify and surface mark utilities.
  - 3. Review marked utilities with the Owner’s Representative in the field prior to proceeding with site clearing, grubbing, and earth-moving operations.
  - 4. Complete test pitting operations and submit all reports to the Project Architect, Project Civil Engineer, and Owner’s Representative for further direction before proceeding with site demolition, clearing, grubbing, and earth-moving operations.

## 1.9 FIELD CONDITIONS

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

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
  2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- B. Do not commence earth-moving operations until temporary site fencing, erosion and sediment control measures specified in Section 311000 "Site Clearing" are in place.
- C. Do not commence clearing, grubbing, and earth-moving operations until plant protection measures installed specified in Section 015639 "Temporary Tree and Plant Protection" are in place.
- D. The following practices are prohibited within Plant 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 disturbances without written authorization from the Project Architect, Project Landscape Architect, Project MEP, or Project Civil Engineer.
  7. Attachment of signs to or wrapping materials around trees or plants unless indicated.
- E. Do not direct vehicle or equipment exhaust towards Plant Protection Zones.
- F. Prohibit heat sources, flames, ignition sources, and smoking within or near Plant Protection Zones.

## PART 2 - PRODUCTS

### 2.1 GENERAL:

- A. Basis of Design: Products specified in PART 2 – PRODUCTS are intended to establish the “Basis of Design” for product and material requirements.

### 2.2 SOIL MATERIALS

- A. Provide satisfactory off-site borrow soil materials when sufficient satisfactory on-site soil materials are not available from excavations.
- B. Satisfactory Soils: Soil Classification Groups GW, GP, GM, SW, SP, and SM according to ASTM D2487, or a combination of these groups approved by Testing Agency; free of Rock fragments or gravel larger than 3-inches in any dimension, rubble, debris, waste, frozen materials, vegetation, and all other deleterious matter.
1. Liquid Limit: As approved by the Testing Agency.
  2. Plasticity Index: As approved by the Testing Agency.

Soil imported for use as compacted fill or backfill shall be approved by the Testing Agency prior to delivery to the Project site, classified as SM or more granular, with a maximum dry density of 110 pcf or greater, within two (2) percentage points of the optimum moisture content of the soil and approved by the Testing Agency.

- C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D2487, or a combination of these groups unless approved in advance with written authorization from the Testing Agency.
  - 1. Unsatisfactory soils also include Rock, boulders, soil materials of all types and conditions, obstructions, rubble, and satisfactory soils not maintained within two (2) percentage points of optimum moisture content at time of compaction, unless approved in advance with written authorization from the Testing Agency.
  - 2. Reclaimed/recycled concrete (RC) is considered an Unsatisfactory Soil material.
- D. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.
- E. Aggregate Base Course or Graded Aggregate Base Course (GAB): “Graded Aggregate – Base” in accordance with MDSHA or BCDPW Section 901, Table 901 A and Table 901 B.
- F. Structural/Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve. Structural/Engineered Fill shall be pre-approved by the Testing Agency prior to delivery to the Project site.
- G. Bedding Course: Narrowly graded mixture of washed crushed stone, or crushed or uncrushed gravel; ASTM D448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and zero to 5 percent passing a No. 8 sieve.
- H. Drainage Course: Narrowly graded mixture of washed crushed stone, or crushed or uncrushed gravel; ASTM D448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and zero to 5 percent passing a No. 8 sieve.
- I. Sand: ASTM C33/C33M; fine aggregate.
- J. Impervious Fill: Clayey gravel and sand mixture, capable of compacting to a dense state, as determined by Testing Agency.

### 2.3 GEOTEXTILES

- A. Subsurface Drainage Geotextile: Nonwoven geotextile, manufactured for subsurface drainage applications, composed of polypropylene fibers; complying with MDSHA Specification Section 919 GEOTEXTILES for Application Class SD, Type I:
  - 1. Grab Strength: 160 lb. minimum per ASTM D4632.
  - 2. Puncture Strength: 310 lb. minimum per ASTM D6241.
  - 3. Permittivity: 0.50 sec<sup>-1</sup> minimum per ASTM D4491.

4. Apparent Opening Size: 0.43 mm, maximum opening size per ASTM D4751.
5. Flow Rate: Minimum 110 gal/min/ft<sup>2</sup> per ASTM D4491.
6. Trapezoid Tear Strength: 55 lb. per ASTM D4533.
7. UV Resistance: 50 percent (minimum percent-retained test value) at 500 hours exposure per ASTM D4355.

B. Separation Geotextile: Non-woven needle-punched geotextile fabric, manufactured for separation applications, composed of polypropylene fibers; complying with MDSHA Specification Section 919 GEOTEXTILES for Application Class SE:

1. Grab Tensile Strength: 160 lb. minimum per ASTM D4632.
2. Puncture Strength: 310 lb. minimum per ASTM D6241.
3. Permittivity: 0.20 sec<sup>-1</sup> minimum per ASTM D4491.
4. Flow Rate: Minimum 95 gal/min/ft<sup>2</sup> per ASTM D4491.
5. Apparent Opening Size: 0.30 mm, maximum opening size per ASTM D4751.
6. Trapezoid Tear Strength: 80 lb. per ASTM D4533.
7. UV Resistance: 50 percent (minimum percent-retained test value) at 500 hours exposure per ASTM D4355.

#### 2.4 CONTROLLED LOW-STRENGTH MATERIAL (CLSM)

A. Controlled Low-Strength Material: Type B, in accordance with MDSHA Specification Section 902.16.

#### 2.5 ACCESSORIES

A. Detectable Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, a minimum of 6-inches wide and 4-mil thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30-inches deep; colored as follows:

1. Red: Electric power lines, cables, conduit and lighting cable systems.
2. Yellow: Gas, oil, steam, petroleum or gaseous material systems.
3. Orange: Communication, alarm or signal lines, cables or conduit systems.
4. Blue: Potable water systems.
5. Green: Sanitary sewer and storm drain systems.
6. Purple: Reclaimed water, irrigation and slurry line systems.

### PART 3 - EXECUTION

#### 3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth-moving operations.

- B. Protect and properly maintain erosion and sediment devices and controls during earth-moving operations. Immediately inspect and make necessary repairs after rainfall events, and as directed by the Grading/Sediment Control Inspector.
- C. Protect subgrades and foundation soils from water, freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

### 3.2 DEWATERING

- A. Provide dewatering system of sufficient scope, size, and capacity to control hydrostatic pressures and to lower, control, remove, and dispose of ground water and permit excavation and construction to proceed on dry, stable subgrades.
- B. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding the Project site and surrounding areas.
- C. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.
  - 1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.
- D. Dispose of water removed by dewatering in a manner that avoids endangering public health, property, and portions of work under construction or completed.
  - 1. Dispose of water and sediment in accordance with the approved Erosion and Sediment Control Drawings, and in a manner that avoids inconvenience to others.

### 3.3 EXPLOSIVES

- A. Explosives: Do not use explosives.

### 3.4 EXCAVATION, GENERAL

- A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered.
  - 1. Unclassified excavated materials may include Rock, boulders, Unsatisfactory (Unsuitable) Soil materials of all types and conditions, and obstructions.
  - 1. NO changes in the Contract Sum or the Contract Time will be authorized for excavation above subgrade elevations or removal of Rock, boulders, Unsatisfactory Soil materials of all types and conditions, rubble, or obstructions.
  - 2. Changes in the Contract Sum or the Contract Time might be authorized for Rock excavation below subgrade elevations, or removal of boulders, Unsatisfactory Soil materials, rubble, or obstructions below subgrade elevations.
  - 3. If excavated materials intended for fill and backfill include Unsatisfactory Soil materials or Rock, replace with Satisfactory Soil materials.

4. Remove Rock to lines and grades indicated to permit installation of permanent construction without exceeding the following dimensions:
  - a. 24-inches outside of concrete forms other than at footings.
  - b. 12-inches outside of concrete forms at footings.
  - c. 6-inches outside of minimum required dimensions of concrete cast against grade.
  - d. Outside dimensions of concrete walls indicated to be cast against Rock without forms or exterior waterproofing treatments.
  - e. 6-inches beneath bottom of concrete slabs-on-grade.
  - f. 6-inches beneath pipe in trenches and the greater of 24-inches wider than pipe or 42-inches wide.

### 3.5 EXCAVATION FOR STRUCTURES

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1-inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.
  1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement.
  2. Trim bottoms to required lines and grades to leave solid base to receive other work.
  3. Excavation for Underground Tanks, Basins, and Mechanical or Electrical Utility Structures: Excavate to elevations and dimensions indicated within a tolerance of plus or minus 1 inch.
  4. Do not disturb bottom of excavations intended as bearing surfaces.
- B. Excavations at Edges of Plant Protection Zones:
  1. Perform excavations and grading within and adjacent to Plant Protection Zones in accordance with Section 015639 "Temporary Tree and Plant Protection" requirements.
  2. Excavate by hand or with an air-spade to indicated lines, cross sections, elevations, and subgrades.
  3. If excavating by hand, use narrow-tine spading forks to comb soil and expose roots.
  4. Do not break, tear, or chop exposed roots.
  5. Do not use mechanical equipment that rips, tears, or pulls roots.
  6. Cut and protect roots in accordance with requirements in Section 015639 "Temporary Tree and Plant Protection."

### 3.6 EXCAVATION FOR MISCELLANEOUS CONCRETE SLABS-ON-GRADE, WALKWAYS AND PAVEMENTS

- A. Excavate surfaces under miscellaneous concrete slabs-on-grade, walkways and pavements to indicated lines, cross sections, elevations, and subgrades.

### 3.7 EXCAVATION FOR UTILITY TRENCHES

- A. Excavate trenches to indicated gradients, lines, depths, and elevations.

1. Excavate trenches to allow installation of top of pipe below frost line unless indicated otherwise on the applicable utility profile.
- B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit.
1. Excavate trench walls vertically from trench bottom to 12-inches higher than top of pipe or conduit or as indicated.
  2. Clearance: 12-inches each side of pipe or conduit, or as indicated.
- C. Trench Bottoms: Excavate trenches 4-inches deeper than bottom of pipe and conduit elevations to allow for bedding course.
1. Hand-excavate deeper for bells of pipe.
  2. Excavate trenches 6-inches deeper than elevation required in Rock or other unyielding bearing material to allow for bedding course.
- D. Trenches in Tree- and Plant-Protection Zones:
1. Hand-excavate to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots.
  2. Do not break, tear, or chop exposed roots.
  3. Do not use mechanical equipment that rips, tears, or pulls roots.
  4. Do not cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities.
  5. Cut and protect roots according to requirements in Section 015639 "Temporary Tree and Plant Protection."

### 3.8 SUBGRADE INSPECTION

- A. Notify Testing Agency, Project Civil Engineer, and Project MEP when excavations have reached required subgrade.
- B. If Testing Agency, Project Civil Engineer, or Project MEP determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
- A. Proof-roll subgrade below proposed cast-in-place concrete building slabs, cast-in-place concrete structure slabs, cast-in-place concrete miscellaneous slabs on-grade, curb and gutter, and pavements with a pneumatic-tired, fully-loaded, tandem-axle dump truck having a minimum axle load of ten (10) tons, or other suitable compaction equipment approved by Testing Agency for trenches and confined areas, to identify soft pockets and areas of excess yielding in the presence of the Testing Agency.
1. Do not test or proof-roll wet or saturated subgrades.
  2. Completely proof-roll subgrade in one direction and repeat proof-rolling subgrade in direction perpendicular to the initial direction.
  3. Limit vehicle speed to three (3) mph.
  4. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting as determined by Testing Agency, Project MEP, or Project Civil Engineer, and replace with compacted backfill or fill as directed.

- B. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
- C. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Testing Agency, Project MEP, or Project Civil Engineer, without additional compensation.
- D. Refer to the approved Stormwater Management (SWM) Drawings for subgrade testing, specific backfill materials, and compaction requirements for all proposed SWM facilities.

### 3.9 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation.
  - 1. Lean concrete fill, with 28-day minimum compressive strength of 3000 psi, may be used when approved by Project Architect.
  - 2. Fill unauthorized excavations under site related construction, pipe, or conduit as directed by Project MEP, Project Civil Engineer, or Testing Agency.

### 3.10 STORAGE OF SOIL MATERIALS

- A. Borrow soil materials and excavated satisfactory soil materials shall be stockpiled without intermixing.
  - 1. Place, grade, and shape stockpiles to drain surface water.
  - 2. Cover to prevent windblown dust.
  - 3. Comply with the approved Erosion and Sediment Control Drawings.
  - 4. Stockpile soil materials away from edge of excavations.
  - 5. Do not store within drip line of remaining trees.

### 3.11 BACKFILL

- A. Place and compact backfill in excavations promptly, but not before completing the following:
  - 1. Construction below finish grade including, where applicable, subdrainage, dampproofing, waterproofing, and perimeter insulation.
  - 2. Surveying locations of underground utilities for Record Documents.
  - 3. Testing and inspecting underground utilities.
  - 4. Removing concrete formwork.
  - 5. Removing trash and debris.
  - 6. Removing temporary shoring, bracing, and sheeting.
  - 7. Installing permanent or temporary horizontal bracing on horizontally supported walls.
- B. Place backfill on subgrades free of water, mud, frost, snow, or ice.

### 3.12 UTILITY TRENCH BACKFILL

- A. Place backfill on subgrades free of water, mud, frost, snow, or ice.
- B. Place and compact bedding course on trench bottoms and where indicated.
  - 1. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
- C. Trenches under Footings: Backfill trenches excavated under footings and within 18-inches of bottom of footings with satisfactory soil.
  - 1. Fill with concrete to elevation of bottom of footings.
  - 2. Concrete is specified in Section 321313 "Concrete Paving."
- D. Trenches under Roadways: Install a minimum 8-inch thick, concrete-base slab support for piping or conduit less than 24-inches below surface of roadways
  - 1. After installing and testing, completely encase piping or conduit in a minimum of 8-inches of concrete before backfilling or placing roadway aggregate base course.
  - 2. Concrete is specified in Section 321313 "Concrete Paving".
- E. Backfill voids with satisfactory soil while removing shoring and bracing.
- F. Initial Backfill:
  - 1. Soil Backfill: Place and compact initial backfill of bedding course, free of particles larger than 1-inch in any dimension, to a height of 1-inch over the pipe or conduit.
  - 2. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit.
  - 3. Coordinate backfilling with utilities testing.
- G. Final Backfill:
  - 1. Soil Backfill: Place and compact final backfill of satisfactory soil to final subgrade elevation.
- H. Detectable Warning Tape:
  - 1. Install detectable warning tape directly above utilities, 12-inches below subgrade.
  - 2. Install 6-inches below subgrade under pavements and slabs.

### 3.13 SOIL FILL

- A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
- B. Place and compact fill material in layers to required elevations as follows:
  - 1. Under grass and planted areas: Use satisfactory soil material.

2. Under walks and pavements: Use satisfactory soil material or structural/engineered fill approved by the Testing Agency.
  3. Under steps and ramps: Use structural/engineered fill or satisfactory soil material approved by the Testing Agency.
  4. Under footings and foundations, use engineered fill.
- C. Place soil fill on subgrades free of water, mud, frost, snow, or ice.

### 3.14 CONSTRUCTION OF STORMWATER MANAGEMENT (SWM) FACILITIES

- A. Refer to the approved Stormwater Management (SWM) Drawings for construction, fill and backfill material requirements.

### 3.15 SOIL MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within two (2) percentage points of optimum moisture content.
1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain water, frost or ice.
  2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by two (2) percentage points and is too wet to compact to specified maximum dry density.

### 3.16 COMPACTION OF SOIL BACKFILLS AND FILLS

- A. Place backfill and fill soil materials in layers not more than 8-inches in loose depth for material compacted by heavy compaction equipment and not more than 4-inches in loose depth for material compacted by hand-operated tampers.
- B. Place fill and backfill behind retaining walls in maximum 4-inch thick loose lifts.
- C. Place backfill and fill soil materials evenly on all sides of structures to required elevations and uniformly along the full length of each structure.
- D. Compact soil materials to not less than the following percentages of maximum dry density according to ASTM D698 (Standard Proctor):
1. Under structures, building slabs, steps, and pavements, scarify and recompact top 12-inches of existing subgrade and each layer of backfill or fill soil material to at least 95 percent of maximum dry density.
  2. Under walkways, scarify and recompact top 6-inches below subgrade and compact each layer of backfill or fill soil material to at least 95 percent of maximum dry density.
  3. Under turf or unpaved areas, scarify and recompact top 6-inches below subgrade and compact each layer of backfill or fill soil material to 90 percent of maximum dry density.
  4. For utility trenches, compact each layer of initial and final backfill soil material to at least 95 percent of maximum dry density. Utility trench backfill and compaction requirements shall be the same whether located beneath structures, paving, or turf areas.

5. Refer to the approved Stormwater Management (SWM) Drawings for construction, fill and backfill material, and compaction limitation requirements.

### 3.17 GRADING

- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
  1. Provide a smooth transition between adjacent existing grades and new grades.
  2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
- B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding.
  1. Finish subgrades to elevations required to achieve indicated finish elevations, within the following subgrade tolerances:
  2. Turf or Unpaved Areas: Plus or minus 1-inch.
  3. Walks: Plus or minus ½-inch.
  4. Pavements: Plus or minus ½-inch.
- C. Grading inside Limits of Pavement: Finish subgrade to a tolerance of ½-inch when tested with a 10-foot straightedge.

### 3.18 SUBSURFACE DRAINAGE

- A. Subsurface Drain, Geotextile Fabric, and Initial Drainage Course Backfill: Place subsurface drainage geotextile upon subgrade and extend up the sides of the trench.
  1. Place a 6-inch deep, or depth as indicated, drainage course upon the subsurface drainage geotextile above the subgrade to support subdrainage pipe.
  2. Install the subdrainage pipe and encase with a minimum 12-inch depth of drainage course material all around the pipe, placed in compacted layers 6-inches deep.
  3. Uniformly consolidate each drainage course layer with a minimum of two passes of a plate-type vibratory compactor.
  4. Wrap the top with subsurface drainage geotextile, overlapping the top and ends a minimum of 6-inches.
  5. Place and compact satisfactory soil backfill above the encased subdrainage system to reach finish grade subgrade above.
- B. Additional Drainage Course Backfill: Extend geotextile fabric up the trench sides as indicated.
  1. Place and uniformly consolidate additional drainage course over the initial drainage course up to within 12-inches of proposed finish subgrade above, or as indicated, in consolidated layers 6-inches thick.
  2. Uniformly consolidate each drainage course layer with a minimum of two passes of a plate-type vibratory compactor.
  3. Overlay the top of the drainage course backfill with one layer of subsurface drainage geotextile, overlapping the top and ends at least 6-inches.

4. Place and compact impervious fill over drainage course backfill in maximum 6-inch-thick compacted layers to reach final subgrade.

### 3.19 AGGREGATE BASE COURSE UNDER MISCELLANEOUS CONCRETE SLABS-ON-GRADE, PAVEMENTS AND WALKWAYS

- A. Where unsatisfactory man-placed fill subgrade materials are encountered beneath proposed pavement subgrades, undercut the unsatisfactory soils a minimum depth of 12-inches and replace with satisfactory soil or structural/engineered fill as directed by the Testing Agency.
- B. Where indicated on the Drawings, place aggregate base course on approved subgrades free of mud, frost, water, snow, or ice.
- C. On approved subgrade, place aggregate base course under concrete slabs-on-grade, pavements, walks and walkways as follows:
  1. Shape aggregate base course to required crown elevations and cross-slope grades.
  2. Place aggregate base course 6-inches or less in compacted thickness in a single layer.
  3. Place aggregate base course that exceeds 6-inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6-inches thick or less than 3-inches thick.
  4. Compact aggregate base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry density according to ASTM D698 (Standard Proctor).
- D. Pavement Shoulders: Place shoulders along edges of aggregate base course to prevent lateral movement. Construct shoulders, at least 12-inches wide, of satisfactory soil materials and compact simultaneously with each aggregate base course layer to not less than 95 percent of maximum dry density according to ASTM D698 (Standard Proctor).

### 3.20 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified geotechnical engineering testing agency to perform tests and inspections.
- B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.
- C. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design-bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Project Architect or Project Civil Engineer.
- D. Testing agency will test compaction of soils in place according to one of the following methods as determined by Testing Agency:
  1. ASTM D1556 (Standard Test Method for Density and Unit Weight of Soil in Place by Sand Cone Method);
  2. ASTM D2167 (Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method);

3. ASTM D2937 (Standard Test Method for Density and Unit Weight of Soil in Place by Drive-Cylinder Method);
  4. ASTM D6938 (Standard Test Method for In-Place Density of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).
- E. Tests will be performed at the following locations and frequencies:
1. Concrete Slabs-on-Grade, Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least one (1) test for every 50 sq. ft. or less of paved area or building slab but in no case fewer than three (3) tests.
  2. Foundation Wall Backfill: At each compacted backfill layer, at least one (1) test for every 50 linear feet or less of wall length but no fewer than two (2) tests.
  3. Trench Backfill: At each compacted initial and final backfill layer, at least one (1) test for every 50 linear feet or less of trench length but no fewer than two (2) tests.
- F. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.
1. Recompact and retest until specified compaction is obtained.
  2. If the required degree of compaction cannot be obtained as indicated above, notify the Owner's Representative, Project Architect, Project MEP, and Project Civil Engineer for consultation with the Testing Agency in order to determine a recommended course of action in order to achieve the specified compaction requirements.

### 3.21 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to tolerances specified when completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
  1. Scarify or remove and replace soil material to depth as directed by Project Landscape Architect, or Project Civil Engineer; reshape and recompact.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
  1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

### 3.22 DISPOSAL OF ROCK, SURPLUS AND WASTE MATERIALS

- A. Remove excavated Rock, surplus satisfactory soils, unsatisfactory soils, and all waste materials including trash and debris, and legally dispose of all those materials off of the Owner's property.

END OF SECTION 312000

## SECTION 321216 - ASPHALT PAVING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:

- 1. Hot-mix asphalt patching and joint repair.
- 2. Hot-mix asphalt paving.
- 3. Pavement markings.
- 4. Parking wheel stops.
- 5. Parking signage and accessible (ADA) parking signage.

- B. Related Requirements:

- 1. Section 311000 “Site Clearing” for demolition and removal of existing asphalt pavement.
- 2. Section 312000 “Earth Moving” for subgrade preparation, fill and backfill materials, aggregate base courses, and compaction requirements.
- 3. Section 321313 “Concrete Paving” for concrete pavement, concrete curb and gutter, and driveway aprons.

#### 1.3 PRE-INSTALLATION MEETING

- A. Pre-installation Conference: Conduct conference at Project site.

- 1. Review methods and procedures related to hot-mix asphalt paving including, but not limited to, the following:
  - a. Review proposed sources of paving materials, including capabilities and location of plant that will manufacture hot-mix asphalt.
  - b. Review requirements for protecting paving work, including restriction of traffic during installation period and for remainder of construction period.
- 2. Require representatives of each entity directly concerned with concrete paving to attend, including the following:
  - a. Contractor's superintendent.
  - b. Asphalt Paving Subcontractor.

#### 1.4 ACTION SUBMITTALS

- A. Hot-Mix Asphalt Designs: For each Hot-Mix Asphalt (HMA) Course indicated.
  - 1. HMA Design Mix Approval: Current BCDPW approved “Superpave” asphalt paving mixture for each job-mix proposed for the Work.
  - 2. Submit written documentation from the asphalt plant indicating that each applicable HMA Design Mix complies with BCDPW Specification Section 904.06 “Hot Mix Asphalt (HMA)”, including technical data and tested physical properties for each proposed HMA Design Mix.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For paving-mix producers and testing agency.
- B. Material Certificates: Include statement that mixes containing recycled materials will perform equal to mixes produced from all new materials.
  - 1. Aggregates.
  - 2. Asphalt binder.
  - 3. Asphalt cement.
  - 4. Tack coat.
- C. Field quality-control reports.

#### 1.6 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of referenced specifications, standards and publications for hot-mix asphalt paving construction.
  - 1. Unless indicated otherwise, the most stringent requirement applies to materials and construction of hot-mix asphalt paving.
  - 2. If a conflict is apparent between referenced standards and publications, bring it to the attention of the Project’s Design Civil Engineer and Testing Agency for resolution.
- B. American Association of State Highway and Transportation Officials (AASHTO) referenced standards and publications.
- C. American Society for Testing & Materials (ASTM) referenced standards and publications.
- D. Americans with Disabilities Act (ADA), 2010 ADA Standards for Accessible Design regulations, as amended to date, published by the United States Department of Justice.
- E. Asphalt Pavement Alliance (AI), “MS-22 Construction of Asphalt Pavements”, referenced publications as amended to date.
- F. Baltimore County, Department of Public Works, Standard Specifications for Construction and Materials (BCDPW), latest edition as amended to date.

1. References to “Measurement and Payment” and Bid Price Adjustment provisions do not apply to Specification Section 321216.
- G. Baltimore County, Department of Public Works, Standard Details for Construction, latest edition as amended to date.
- H. Baltimore County, Department of Public Works, Division of Construction Contracts Administration, Source of Supply, latest edition, as amended to date.
- I. HMA Producer Qualifications: A paving-mix producer / supplier approved by BCDPW, Division of Construction Contracts Administration as indicated on their Source of Supply, latest edition.
- J. U.S. General Services Administration “Federal Specifications” (FS) referenced specifications and standards.
- K. Testing Agency Qualifications: Qualified in accordance with ASTM D3666 for testing indicated.

#### 1.7 FIELD CONDITIONS

- A. Environmental Limitations: Do not apply aggregate base course and asphalt materials if subgrade is wet, if rain is imminent or expected before time required for adequate cure. Comply with BCDPW Specifications.

### PART 2 - PRODUCTS

- 2.1 Basis of Design: Products specified in PART 2 – PRODUCTS are intended to establish the “Basis of Design” for products and materials that are required for this Project.

#### 2.2 GENERAL:

- A. Comply with referenced Specifications, standards and publications.

#### 2.3 AGGREGATES

- A. General: In accordance with BCDPW Specifications and specification Section 312000 “Earth Moving”.

#### 2.4 ASPHALT MATERIALS

- A. In accordance with BCDPW Specifications.
- B. Water: Potable.

## 2.5 AUXILIARY MATERIALS

- A. Roadway, Parking, and Accessible (ADA) Parking Signage: As indicated.
- B. Precast Concrete Wheel Stops:
  - 1. Minimum 4000-psi compressive strength, steel-reinforced, air entrained concrete.
  - 2. Size: 4-1/2 inches high by 9 inches wide by 72 inches long, or as indicated.
  - 3. Provide chamfered corners, transverse drainage slots on underside, and a minimum of two factory-formed vertical holes through wheel stop for anchoring to substrate.
  - 4. Surface Appearance: Free of pockets, sand streaks, honeycombs, and other obvious defects. Corners shall be uniform, straight, and sharp.
  - 5. Installation Hardware: Deformed-steel rebar dowels, 1/2-inch diameter and 15-inch minimum length.
- C. Joint Sealant: ASTM D6690, Type I, hot-applied, single-component, polymer-modified sealant for hot-mix asphalt and concrete pavements, or approved equal.
- D. Pavement Marking Paint: Latex, waterborne emulsion, lead and chromate free, ready mixed, complying with FS TT-P-1952, Type I, with drying time of less than three minutes.
  - 1. Color: White for general applications, except handicapped space symbol shall be blue and white, and fire lane curb shall be red.
- E. Recycled Materials for Hot-Mix Asphalt (RAP): In accordance with BCDPW Specifications.

## 2.6 MIXES

- A. Hot-Mix Asphalt: Dense-graded, hot-mix “Superpave” asphalt plant mixes in accordance with BCDPW Specifications and as indicated on the Drawings. Materials and ingredient composition for Recycled Hot-Mix Asphalt (RAP) shall be in accordance with BCDPW Specification requirements.
  - 1. HMA “Superpave” Base/Binder Course: As indicated.
  - 2. HMA “Superpave” Surface Course: As indicated.

## PART 3 - EXECUTION

### 3.1 GENERAL

- A. Construct in accordance with BCDPW Specifications, referenced standards and publications.

### 3.2 EXAMINATION AND PREPARATION

- A. Verify that subgrade is dry and in satisfactory condition prior to beginning paving operations.

- B. Proof-roll compacted subgrade with appropriate heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding in accordance with Section 312000 “Earth Moving” before installing aggregate base course. Correct unsatisfactory subgrade conditions.
- C. Proceed with installation of aggregate base course and paving only after unsatisfactory conditions have been corrected.
- D. Protection: Provide protective materials, procedures, and worker training to prevent asphalt materials from spilling, coating, or building up on curbs, driveway aprons, manholes, and other surfaces adjacent to the Work.

### 3.3 PATCHING

- A. Vertically saw cut perimeter of rectangular or trapezoidal area of unsatisfactory asphalt pavement, extending at least six (6) inches into adjacent satisfactory pavement as indicated.
- B. Remove unsatisfactory existing pavement to reach aggregate base course. Proof-roll or test existing exposed aggregate base course in accordance with Section 312000 “Earth Moving” and replace unsatisfactory base course as necessary.
- C. Placing Single-Course Asphalt Patch Material: Apply tack coat to saw cut edges and fill patch areas with HMA surface course for full thickness of patch and compact flush with adjoining existing surface.
- D. Placing Two-Course Patch Material: Apply tack coat to saw cut edges and partially fill patch area with HMA base course mix to match original base course thickness and compact. Install tack coat and HMA surface course to match original surface course thickness and compact flush with adjoining existing surface.

### 3.4 CRACK AND JOINT REPAIR

- A. Crack and Joint Repair: Remove existing joint filler, dirt and deleterious material from cracks and joints to a depth of 1/2 inch or as recommended by the joint sealant manufacturer.
  - 1. After removing and cleaning cracks and joints, use hot-applied joint sealant to seal cracks and joints. Fill flush with surface of existing pavement.

### 3.5 INSTALLATION OF AGGREGATE BASE COURSE FOR NEW HMA PAVING

- A. Ensure that prepared subgrade has been proof-rolled in accordance with Section 312000 “Earth Moving” and corrective repair of unsatisfactory subgrade areas have been performed.
- B. Install aggregate base course in accordance with Section 312000 “Earth Moving.”

### 3.6 INSTALLATION OF HOT-MIX ASPHALT (HMA) PAVEMENT

- A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off.

1. Place asphalt mix by hand in areas inaccessible to equipment in a manner that prevents segregation of mix.
  2. Place each course to required grade, cross section, and thickness when compacted.
  3. Install hot-mix asphalt base/binder course in number of lifts and thicknesses indicated.
  4. After applying tack coat, install hot-mix asphalt surface course in single lift.
  5. Spread mix at a minimum temperature of 250 deg F.
  6. Begin installing mix along centerline of crown for crowned sections and on high side of one-way slopes unless otherwise indicated.
  7. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.
- B. Place paving in consecutive strips not less than ten (10) feet wide unless infill edge strips of a lesser width are required.
1. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Overlap mix placement approximately 1 to 1-1/2 inches from strip to strip to ensure proper compaction of mix along longitudinal joints.
  2. Complete a section of asphalt base/binder course before placing asphalt surface course.
- C. Promptly correct surface irregularities in paving course behind paver.
1. Use suitable hand tools to remove excess material forming high spots.
  2. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

### 3.7 JOINTS

- A. Construct joints to ensure a continuous bond between adjoining paving sections. Construct joints free of depressions, with same texture and smoothness as other sections of hot-mix asphalt course.
1. Clean contact surfaces and apply tack coat to joints.
  2. Offset longitudinal joints, in successive courses, a minimum of 6 inches.
  3. Offset transverse joints, in successive courses, a minimum of 24 inches.
  4. Construct transverse joints at each point where paver ends a day's work and resumes work at a subsequent time.
  5. Construct these joints using either "bulkhead" or "papered" method in accordance with AI MS-22, for both "Ending a Lane" and "Resumption of Paving Operations."
  6. Compact joints as soon as hot-mix asphalt will bear roller weight without excessive displacement.
  7. Compact asphalt at joints to a density within two (2) percent of specified course density.

### 3.8 COMPACTION

- A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement.
1. Compact hot-mix paving with hot hand tampers or with vibratory-plate compactors in areas inaccessible to rollers.
  2. Complete compaction before mix temperature cools to 185 deg F.

- B. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge.
  - 1. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness.
  - 2. Correct laydown and rolling operations to comply with requirements.
- C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density.
  - 1. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:
  - 2. Average Density, “Superpave” Gyratory Compactor test method: 96 percent of reference laboratory density in accordance with ASTM D6927, but not less than 94 percent or greater than 100 percent.
- D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.
- E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment.
  - 1. Bevel edges while asphalt is still hot; compact thoroughly.
- F. Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh, hot-mix asphalt.
  - 1. Compact by rolling to specified density and surface smoothness.
- G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.
- H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

### 3.9 INSTALLATION TOLERANCES

- A. Pavement Thickness: Compact each course to produce thickness indicated within the following tolerances:
  - 1. Base/Binder Course: Plus or minus 1/4 inch.
  - 2. Surface Course: Plus 1/8 inch, no minus.
- B. Pavement Surface Smoothness: Compact each course to produce surface smoothness within the following tolerances as determined by using a 10-foot straightedge applied transversely or longitudinally to paved areas:
  - 1. Base/Binder Course: 1/4 inch.
  - 2. Surface Course: 1/8 inch.
  - 3. All ADA handicapped parking spaces and associated aisles:

4. Completed surface course slopes shall not exceed two percent (2.00%) in any direction.
5. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch.

### 3.10 PAVEMENT MARKINGS, ACCESSIBLE (ADA) PARKING AND SIGNAGE INSTALLATION

- A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Landscape Architect and Owner's Representative.
- B. Allow paving to age for at least fifteen (15) days before starting pavement marking.
- C. Sweep and clean surface to eliminate loose material and dust.
- D. Apply paint with mechanical equipment to produce pavement markings, of dimensions indicated, with uniform, straight edges.
  1. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of fifteen (15) mils.
- E. Install accessible (ADA) parking markings and signage as indicated, in accordance with State of Maryland and ADA regulations.

### 3.11 PARKING WHEEL STOP INSTALLATION

- A. Securely anchor wheel stops to finished pavement surface with reformed bars in each preformed vertical hole as indicated, or with hardware recommended by wheel stop manufacturer.
- B. Recess head of bar or dowel flush with top of wheel stop.

### 3.12 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined in accordance with ASTM D3549.
- C. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.
- D. In-Place Density: Testing agency will take samples of uncompacted paving mixtures and compacted pavement in accordance with ASTM D979.
  1. Reference maximum theoretical density will be determined by averaging results from four samples of hot-mix asphalt-paving mixture delivered daily to site, prepared in accordance with ASTM D2041, and compacted in accordance with job-mix specifications.
  2. In-place density of compacted pavement will be determined by testing core samples in accordance with ASTM D1188 or ASTM D2726.

- a. One core sample will be taken for every 1000 sq. yd. or less of installed pavement, with no fewer than three cores taken.
  - b. Field density of in-place compacted pavement may also be determined by nuclear method in accordance with ASTM D2950 and coordinated with ASTM D1188 or ASTM D2726.
- E. Replace and compact hot-mix asphalt where core tests were taken.
- F. Remove and replace hot-mix asphalt or install additional material as directed by the Owner with written approval, where test results or measurements indicate that it does not comply with specified requirements.

### 3.13 WASTE HANDLING

- A. General: Handle asphalt-paving waste in accordance with State and local jurisdictional requirements.

END OF SECTION 321216

## SECTION 321313 - CONCRETE PAVING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:

1. Curbs with integral gutter pans.
2. Heavy-duty concrete paving.
3. Cast-in-place concrete structural footings for the pre-fabricated pavilion.
4. Cast-in-place concrete slab-on-grade for the pre-fabricated pavilion and the cast-in-place concrete slab-on-grade for the pre-fabricated shed structure.
5. Miscellaneous cast-in-place concrete pads and footings for site furnishings.

- B. Related Requirements:

1. Section 103014 "Pre-fabricated Structures" for construction requirements of the pavilion and shed structures.
2. Section 312000 "Earth Moving" for subgrade preparation, filling and backfilling, compaction, and graded aggregate base course requirements.
3. Section 321216 "Asphalt Paving" for pavement markings, accessible (ADA) and parking signage, and wheel stops.

#### 1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash, slag cement, and other BCDPW approved pozzolans.
- B. W/C Ratio: The ratio by weight of water to cementitious materials.

#### 1.4 PRE-INSTALLATION MEETING

- A. Pre-installation Meeting: Conduct meeting at Project site.
- B. Unless written permission is pre-approved and issued prior to the Pre-installation Meeting by the Owner's Representative, the following individuals are required to attend the Pre-installation Meeting:
  1. Contractor's Superintendent.

2. Contractor's Superintendent.
  3. Concrete Paving Subcontractor.
  4. Independent testing agency responsible for alternate concrete design mixtures.
  5. Owner's Representative.
- C. Review methods and procedures related to concrete paving, including but not limited to, the following:
1. Concrete mixture designs.
  2. Quality control of concrete materials and concrete paving construction practices.
- D. Submit Meeting Notes from the Pre-Installation Meeting to all attendees, including the Owner's Representative.

### 1.5 ACTION SUBMITTALS

- A. Delegated-Design Submittal for Pavilion: For the design of the pavilion's cast-in-place concrete footings (refer to Section 103014 "Pre-fabricated Structures" for additional information), including analysis data signed and sealed by the qualified Professional Engineer, registered in the State of Maryland, responsible for its preparation.
- B. Portland Cement Concrete Mixture: For each type of BCDPW Portland Cement Concrete Mixture indicated.
1. Portland Cement Concrete Mixture Approval: Submit documentation indicating that each applicable Portland Cement Concrete Mixture complies with BCDPW Specification Section 902.10.03 "Portland Cement Concrete Mixtures".
  2. Include technical data and tested physical properties for each mixture.
  3. Alternate Design Mixtures: Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
    - a. Include certification by BCDPW that each Alternate Design Mixture complies with BCDPW Specification Section 902.10.
- C. Samples for Initial Selection: As applicable for each type of product, ingredient, or admixture requiring color selection.
1. Expansion-joint filler.

### 1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For the following:
1. Professional Engineer registered in the State of Maryland: Experience with providing delegated-design engineering services of the type indicated, including documentation that engineer is licensed in the State of Maryland and has at least 10-years of experience designing structural footings for similar installations.

2. For qualified ready-mix concrete producers, testing agency and the installer of cast-in-place concrete for site related construction.
- B. Material Certificates: For the following, from manufacturer:
1. Cementitious materials.
  2. Steel reinforcement and reinforcement accessories.
  3. Admixtures.
  4. Curing compounds.
- C. Material Test Reports: For each of the following:
1. Aggregates: Include service-record data indicating absence of deleterious expansion of concrete due to alkali-aggregate reactivity.
- D. Field quality-control reports.

### 1.7 QUALITY ASSURANCE

- A. Comply with ACI 301, BCDPW Specifications, referenced standards and publications.
1. Unless indicated otherwise, the most stringent requirement applies to materials and construction of concrete paving.
  2. If a conflict is apparent between referenced publications, bring it to the attention of the Project Civil Engineer and Testing Agency for resolution.
- B. American Concrete Institute (ACI) referenced publications.
- C. American Society for Testing & Materials (ASTM) referenced publications.
- D. Americans with Disabilities Act (ADA), 2010 ADA Standards for Accessible Design regulations, as amended to date, published by the United States Department of Justice.
- E. Concrete Reinforcing Steel Institute (CRSI) referenced publications.
- F. Baltimore County, Department of Public Works, Standard Specifications for Construction and Materials (BCDPW), latest edition as amended to date.
1. References to “Measurement and Payment” and Bid Price Adjustment provisions do not apply to Specification Section 321313.
- G. Baltimore County, Department of Public Works, Standard Details for Construction, latest edition as amended to date.
- H. Baltimore County, Department of Public Works, Division of Construction Contracts Administration, Source of Supply, latest edition, as amended to date.
- I. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Build mockups of full-thickness sections of concrete paving to demonstrate typical joints; surface finish, texture, and color; curing; and standard of workmanship.
  2. Build mockups of concrete paving in the location and of the size directed by Landscape Architect. Mockups shall include a full-size detectable warning area for sidewalks and other designated areas as applicable.
  3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
- J. National Ready Mix Concrete Association (NRMCA) referenced publications.
- K. Ready-Mix-Concrete Producer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94 and BCDPW requirements for production facilities and equipment.
1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities" (Quality Control Manual - Section 3, "Plant Certification Checklist").
- L. Testing Agency Qualifications: Qualified according to ASTM C1077 and ASTM E329 for testing indicated.
1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.

## 1.8 FIELD CONDITIONS

- A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for construction activities.
- B. Cold-Weather Concrete Placement: Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing, or low temperatures.
1. Comply with BCDPW Specifications and the following:
  2. When air temperature has fallen to or is expected to fall below 40 deg F,:
    - a. Heat water and aggregates uniformly before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F at point of placement.
    - b. Do not use frozen materials or materials containing ice or snow.
  3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless specifically approved in design mixtures.
- C. Hot-Weather Concrete Placement: Comply with BCDPW Specifications and the following when hot-weather conditions exist:
1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F at time of placement.

2. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated in total amount of mixing water.
3. Using liquid nitrogen to cool concrete is Contractor's option.
4. Cover steel reinforcement with water-soaked burlap, so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
5. Fog-spray forms, steel reinforcement, and aggregate base course immediately before placing concrete.
6. Keep aggregate base course moisture uniform without standing water, soft spots, or dry areas.

## PART 2 - PRODUCTS

2.1 Basis of Design: Products specified in PART 2 – PRODUCTS are intended to establish the “Basis of Design” for products and materials that are required for this Project.

### 2.2 FORMS

- A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, and smooth exposed surfaces.
  1. Use flexible or uniformly curved forms for curves with a radius of 100 feet or less. Do not use notched and bent forms.
- B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and that will not impair subsequent treatments of concrete surfaces.

### 2.3 STEEL REINFORCEMENT

- A. Plain-Steel Welded-Wire Reinforcement: ASTM A1064, fabricated from as-drawn steel wire into flat sheets.
- B. Deformed-Steel Welded-Wire Reinforcement: ASTM A1064, flat sheet.
- C. Reinforcing Bars: ASTM A615/A615M, Grade 60; deformed.
- D. Steel Bar Mats: ASTM A184/A184M; with ASTM A615/A615M, Grade 60 deformed bars; assembled with clips.
- E. Plain-Steel Wire: ASTM A1064, as drawn.
- F. Deformed-Steel Wire: ASTM A1064.
- G. Plastic dowel sleeves are available from proprietary sources in lieu of greasing one end of the dowel.
  1. Indicate joint-dowel sizes and lengths on Drawings.

- H. Joint Dowel Bars: ASTM A615, Grade 60 plain-steel bars.
  - 1. Cut bars true to length with ends square and free of burrs.
- I. Tie Bars: ASTM A615, Grade 60; deformed.
- J. Prefabricated speed dowel sleeves.
- K. Hook Bolts: ASTM A307, Grade A, internally and externally threaded.
  - 1. Design hook-bolt joint assembly to hold coupling against paving form and in position during concreting operations, and to permit removal without damage to concrete or hook bolt.
- L. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded-wire reinforcement, and dowels in place.
  - 1. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified, and as follows:
  - 2. Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.

## 2.4 CONCRETE MATERIALS

- A. General: In accordance with BCDPW Specification Section 902.
  - 1. Refer to Article 902.10.03 - Table 902 A for Portland Cement Concrete Mixtures.
- B. Normal-Weight Aggregates: ASTM C33, Class 4S, uniformly graded.
  - 1. Provide aggregates from a single source with documented service-record data of at least 10 years' satisfactory service in similar paving applications and service conditions using similar aggregates and cementitious materials.
  - 2. Maximum Coarse-Aggregate Size: In accordance with BCDPW Specifications.
  - 3. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- C. Air-Entraining Admixture: ASTM C260 and in accordance with BCDPW Specifications.
- D. Chemical Admixtures: In accordance with BCDPW Specifications.
  - 1. Admixtures certified by manufacturer to be compatible with other admixtures.
  - 2. Shall not contain more than 0.1 percent water-soluble chloride ions by mass of cementitious material.
  - 3. Water-Reducing Admixture: ASTM C494, Type A.
  - 4. Retarding Admixture: ASTM C494, Type B.
  - 5. Water-Reducing and Retarding Admixture: ASTM C494, Type D.
  - 6. High-Range, Water-Reducing Admixture: ASTM C494, Type F.
  - 7. High-Range, Water-Reducing and Retarding Admixture: ASTM C494, Type G.
  - 8. Plasticizing and Retarding Admixture: ASTM C1017, Type II.

- E. Water: Potable and complying with ASTM C94.

## 2.5 CURING MATERIALS

- A. General: In accordance with BCDPW Specifications.
- B. Moisture-Retaining Cover: ASTM C171, polyethylene film or white burlap-polyethylene sheet.
- C. Water: Potable.
- D. Evaporation Retarder: Waterborne, monomolecular, film forming, manufactured for application to fresh concrete, in accordance with BCDPW Specifications.

White, Waterborne, Resin Based Membrane-Forming Curing Compound: ASTM C309, Type 2, Class A or B, dissipating.

## 2.6 RELATED MATERIALS

- A. Joint Fillers:
  - 1. Asphalt-Saturated Cellulosic Fiber: ASTM D1751, asphalt-saturated cellulosic fiber in preformed strips, thicknesses as indicated.
- B. Bonding Agent: ASTM C1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.
- C. Epoxy-Bonding Adhesive: ASTM C881, two-component epoxy resin capable of humid curing and bonding to damp surfaces; of class suitable for application temperature, of grade complying with requirements, and of the following types:
  - 1. Types I and II, non-load bearing and Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.
- D. Pavement Marking, Signage and Wheel Stops
  - 1. Refer to Section 321218 “Asphalt Paving” for pavement markings, signage, and wheel stops.

## 2.6 FOOTINGS FOR SITE FURNISHINGS, FENCES, AND MISCELLANEOUS SITE CONSTRUCTION ITEMS

- A. Refer to the Drawings for concrete mix and related material requirements for site furnishing footings, fences, and miscellaneous site construction item concrete footings.

## 2.7 CONCRETE MIXTURES

- A. General: In accordance with BCDPW Specifications, Article 902.10 Portland Cement Concrete Mixtures requirements.

1. When slip-form machine placement is used, submit an appropriate design mixture and obtain laboratory test results that meet or exceed normal design mixture requirements.
- B. Portland Cement Concrete Mixtures: Normal-weight concrete in accordance with BCDPW Specifications, Section 902.10.03, Table 902 A and Table 902 B.
  1. Refer to Drawings for mixture designations.
- C. Chemical Admixtures: In accordance with BCDPW Specifications.
  1. Use water-reducing admixtures, plasticizing and retarding admixtures for placement and workability, or when required by high temperatures, low humidity, or other adverse placement conditions.

## 2.8 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to BCDPW Specifications.
  1. Furnish batch certificates for each batch discharged and used in the Work.
  2. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.
- B. On-site batching and mixing of concrete is NOT ALLOWED in lieu of ready-mixed concrete unless specifically approved in writing by the Project Landscape Architect or Project Civil Engineer.

## PART 3 - EXECUTION

3.1 GENERAL: In accordance with ACI referenced publications and BCDPW Specifications.

### 3.2 EXAMINATION

- A. Examine exposed subgrades and aggregate base surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.
- B. Proof-roll prepared subgrade below in accordance with Section 312000 "Earth Moving" to identify soft pockets and areas of excess yielding.
  1. Completely proof-roll compacted subgrade as directed by the Testing Agency. Limit vehicle speed to 3 mph.
  2. Correct subgrade with soft spots and areas of pumping or rutting as directed by the Testing Agency.
  3. Proceed with installation of graded aggregate base course and concrete paving only after unsatisfactory conditions have been corrected.

### 3.3 PREPARATION

- A. Remove loose material from surface of satisfactory compacted graded aggregate base course immediately before placing concrete.
- B. Proceed with aggregate base course installation only after unsatisfactory conditions have been corrected.

### 3.4 EDGE FORMS AND SCREED CONSTRUCTION

- A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations.
  - 1. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
- B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

### 3.5 STEEL REINFORCEMENT INSTALLATION

- A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.
- C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement.
  - 1. Maintain minimum cover to reinforcement.
- D. Install welded-wire reinforcement in lengths as long as practicable.
  - 1. Lap adjoining pieces at least one full mesh, and lace splices with wire.
  - 2. Offset laps of adjoining widths to prevent continuous laps in either direction.
- E. Install fabricated bar mats in lengths as long as practicable.
  - 1. Handle units to keep them flat and free of distortions.
  - 2. Straighten bends, kinks, and other irregularities, or replace units as required before placement.
  - 3. Set mats for a minimum 2-inch overlap of adjacent mats.
- F. Install prefabricated speed dowels in accordance with the manufacturer's instructions.

### 3.6 JOINTS

- A. Form construction, isolation-expansion, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete.

1. Construct transverse joints at right angles to centerline unless otherwise indicated.
  2. When joining existing paving, place transverse joints to align with previously placed joints unless otherwise indicated.
- B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.
1. Continue steel reinforcement across construction joints unless otherwise indicated.
  2. Do not continue reinforcement through sides of paving strips unless otherwise indicated.
  3. Provide tie bars at sides of paving strips where indicated.
  4. Butt Joints: Use bonding agent at joint locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
  5. Keyed Joints: Install preformed keyway-section forms or bulkhead forms with keys where indicated. Embed keys at least 1-1/2 inches into concrete.
- C. Isolation-Expansion Joints: Form isolation-expansion joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, fixed objects, and in other locations as indicated.
1. Locate isolation-expansion joints at intervals as indicated.
  2. If not indicated, isolation-expansion joints shall be located at a maximum interval of 20 feet on center.
  3. Furnish joint fillers in one-piece lengths.
    - a. Where more than one length is required, lace or clip joint-filler sections together, and install joint filler the full width and depth of joint, unless indicated otherwise.
    - b. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
- D. Contraction or Control Joints: Form weakened-plane contraction joints, sectioning concrete into designated areas as indicated.
1. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows:
  2. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with grooving tool to radius indicated.
    - a. Where indicated, repeat grooving of contraction joints after applying surface finishes.
    - b. If not indicated, remove grooving-tool marks after applying surface finishes.
  3. Sawed Joints: Form contraction joints with power saws equipped with appropriate abrasive or diamond-rimmed blades.
    - a. Cut 1/8-inchwide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.
  4. Doweled Joints: Install dowel bars and support assemblies at joints where indicated.

- a. Lubricate one-half of dowel length, or use approved dowel sleeves, to prevent concrete bonding to one side of joint.
- E. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to the radii indicated.
  - 1. Repeat tooling of edges after applying surface finishes.

### 3.7 CONCRETE PLACEMENT

- A. Before placing concrete, inspect and complete formwork installation, steel reinforcement, and items to be embedded or cast-in-place.
- B. Remove snow, ice, or frost from subbase surface and steel reinforcement before placing concrete.
  - 1. Do not place concrete on frozen surfaces.
- C. Moisten aggregate base course to provide a uniform dampened condition at time concrete is placed.
  - 1. Do not place concrete around manholes or other structures until they have been installed at required finish elevation and slope, and isolation-expansion joints are in place.
- D. Comply with BCDPW Specifications for measuring, mixing, transporting, and placing concrete.
- E. Do not add water to concrete during delivery or at Project site.
  - 1. Do not add water to fresh concrete after testing.
- F. Deposit and spread concrete in a continuous operation between transverse joints.
  - 1. Do not push or drag concrete into place or use vibrators to move concrete into place.
- G. Consolidate concrete in accordance with BCDPW Specifications using mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.
  - 1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator.
  - 2. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation.
  - 3. Consolidate with care to prevent dislocating reinforcement, dowels and joint devices.
- H. Screed paving surface with a straightedge and strike off.
- I. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleedwater appears on the surface.
  - 1. Do not additionally disturb concrete surfaces before beginning finishing operations.
- J. Curbs (and integral Gutters where indicated):

1. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing as indicated.
2. Use special design mixture for automatic machine placement and if color pigment batching is required.
3. Produce paving to required thickness, lines, grades, finish, and jointing.
4. Prepare subgrade and install aggregate base course of sufficient width to prevent displacement of slip-form paving machine during concrete placement operations.

### 3.8 FLOAT FINISHING

- A. General: Do not add water to concrete surfaces during finishing operations.
- B. Float Finish:
  1. Begin the second floating operation when bleedwater sheen has disappeared and concrete surface has stiffened sufficiently to permit operations.
  2. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units.
  3. Finish surfaces to true planes.
  4. Cut down high spots and fill low spots.
  5. Refloat surface immediately to uniform granular texture.
- C. Application of Surface Finishes:
  1. Refer to the Drawings for locations and types of broomed surface finishes.
  2. Medium-to-Fine-Textured Broom Finish: Use a soft-bristle broom drawn across float-finished concrete surface, perpendicular to primary flow of traffic, or as indicated, to provide a uniform, fine-line surface texture.
  3. Medium-to-Coarse-Textured Broom Finish for Dumpster Slabs, and Other Indicated Locations: Use a stiff-bristle broom drawn across float-finished concrete surface, perpendicular to primary flow of traffic, or as indicated, to provide a uniform, coarse surface texture.

### 3.9 CONCRETE CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
- B. Comply with BCDPW Specifications for cold-weather protection.
- C. Evaporation Retarder:
  1. Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations.
  2. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete but before float finishing.
- D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

- E. Curing Methods: Cure concrete by moisture-retaining-cover curing, using curing compound or a combination of these as follows:
1. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive.
  2. Immediately repair any holes or tears occurring during installation or curing period, using cover material and waterproof tape.
  3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions.
    - a. Do not use curing compound on surfaces to be covered by unit pavers or other materials set in mortar.
    - b. Recoat areas subjected to heavy rainfall within three hours after initial application.
    - c. Maintain continuity of coating, and repair damage during curing period.

### 3.10 PAVING TOLERANCES

- A. Comply with tolerances in ACI 117 and as follows:
1. Elevation: 1/8 inch.
  2. Thickness: Plus 3/8 inch, no minus.
  3. Surface: Gap below 10-foot-long; unlevelled straightedge: 1/8 inch or less.
  4. All ADA accessible route walkways and associated features: Plus 1/8 inch, no minus. Completed surface cross slopes shall not exceed two percent (2.00%).
  5. Alignment of Tie-Bar End Relative to Line Perpendicular to Paving Edge: 1/2 inch per 12 inches of tie bar.
  6. Lateral Alignment and Spacing of Dowels: 1 inch.
  7. Vertical Alignment of Dowels: 1/4 inch.
  8. Alignment of Dowel-Bar End Relative to Line Perpendicular to Paving Edge: 1/4 inch per 12 inches of dowel.
  9. Joint Spacing: As indicated.
  10. Contraction Joint Depth: Plus 1/4 inch, no minus.
  11. Joint Width: Plus 1/8 inch, no minus.

### 3.11 CONCRETE FOOTINGS FOR SITE FURNISHINGS, FENCES, AND MISCELLANEOUS SITE CONSTRUCTION ITEMS

- A. Refer to the Drawings for concrete footing requirements for site furnishings, fences, and miscellaneous site construction items.

### 3.12 PAVEMENT MARKING, PARKING WHEEL STOPS AND PARKING SIGNAGE

- A. Refer to Section 321216 “Asphalt Paving” for installation of pavement markings, wheel stops, and parking signage.

### 3.13 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Testing Services: Testing and inspecting of composite samples of fresh concrete obtained according to ASTM C172 shall be performed according to the following requirements:
  - 1. Testing Frequency: Obtain at least one composite sample for each 10 cu. yd., 100 sq. ft. or fraction thereof of each concrete mixture placed each day.
    - a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
  - 2. Slump: ASTM C143, one test at point of placement for each composite sample, but not less than one test for each pour of each concrete mixture.
    - a. Perform additional tests when concrete consistency changes.
  - 3. Air Content: ASTM C231, pressure method; one test for each composite sample, but not less than one test for each pour of each concrete mixture.
  - 4. Concrete Temperature: ASTM C1064, one test hourly when air temperature is 40 deg F and below and when it is 80 deg F and above, and one test for each composite sample.
  - 5. Compression Test Specimens: ASTM C31, cast and laboratory cure one (1) set of three (3) standard cylinder specimens for each composite sample.
  - 6. Compressive-Strength Tests: ASTM C39, test one specimen at seven (7) days and two (2) specimens at 28 days.
    - a. A compressive-strength test shall be the average compressive strength from two specimens obtained from same composite sample and tested at 28 days.
- C. Strength of each concrete mixture will be satisfactory if average of any three (3) consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
- D. Test results shall be reported in writing to Project Landscape Architect, Project Civil Engineer, and Owner's Representative, concrete producer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain:
  - 1. Project identification name and number.
  - 2. Date of concrete placement.
  - 3. Name of concrete testing and inspecting agency.
  - 4. Location of concrete batch in Work.
  - 5. Design compressive strength at 28 days.
  - 6. Concrete mixture proportions and materials.
  - 7. Compressive breaking strength.
  - 8. Type of break for both 7- and 28-day tests.
- E. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by the Project Landscape Architect, Project Civil Engineer, or Owner's Representative, but will not be used as sole basis for approval or rejection of concrete.

- F. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by the Project Landscape Architect, Project Civil Engineer, or Owner's Representative.
- G. Concrete paving will be considered defective if it does not pass tests and inspections.
- H. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
- I. Prepare and submit test and inspection reports to the Project Landscape Architect, Project Civil Engineer, or Owner's Representative.

### 3.14 REPAIR AND PROTECTION

- A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section.
  - 1. Remove work in complete sections from joint to joint unless otherwise approved by the Project Landscape Architect, Project Civil Engineer, or Owner's Representative.
- B. Drill test cores, where directed by the Landscape Architect, Project Civil Engineer, or Owner's Representative, when necessary to determine magnitude of cracks or defective areas.
  - 1. Fill drilled core holes in satisfactory paving areas with Portland cement concrete bonded to paving with epoxy adhesive.
- C. Protect concrete paving from damage.
- D. Exclude traffic from paving for at least 14 days after placement.
- E. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.
- F. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material.
- G. Sweep paving not more than two (2) days before date scheduled for Substantial Completion inspections.

END OF SECTION 321313

## SECTION 323300 - SITE FURNISHINGS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:

- 1. Bleachers.
- 2. Shelter-Pavilion.

- B. Related Requirements:

- 1. Section 32131 "Concrete Paving" for site furnishing's footings.
- 2. Section 312000 "Earth Moving" for excavation required to install cast-in-place concrete footings.
- 3. Section 321313 "Concrete Paving" for installation of related concrete walkways and slabs-on-grade.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product, including the Marine Grade 316 Stainless Steel fastener's specific size and length for each applicable surface mounted product.
- B. Samples for Verification:
  - 1. Anchor bolt, washer and fasteners (submit a representative Sample for review and approval).
- C. Schedule of Products: For each product indicated.
- D. Shop Drawings: For bleachers and shelter/pavilion.

#### 1.4 QUALITY ASSURANCE

- A. Basis of Design: Products specified in PART 2 – PRODUCTS are intended to establish the "Basis of Design" for products and materials that are required for this Project.

## 1.5 DELIVERY, STORAGE AND HANDLING

- A. Delivery: Deliver products to site in manufacturer's original, unopened packaging. Upon delivery, examine packages immediately to ensure all products are complete and undamaged.
- B. Storage: Store products in a protected, dry area in manufacturer's unopened containers and packaging.
- C. Handling: Protect product's finish from damage during handling and installation.

## PART 2 - PRODUCTS

### 2.1 BLEACHERS

- A. As indicated on the Drawings.

### 2.2 SHELTER-PAVILLIONS

- A. As indicated on the Drawings.

### 2.3 ANCHORS, FASTENERS AND GROUT

- A. Anchors, Washers and Fasteners, as applicable: Marine Grade 316 Stainless Steel Fasteners.
  - 1. Size shall be in accordance with the specific site furnishing product manufacturer's recommendations.
  - 2. Anchors and fasteners that do not meet Marine Grade 316 Stainless Steel are not acceptable.
- B. Nonshrink, Nonmetallic Grout: Premixed, factory-packaged, nonstaining, noncorrosive, non-gaseous grout, containing no gypsum material, complying with ASTM C 1107; recommended in writing by manufacturer, for exterior applications.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for proper finished grade, mounting surfaces, installation tolerances, and other conditions affecting installation of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION, GENERAL

- A. Comply with manufacturer's written installation instructions for each product unless other requirements or conditions are indicated. Perform shop and field assembly as required to complete each product's installation.
- B. Unless otherwise indicated, install site furnishings after landscaping and paving have been completed.
  - 1. Protect in-place landscaping and paving as necessary during installation of site furnishings.
- C. Install all site furnishings level and plumb in locations indicated.
- D. Site Furnishings and Other Components with Cast-In-Place Concrete Footings:
  - 1. Install in cast-in-place concrete footing in accordance with Section 033000 – Cast-in-Place Concrete and manufacturer's instructions as indicated.
  - 2. Protect portion of supports above footing from concrete splatter.
  - 3. Verify that supports are installed plumb or at designated setting angle, and are aligned at correct height and spacing.
  - 4. Provide temporary measures for supports in proper position during placement and finishing operations until concrete has sufficiently cured.
- E. Surface Mounted Site Furnishings:
  - 1. Install on finished pavement surfaces with Marine Grade 316 Stainless Steel fasteners, with the quantity of fasteners recommended by the manufacturer.
  - 2. Marine Grade 316 Stainless Steel fastener components shall be provided by the Contractor.

END OF SECTION 323300

## SECTION 329113 - SOIL PREPARATION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes preparation of Planting Mix for installation of landscape plant materials, Stormwater Management (SWM) Facilities, and for turf establishment.
  - 1. Refer to Section 329220 “Cricket Field Pitch Area Construction” for specific requirements for construction of the Cricket Field Pitch Area.
  - 2. Refer to Section 329205 “Turf Establishment for Cricket Athletic Field Area” for specific requirements to establish turf within the Cricket Athletic Field Area.
  - 3. Should there be a discrepancy between Section 329205 “Turf Establishment for Cricket Athletic Field Area”, Section 329200 “Turf and Grasses”, and Section 329113 “Soil Preparation” bring it to the attention of the Project Landscape Architect and the Owner’s Representative for resolution.
- B. Related Requirements:
  - 1. Section 311000 “Site Clearing” for stripping and stockpiling existing topsoil.
  - 2. Section 312000 “Earth Moving” for excavation, backfilling, and compaction requirements.
  - 3. Section 329200 “Turf and Grasses” for installing Planting Mix for turf establishment.
  - 4. Section 329220 “Cricket Field Pitch Area Construction” for construction of the cricket field pitch area.
  - 5. Section 329300 “Plants” for installing Planting Mix for landscape plant material.

#### 1.3 DEFINITIONS

- A. Backfill: The material used to replace, or the act of replacing, existing earth in an excavation.
- B. CEC: Cation exchange capacity.
- C. Compost: The product resulting from the controlled biological decomposition of organic material that has been sanitized through the generation of heat and stabilized to the point that it is beneficial to plant growth.
- D. Duff Layer: A surface layer of soil, typical of forested areas, that is composed primarily of decayed leaves, twigs, and detritus.
- E. Imported (Borrow) Topsoil: Satisfactory topsoil that is transported to Project site for use.

- F. **Manufactured Topsoil:** Topsoil produced on-site or off-site by blending satisfactory soils, sand, stabilized organic soil amendments, and other materials to produce satisfactory Planting Mix.
- G. **Organic Matter:** The total of organic materials in soil exclusive of undecayed plant and animal tissues, their partial decomposition products, and the soil biomass; also called "humus" or "soil organic matter."
- H. **Planting Mix:** Satisfactory natural or manufactured topsoil combined with other materials and soil amendments that have been modified in accordance with testing agency recommendations and specified requirements in order to produce a suitable Planting Mix for proper plant growth.
- I. **RCRA Metals:** Hazardous metals identified by the EPA under the Resource Conservation and Recovery Act.
- J. **Sand:** Angular, granular, inorganic silica material, ranging in size from approximately 0.425mm to 0.125mm, to be used as a component in the Planting Mix composition.
- K. **Soil Scientist:** A qualified person who evaluates and interprets soils and soil-related data for the purpose of understanding soil resources in order for soils to achieve satisfactory plant growth, but also as they affect environmental quality and as they are managed for protection of human health and the environment.
- L. **Subgrade:** Surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before Planting Mix is placed.
- M. **Subsoil:** Soil beneath the level of subgrade; soil beneath the topsoil layers of a naturally occurring soil profile, typified by less than 1% organic matter and few soil organisms.
- N. **Surface Soil:** Soil that is present at the top layer of the existing soil profile. In undisturbed areas, surface soil is typically called "topsoil" but in disturbed areas, such as urban environments, the surface soil may be subsoil.
- O. **Topsoil:** In undisturbed areas, the soil material beneath the duff layer, and above subsoil, typified by an organic matter content of between 1.5% and 10.0% and capable of sustaining vigorous plant growth.
  - 1. Satisfactory topsoil shall be free of any add-mixture of subsoil and contain no stones, lumps, clods of hard earth, slag, cinders, sticks, plants or their roots, trash, or other extraneous material.
  - 2. Satisfactory topsoil must be free of plant parts of Bermuda grass, quack grass, Johnson grass, nutsedge, poison ivy, Canada thistle, or other invasive species.

#### 1.4 PRE-INSTALLATION MEETING

- A. **Pre-installation Meeting:** Conduct meeting at Project site.
- B. Unless written permission is pre-approved and issued prior to the Pre-installation Meeting by the Owner's Representative, the following individuals are required to attend the Pre-installation Meeting:

1. Contractor's Superintendent.
  2. Landscape Subcontractor responsible for preparation of the Planting Mixes.
  3. Project Landscape Architect.
- C. Review methods and procedures related to the preparation and installation of the Planting Mixes, but not limited to the following:
1. Satisfactory topsoil analysis, including gradation.
  2. Proposed amendments, based upon topsoil analysis recommendations.
  3. Compost analysis.

## 1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
1. Include recommendations for application and use.
  2. Include test data analysis to substantiate that products comply with requirements.
  3. Include sieve analyses for soil and aggregate materials.
- B. Material Certificates: For each type of aggregate, imported (borrow) Satisfactory Topsoil, lime and fertilizer, and all other soil amendments prior to delivery to the site as follows:
- a. Manufacturer's qualified testing agency's certified analysis of standard products.
  - b. Analysis of lime and fertilizer, by a qualified testing agency, made according to AAPFCO methods for testing and labeling and according to AAPFCO's SUIP #25.
  - c. Analysis of non-standard materials by a qualified testing agency according to SSSA methods, where applicable.
- C. Lime, Fertilizer and Soil Amendments:
1. Submit two (2) copies of testing agencies certified analysis for lime, fertilizer, and soil amendments proposed for use in the Planting Mix.
  2. Certified analysis shall show the fertilizer grade, indicating the percentage (%) of each component.
  3. Certified analysis for lime shall show total minimum carbonates and minimum percentages of the material furnished that passes 100- and 200-mesh sieves.
- D. Topsoil Analysis and Certifications:
1. Topsoil Analysis Reports: Topsoil samples shall be taken for ALL topsoil proposed for use as Planting Mix, whether it is obtained from on-site or from an off-site location.
    - a. All topsoil analysis shall be performed within one (1) month of the date of installation, conducted and certified by a recognized soil testing facility, and shall contain the information specified in Articles 1.8, 1.9 and 1.10 below.
    - b. Submit two (2) copies of the topsoil analysis reports to the Architect and Landscape Architect for review and approval.
  2. On-Site Topsoil Certifications: Contractor shall submit two (2 copies) to the Landscape Architect and Architect containing specific recommendations of amendments for both on-

site and offsite imported topsoil. THE LANDSCAPE ARCHITECT’S APPROVAL OF TOPSOIL REPORTS AND CERTIFICATIONS WILL BE REQUIRED PRIOR TO PREPARATION OF PLANTING MIX.

3. Provide certifications performed by a qualified field Testing Agency for:
  - a. Organic content;
  - b. pH value;
  - c. Soluble salts content;
  - d. Classification (in accordance with the USDA Textural Triangle).
  
4. Imported Topsoil: Prior to delivery of satisfactory imported topsoil, the following information shall be submitted to the Landscape Architect and Architect for review and approval:
  - a. Organic content;
  - b. pH value;
  - c. Soluble salts content;
  - d. Classification (in accordance with the USDA Textural Triangle);
  - e. Source and location of the imported topsoil;
  - f. Certified copies of the imported topsoil’s test results;
  - g. Two (2) one-pound representative samples (in bags) of the imported topsoil.
  
5. Manufactured Topsoil: Prior to delivery of satisfactory manufactured topsoil, the following information shall be submitted to the Landscape Architect and Architect for review and approval if proposed for use as a Planting Mix component:
  - a. Organic content;
  - b. pH value;
  - c. Soluble salts content;
  - d. Classification (in accordance with the USDA Textural Triangle);Source and location of the manufactured topsoil components;
  - e. Gradation and sieve analysis of the manufactured topsoil;
  - f. Certified copies of the manufactured topsoil test results
  - g. Two (2) one-pound representative samples (in bags) of the manufactured topsoil.
  
6. On-site Subsoil, if proposed for use as a Planting Mix component:
  - a. Organic content;
  - b. pH value;
  - c. Soluble salts content;
  - d. Classification (in accordance with the USDA Textural Triangle);Gradation and sieve analysis of the on-site subsoil;
  - e. Certified copies of the on-site subsoil’s test results
  - f. Two (2) one-pound representative samples (in bags) of the on-site subsoil.

## 1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For each Testing Agency responsible for performing tests and analyses.

- B. Pre-construction Test Reports: For pre-construction soil analyses specified in Articles 1.8, 1.9, and 1.10 below.
- C. Field quality-control test reports (submit to Landscape Architect and Architect).

#### 1.7 QUALITY ASSURANCE

- A. Association of American Plant Food Control Officials (AAPFCO) referenced standards and publications as amended to date.
- B. American Association of State Highway and Transportation Officials (AASHTO) referenced standards and publications as amended to date.
- C. American Society for Testing and Materials (ASTM) referenced standards and applicable publications as amended to date.
- D. United States Environmental Protection Agency (EPA) referenced standards and applicable publications as amended to date.
- E. Maryland Department of Transportation, State Highway Administration, Office of Materials Technology (MDOT) referenced standards and publications, as amended to date.
- F. Maryland Department of Transportation, State Highway Administration, Standard Specifications for Construction and Materials (MDSHA), July 2024, with current Special Provisions, as amended to date.
  - 1. References to “Measurement and Payment” and “Price Adjustment” provisions do not apply to specification Section 329113.
- G. North American Proficiency Testing Program (NAPT) referenced and applicable publications as amended to date.
- H. Soil Science Society of America (SSSA) referenced standards and applicable publications as amended to date.
- I. U.S. Composting Council (USCC) referenced standards and applicable publications as amended to date.
- J. United States Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS) referenced standards and applicable publications as amended to date.
- K. Testing Agency Qualifications: An independent, state-operated, or university-operated laboratory; experienced in soil science, soil testing, and plant nutrition; with the experience and capability to conduct the testing indicated; and that specializes in types of tests to be performed.
  - 1. Multiple Laboratories: At the Contractor's option, work may be divided among one or more qualified testing laboratories specializing in physical testing, chemical testing, and fertility testing.

## 1.8 PRE-CONSTRUCTION TESTING – GENERAL

- A. All pre-construction testing and analyses shall be performed and submitted for review and approval in accordance with Article 1.5 “ACTION SUBMITTALS” above and Article 1.9 “SAMPLING REQUIREMENTS” below.
- B. Pre-construction Testing Service: Engage a qualified testing agency to perform pre-construction analyses of existing on-site topsoil, on-site subsoil, imported topsoil, manufactured topsoil, and organic compost proposed for use as a Planting Mix component.
  - 1. Notify Landscape Architect and Architect at least seven (7) days in advance of the dates and times when laboratory samples will be taken.
- C. Pre-construction Analyses of Topsoil, Subsoil, and Organic Compost: For each type and source proposed for use as a Planting Mix component.
  - 1. Testing agency shall identify and label samples and test reports according to sample collection and labeling requirements.
  - 2. For Bioretention Soil Mix, comply with approval and certification requirements in accordance with the approved Stormwater Management (SWM) Drawings.

## 1.9 SAMPLING REQUIREMENTS

- A. Soil Samples Collection and Labeling:
  - 1. Samples shall be taken and labeled by a State of Maryland certified, licensed, or registered Testing Agency.
  - 2. Number and Location Samples: Minimum of three (3) representative soil samples, at varied locations for each soil to be used or amended for planting and turf establishment purposes.
  - 3. Procedures and Depth of Samples: According to USDA-NRCS's "Field Book for Describing and Sampling Soils."
  - 4. Labeling: Label each sample taken on-site with the date, location keyed to the project site plan or other appropriate Drawing, visual soil condition, and sampling depth.
- B. Organic Compost Samples Collection and Labeling:
  - 1. Samples shall be taken and labeled by a State of Maryland certified, licensed, or registered Soil Scientist under the direction of the Testing Agency.
  - 2. Number and Location Samples: Minimum of three (3) representative organic compost samples, taken from the supplier's location, proposed to be used for preparing Planting Mix's composition.
  - 3. Labeling: Label each organic compost sample taken at the supplier's location with the sample #, date, name, address, and phone number of the supplier.

## 1.10 TESTING REQUIREMENTS

- A. Physical Testing:

1. Soil Texture: Soil-particle, size-distribution analysis by one of the following methods according to SSSA's "Methods of Soil Analysis - Part 1-Physical and Mineralogical Methods":
    - a. Sieving Method: Report sand-gradation percentages for very coarse, coarse, medium, fine, and very fine sand; and fragment-gradation (gravel) percentages for fine, medium, and coarse fragments; according to USDA sand and fragment sizes.
    - b. Hydrometer Method: report percentages of sand, silt, and clay.
  2. Total Porosity: Calculate using particle density and bulk density according to SSSA's "Methods of Soil Analysis - Part 1-Physical and Mineralogical Methods."
  3. Water Retention: According to SSSA's "Methods of Soil Analysis - Part 1-Physical and Mineralogical Methods."
  4. Saturated Hydraulic Conductivity: According to SSSA's "Methods of Soil Analysis - Part 1-Physical and Mineralogical Methods"; at 85% compaction according to ASTM D698 (Standard Proctor).
- B. Chemical Testing:
1. CEC: Analysis by sodium saturation at pH 7 according to SSSA's "Methods of Soil Analysis - Part 3- Chemical Methods."
  2. Clay Mineralogy: Analysis and estimated percentage of expandable clay minerals using CEC by ammonium saturation at pH 7 according to SSSA's "Methods of Soil Analysis - Part 1- Physical and Mineralogical Methods."
  3. Metals Hazardous to Human Health: Test for presence and quantities of RCRA metals including aluminum, arsenic, barium, copper, cadmium, chromium, cobalt, lead, lithium, and vanadium. If RCRA metals are present, include recommendations for corrective action.
  4. Phytotoxicity: Test for plant-available concentrations of phytotoxic minerals including aluminum, arsenic, barium, cadmium, chlorides, chromium, cobalt, copper, lead, lithium, mercury, nickel, selenium, silver, sodium, strontium, tin, titanium, vanadium, and zinc.
- C. Fertility Testing: Soil-fertility analysis according to standard laboratory protocol of SSSA, NAPT NEC-67, including the following:
1. Percentage of organic matter.
  2. CEC, calcium percent of CEC, and magnesium percent of CEC.
  3. Soil reaction (acidity/alkalinity pH value).
  4. Buffered acidity or alkalinity.
  5. Nitrogen ppm.
  6. Phosphorus ppm.
  7. Potash.
  8. Potassium ppm.
  9. Manganese ppm.
  10. Manganese availability ppm.
  11. Zinc ppm.
  12. Zinc availability ppm.
  13. Copper ppm.
  14. Sodium ppm and sodium absorption ratio.
  15. Soluble-salts ppm.

16. Presence and quantities of problem materials including salts and minerals cited in the standard protocol. If such problem materials are present, provide additional recommendations for corrective action.
  17. Other deleterious materials, including their characteristics and content of each.
- D. Organic-Matter Content of Topsoil: Analysis using loss-by-ignition method according to SSSA's "Methods of Soil Analysis - Part 3- Chemical Methods."
- E. Recommendations: Based on the test results, provide recommendations for soil treatments and soil amendments that will be incorporated in order to produce satisfactory Planting Mix:
1. Planting Mix shall be used as the proper medium in order to produce healthy, viable plants and turf for this Project.
  2. Include the necessary recommendations for nitrogen, phosphorous, potassium fertilization, treatments, amendments, and micronutrients.
  3. Fertilizers and Soil Amendment Rates: Provide fertilizer recommendations in pounds per 1000 square feet (lbs./S.F.).
  4. Soil Reaction: Provide the recommended liming rates for raising the pH or sulfur for lowering the pH according to the buffered acidity or buffered alkalinity in pounds per 1000 square feet (lbs./S.F.).
- F. Bioretention Soil Mix shall be sampled and tested according to the requirements of MDSHA Specifications Article 920.01.05 and the approved SWM Drawings.

#### 1.11 DELIVERY, STORAGE, AND HANDLING

- A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and compliance with state and Federal laws if applicable.
- B. Bulk Materials:
1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas, plants or plant beds.
  2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways in accordance with the approved Erosion and Sediment Control (ESC) Drawings.
  3. Do not move or handle materials when they are wet or frozen.
  4. Accompany each delivery of bulk materials with required certification and invoices.
- C. Bioretention Soil Mix (BSM):
1. Store under tarp or in shed so stockpile is protected from wind and weather.
  2. BSM that is stored for six (6) months or longer shall be resampled, retested, and reapproved before utilization on this Project.
  3. Certified in accordance with the approved Stormwater Management (SWM) Drawings.

## PART 2 - PRODUCTS

### SOIL PREPARATION

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## 2.1 BASE SOIL FOR BIORETENTION SOIL MIX

- A. Comply with MDSHA Specifications Article 920.01.05 and in accordance with the approved Stormwater Management (SWM) Drawings and as supplemented with more stringent requirements herein.

## 2.2 PLANTING MIX - SPECIFIED BY COMPOSITION

- A. General: Soil amendments, fertilizers, and rates of application specified in this specification Article are guidelines that may need to be revised based on testing agency's recommendations after pre-construction soil testing and analyses has been performed.
- B. Topsoil: Topsoil shall comply with the following requirements:
  - 1. Topsoil for Turf Establishment
    - a. The minimum organic matter content of the amended topsoil shall be 5%;
    - b. Topsoil shall have a pH from 6.0 to 7.0;
    - c. Topsoil shall not have soluble salts greater than 500 ppm;
    - d. Topsoil shall be classified as “Sandy Loam” in accordance with the USDA Textural Triangle.
  - 2. Topsoil for Planting Mix
    - a. The minimum organic matter content of the unamended topsoil shall be 2%;
    - b. Topsoil shall have a pH from 6.0 to 7.0;
    - c. Topsoil shall not have soluble salts greater than 500 ppm;
    - d. Topsoil shall be classified as “Sandy Loam” in accordance with the USDA Textural Triangle.
- C. Planting Mix for Landscape Plant Material:
  - 1. Satisfactory excavated on-site topsoil, approved excavated on-site satisfactory subsoil, satisfactory imported topsoil, manufactured topsoil, or an approved combination of these materials that has been modified in accordance with Testing Agency recommendations for soil amendments and fertilizers in order to produce a suitable Planting Mix for proper plant growth.
  - 2. Blend satisfactory topsoil, manufactured soil, and soil amendments in the following ratios to produce Planting Mix for landscape plant materials:
    - a. Ratio of Loose Compost to Topsoil: 1:3 by volume.
    - b. Ratio of Loose Topsoil: 1:3 by volume.
    - c. Ratio of Loose Excavated Subsoil: 1:3 by volume.
- D. Planting Mix for Turf Establishment: Satisfactory existing on-site topsoil and satisfactory imported topsoil that has been modified in accordance with testing agency recommendations with soil amendments and fertilizers in order to produce a suitable Planting Mix for proper turf establishment.

1. Blend satisfactory topsoil and soil amendments to produce Planting Mix for turf establishment.
- E. Bioretention Soil Mix (BSM)
1. Shall comply with MDSHA Specifications Article 920.01.05 and in accordance with the approved Stormwater Management (SWM) Drawings.

### 2.3 INORGANIC SOIL AMENDMENTS

- A. Agricultural Gypsum: Minimum 90% calcium sulfate, finely ground with 90% passing through a No. 50 sieve.
- B. Iron Sulfate: Granulated ferrous sulfate containing a minimum of 20% iron and 10% sulfur.
- C. Lime: ASTM C602, agricultural liming material containing a minimum of 80% calcium carbonate equivalent and as follows:
1. Class: T, with a minimum of 99% passing through a No. 8 sieve and a minimum of 75% passing through a No. 60 sieve.
  2. Class: O, with a minimum of 95% passing through a No. 8 sieve and a minimum of 55% passing through a No. 60 sieve.
- D. Sulfur: Granular, biodegradable, and containing a minimum of 90% elemental sulfur, with a minimum of 99% passing a No. 6 sieve and a maximum of 10% passing a No. 40 sieve.
- E. Sharp Sand: In accordance with ASTM C33 for Fine Aggregate, and as specified herein:
1. Sharp Sand shall be washed angular silica sand.
  2. Sharp Sand shall include less than 1% by weight of clay or silt size particles, and less than 5% by weight of any combination of diabase, greystone, calcareous or dolomitic sand.

### 2.4 ORGANIC SOIL AMENDMENTS

- A. Compost: Shall be Type B Compost in accordance with MDSHA Section 920.02.05 (b), and shall be obtained from an approved supplier noted in MDOT's "List of Qualified Producers/Manufacturers". Compost shall be well-composted, stable, and weed-free organic matter, bearing USCC's "Seal of Testing Assurance" and as follows:
1. Feedstock: Limited to leaves.
  2. Reaction: pH of 5.5 to 8.
  3. Soluble-Salt Concentration: Less than 4dS/m.
  4. Moisture Content: 35 to 55% by weight
  5. Organic Matter Content: 50 to 60% of dry weight, average.
  6. Particle Size: Minimum of 98% passing through a 2-inch sieve.
- B. Fine Bark: Shall be bark from harvesting healthy hardwood trees, milled and screened to a uniform particle size of 2-inches or less.

1. Fine Bark shall be composted, aged for at least six (6) months, free from sawdust, and foreign materials harmful to healthy plant growth.

## 2.5 FERTILIZERS

- A. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50% water-insoluble nitrogen, phosphorus, and potassium in the following composition:
  1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified Testing Agency.

## PART 3 - EXECUTION

### 3.1 GENERAL

- A. Install Planting Mix in accordance with the requirements of Specification Section 329200 “Turf and Grasses” and Section 329300 “Plants.”
- B. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in Planting Mix and surrounding soils.
- C. Proceed with placement after all unsatisfactory conditions have been corrected.

### 3.2 PREPARATION OF SOIL PRIOR TO AMENDMENT

- A. Excavation: Excavate and stockpile satisfactory soils. Cover and protect until amended.
- B. Unacceptable Materials: Soil with concrete slurry or washings, concrete layers or chunks, cement, plaster, building debris, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, acid, and all materials that are harmful to plant growth.
- C. Unsuitable Materials: Soil exceeding 8%, by dry weight, of stones, roots, plants, sod, clay lumps, and pockets of coarse sand.
- D. Screening: Mechanically screen unamended soil through a 3/4-inch sieve to remove materials larger than 3/4-inch in size.

### 3.3 MIXING AND INSTALLATION OF PLANTING MIX

- A. General: Mix satisfactory on-site and borrow soils with amendments in designated on-site location, approved by the Landscape Architect or Owner’s Representative, as required to prepare Planting Mix for installation of plants and for turf establishment. Do not apply materials or till if soils or subgrade is frozen, muddy, or excessively wet.

1. To facilitate the proper installation of the Planting Mix, immediately prior to installation, mechanically rescreen the mix to break up consolidated clumps of the material to the specified size.
  2. Do not mix or apply Planting Mix materials, or till subgrade, if frozen, muddy, or excessively wet.
  3. Minimum Depth of Planting Mix for turf areas shall be four (4) inches or as indicated.
  4. Minimum Depth of Planting Mix for trees and shrubs as indicated.
  5. Minimum Depth of Planting Mix for Groundcovers and all other landscape plants shall be twelve (12) inches.
  6. Depth of Planting Mix for Stormwater Management Bioretention Facilities: In accordance with the approved Stormwater Management (SWM) Drawings.
- B. Subgrade Preparation: Till subgrade to a minimum depth of four (4) inches. Remove stones larger than 3/4-inch in any dimension, plus sticks, roots, rubbish, and other extraneous matter. Legally dispose of off Owner's property.
- C. Spread Planting Mix to depth as indicated, but not less than required to meet finish grades. Do not spread if Planting Mix or subgrade is frozen, muddy, or excessively wet.
1. Lifts: Install Planting Mix in lifts not exceeding four (4) inches in loose depth for all plant material, and four (4) inches in loose depth for turf establishment.
- D. Compaction:
1. Landscape Plants: Hand-tamp each lift of Planting Mix to consolidate the mix around each plant to minimize settlement and air pockets. Compaction by mechanized equipment shall not be allowed.
  2. Turf Establishment: Compact each lift of Planting Mix to within 75 to 82% of maximum dry density in accordance with ASTM D698 (Standard Proctor).
- E. Finish Grading:
1. Completed Planting Mix shall have a smooth, uniform surface finish grade.
  2. Lightly roll and rake to remove ridges, and fill depressions as necessary to meet proposed finish grades.

### 3.4 INSTALLING BIORETENTION SOIL MIX (BSM)

- A. Contractor shall take care to minimize compaction of both the subgrade of SWM Bioretention Facilities and installation of the required BSM.
- B. Confirm that required underdrains, stone, and geotextile have been properly installed and inspected in accordance with the Drawings and Specifications prior to placing bioretention soil mix.
- C. Place BSM in lifts of twelve (12) to eighteen (18) inches to meet proposed finish grade and elevations in accordance with the approved Stormwater Management (SWM) Drawings.

- D. Do not use heavy equipment within the SWM Bioretention Facilities. Heavy equipment may be operated around the perimeter of the facilities in order to install stone, underdrains, sand, BSM, plants, and mulch. Rough and finish grade BSM materials by hand raking and tamping.

### 3.5 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform all tests and inspections performed during construction operations.
- B. Prepare and submit test reports.
- C. Label each sample and test report with the date, location keyed to the applicable drawing, the visibility conditions, when sample and test was taken, and sampling depth.
- D. Contractor shall perform regular inspections and documentation at the following specified stages of construction in accordance with the following:
  - 1. Excavations to subgrade.
  - 2. Placement and backfill of underdrain system, if applicable.
  - 3. Placement of geotextiles and all filter media for SWM Facilities.
  - 4. Monitoring construction of all SWM Facilities for preparation and submission of “As-Built” documents and reports.

### 3.6 PROTECTION

- A. Protect areas of completed installation from additional compaction, disturbance, and contamination. Prohibit the following practices within these areas except as required to perform planting operations:
  - 1. Storage of construction materials, debris, or excavated material.
  - 2. Parking vehicles or equipment.
  - 3. Vehicle traffic.
  - 4. Foot traffic.
  - 5. Erection of sheds or structures.
  - 6. Impoundment of water.
  - 7. Excavation and other disturbances, unless otherwise approved.
- B. For areas that have been previously over-compacted, disturbed, or contaminated by foreign or deleterious materials or liquids:
  - 1. Remove contamination and contaminated Planting Mix as applicable.
  - 2. Restore subgrades in accordance with the requirements of Section 312000 “Earth Moving” and as directed by the Testing Agency.
  - 3. Correct contaminated and improperly prepared subgrades as required.
  - 4. Replace contaminated Planting Mix with satisfactory Planting Mix.

### 3.7 CLEANUP AND REMOVAL OF DEBRIS AND EXCESS MATERIALS

- A. Protect areas with installed Planting Mix from contamination. Keep adjacent paving and construction clean and work area in orderly condition.
- B. Remove surplus Planting Mix and waste materials, including excess subsoil, unsuitable materials, trash, and debris, and legally dispose of them off of the Owner's property.
  - 1. Excess topsoil and Planting Mix shall be removed from the site unless otherwise directed in writing by Owner.

END OF SECTION 329113

SECTION 329200 - TURF AND GRASSES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Hydroseeding and mulching General Turf Seed Mix areas.
2. Hydroseeding and mulching Deer Resistant Meadow Seed Mix areas.
3. Erosion-control material(s).
4. Turf renovation areas determined by the Owner's Representative.
5. Maintenance of all turf areas.

B. Related Requirements:

1. Section 329113 "Soil Preparation" for preparation of Planting Mixes and testing procedures.
2. Section 329205 "Turf Establishment for Cricket Athletic Field Area" specifically for turf establishment requirements within the Cricket Athletic Field area.
3. Section 329220 "Cricket Field Pitch Area Construction" for the cricket field area.
4. Section 329300 "Plants" for trees, shrubs, ground covers, and plants.

1.3 DEFINITIONS

- A. Finish Grade: Elevation of finished surface of Planting Mix.
- B. General Turf Seed Mix: Specially formulated grass seed mix for permanent seeding of areas not designated for the Meadow Seed Mix.
- C. Deer Resistant Meadow Seed Mix: Specially formulated low growing wildflower and grass seed mix for permanent turf establishment on designated slope areas.
- D. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides.
  1. Pesticides also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.
- E. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people.

1. Pests include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.
- F. Planting Mix: Existing, on-site topsoil and imported topsoil that has been modified with soil amendments and fertilizers to produce a soil mixture best for plant growth.
1. Refer to Section 329113 "Soil Preparation" for Planting Mix requirements.
- G. Subgrade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before Planting Mix is placed.

#### 1.4 PRE-INSTALLATION MEETING

- A. Pre-installation Meeting: Conduct meeting at Project site.
- B. Unless written permission is pre-approved and issued prior to the Pre-installation Meeting by the Owner's Representative, the following individuals are required to attend the Pre-installation Meeting:
1. Contractor's Superintendent.
  2. Landscape Subcontractor responsible for establishment of permanent turf.
  3. Excavation Subcontractor.
- C. Review methods and procedures related to the establishment of permanent turf, including but not limited to the following:
1. Subgrade preparation and proposed equipment necessary to achieve required grading and compaction requirements.
  2. Materials and products approved for permanent turf establishment.
  3. Application means, methods, and equipment proposed to be used to establish General Turf areas,
  4. Application means, methods, and equipment proposed to be used to establish Deer Resistant Meadow Seed Mix areas.
  5. Turf maintenance means, methods and frequency necessary to achieve satisfactory turf in each area.
- D. Submit Meeting Notes from the Pre-Installation Meeting to all attendees, including the Owner's Representative.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For landscape Installer.
- B. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture, stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed.
1. The year of production and associated date of packaging shall be no older than 1 (one) year from the date of installation on the Project.

2. Certification of each seed type in the General Turf Seed Mix, including identification of source and name and telephone number of supplier.
- C. Certification of Meadow Seed Mix: From Deer Resistant Meadow Seed Mix vendor for each species in the mixture, stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed.
1. Include the year of production and date of packaging
  2. Certification of each seed type in the Deer Resistant Meadow Seed Mix, including identification of source and name and telephone number of supplier. Retain subparagraph below for turfgrass sod.
- D. Product Certificates: For fertilizers, mulch, and erosion control products, from manufacturer.
- E. Pesticides and Herbicides: Product label and manufacturer's application instructions specific to Project.

#### 1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: Recommended procedures to be established by Owner for maintenance of each designated turf area during a calendar year.
1. Submit before expiration of required maintenance periods.

#### 1.7 QUALITY ASSURANCE

- A. State of Maryland, Department of Agriculture (MDA), Office of Plant Industries and Pest Management, and MDA's Turf and Seed Section's regulations.
- B. Turfgrass Technical Update Bulletin (TT-77) referenced herein, latest edition, published by the University of Maryland, Department of Natural Resource Science and Landscape Architecture.
- C. Association of Official Seed Analysts' (AOSA) referenced publications.
- D. Installer Qualifications: A qualified landscape installer whose work has resulted in successful turf establishment.
1. Professional Membership: Installer shall be a member in good standing of either the Professional Landcare Network or the American Nursery and Landscape Association.
  2. Experience: Three years' experience in turf installation.
  3. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
  4. Personnel Certifications: Installer's field supervisor shall have certification in one of the following categories from the Professional Landcare Network:
    - a. Landscape Industry Certified Technician - Exterior.
    - b. Landscape Industry Certified Lawncare Technician.
  5. Pesticide Applicator: State licensed, commercial.

## 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws, as applicable.
- B. Bulk Materials:
  - 1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
  - 2. Provide erosion-control measures to prevent erosion or displacement of bulk materials; discharge of soil-bearing water runoff; and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
  - 3. Accompany each delivery of bulk materials with appropriate certificates.

## 1.9 FIELD CONDITIONS

- A. Planting Restrictions for General Turf Areas: Plant when temperature is above 32 degrees Fahrenheit and the soil is not frozen, during one of the following periods.
  - 1. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of Substantial Completion.
  - 2. Spring Planting Season: March 1<sup>st</sup> through May 15<sup>th</sup>.
  - 3. Fall Planting Season: August 15<sup>th</sup> through October 15<sup>th</sup>.
- B. Planting Restrictions for Deer Resistant Meadow Seed Mix Areas: Plant when temperature is above 32 degrees Fahrenheit and the Planting Mix is not frozen, during the following period.
  - 1. Spring Planting: March 1<sup>st</sup> – May 15<sup>th</sup>.
  - 2. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of Substantial Completion
- C. Extensions beyond the Planting Seasons indicated above may be approved by the Project Landscape Architect, depending upon weather conditions for the period in question.
  - 1. Any planting outside of the specified dates shall be solely at the Contractor's risk and shall not be subject to compensation until satisfactory stabilization has been accomplished in accordance with the Specifications.
- D. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained.
  - 1. Apply products during favorable weather conditions according to manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 SEED MIX FOR GENERAL TURF AREAS

- A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Rules for Testing Seeds" for purity and germination tolerances.
- B. Seed shall be packed 50 lbs. net weight and packed in clean, poly-woven bags, tightly woven to prevent leaking and contamination.
- C. Each container or bag shall have an accurate analysis tag and certification tag permanently affixed to it.
- D. All seed lots to be used in this mixture shall have been pretested by the Maryland Seed Laboratory to insure compliance with the Specifications.
- E. Seed Species:
  - 1. Quality: Seed of grass species as listed below for solar exposure, with not less than 85 percent germination, not less than 98 percent pure seed, and not more than 0.5 percent weed seed.
  - 2. Turf-Type Tall Fescue Seed shall consist of a three-way blend (34%, 33%, and 33%) of Tall Fescue 'Proven' cultivars noted in the "Recommended Turfgrass Cultivars for Certified Sod Production and Seed Mixtures in Maryland" (Turfgrass Technical Update TT-77), latest edition, published by the University of Maryland, Department of Natural Resource Science and Landscape Architecture.
  - 3. Kentucky Bluegrass shall be from the Kentucky Bluegrass Varieties noted in the "Recommended Turfgrass Cultivars for Certified Sod Production and Seed Mixtures in Maryland" (Turfgrass Technical Update TT-77), latest edition, published by the University of Maryland, Department of Natural Resource Science and Landscape Architecture.

**Variety of Certified Tall Fescue and Variety of Kentucky Bluegrass**

Purity	Germination	Other Crop	Weed Seed	Weeds
Minimum	Minimum	Maximum*	Maximum**	Noxious***
98%	85%	0.1%	0.1%	None

\*Must be free of ryegrass, timothy, orchardgrass, bentgrass, Canada bluegrass, clover, or any other contaminants that will become unsightly and uncontrollable.

\*\*Must be free of dock, cheat, chess, chickweed, crabgrass, plantain, and black magic.

\*\*\*Must be free of all Maryland prohibited and restricted noxious weeds as listed in the Maryland Department of the Environment 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control, as amended to date.

- F. General Turf Seed Mixes:
  - 1. The below seed mixes supersede those mixes shown on the Erosion and Sediment Control Plans in the Drawings.

**Permanent Turfgrass Seed Mix**

<u>Seed Type</u>	<u>lbs/ac.</u>	<u>lbs/1000 sf</u>	<u>% of mix</u>
Turf Type Tall Fescue (Three-Way Blend)	285	6.5	95%
Kentucky Bluegrass	15	0.34	5%
	300	6.84	100%

\*See Article 2.1.E.2 above for requirements of Turf Type Tall Fescue (Three-Way Blend)

2.2 SEED MIX FOR DEER RESISTANT MEADOW AREAS

- A. Deer Resistant Meadow Seed Mix (ERNMX-155) shall be prepared by the following producer, or approved equal:

Ernst Conservation Seeds  
8884 Mercer Pike  
Meadville, PA 16335  
Phone: (800) 873-3321      Website: [www.ernstseed.com](http://www.ernstseed.com)

2.3 FERTILIZERS

- A. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent (50%) water-insoluble nitrogen, phosphorus, and potassium in the following composition:
1. Composition for General Turf Areas: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory, unless otherwise specified herein.
  2. Composition and application rate of fertilizer for Deer Resistant Meadow Seed Mix areas shall be as recommended by Ernst Conservation Seeds.

2.3 MULCHES

- A. Fiber Mulch: Biodegradable, dyed-wood, cellulose-fiber mulch; nontoxic and free of plant-growth or germination inhibitors; with a maximum moisture content of 15 percent and a pH range of 4.5 to 6.5.
- B. Non-asphaltic Tackifier: Colloidal tackifier recommended by fiber-mulch manufacturer for slurry application; nontoxic and free of plant-growth or germination inhibitors.

2.4 PESTICIDES

- A. General: Pesticide, registered and approved by the EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application.
1. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.

- B. Pre-Emergent Herbicide (Selective and Nonselective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.
- C. Post-Emergent Herbicide (Selective and Nonselective): Effective for controlling weed growth that has already germinated.

## 2.5 EROSION-CONTROL MATERIALS

- A. Refer to Drawings for location of erosion control materials.
- B. Erosion-Control Blankets: Biodegradable wood excelsior, straw, or coconut-fiber mat enclosed in a photodegradable plastic mesh.
  - 1. Include manufacturer's recommended steel wire staples, 6 inches long.
- C. Erosion-Control Fiber Mesh: Biodegradable burlap or spun-coir mesh, a minimum of 0.92 lb/sq. yd., with 50 to 65 percent open area.
  - 1. Include manufacturer's recommended steel wire staples, 6 inches long.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine areas to be planted for compliance with requirements and other conditions affecting installation and performance of the Work.
  - 1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the Planting Mix and contamination as directed by Project Landscape Architect and replace with new Planting Mix.

### 3.2 PREPARATION

- A. Protect structures; utilities; sidewalks; pavements; and other facilities, trees, shrubs, and plantings from damage caused by planting operations.
  - 1. Protect grade stakes set by others until directed to remove them.
- B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

- C. Prepare planting area for Planting Mix placement in accordance with Section 329113 "Soil Preparation."
- D. Placing Planting Mix: Place Planting Mix over exposed subgrade to a minimum depth of four-inches (4").
- E. If Planting Mix is dry, moisten as necessary.
  - 1. Water thoroughly and allow surface to dry before planting.
  - 2. Do not create muddy or excessively wet Planting Mix.
- F. Before planting, obtain Project Landscape Architect's or Owner's Representative's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

### 3.3 INSTALLATION OF EROSION-CONTROL MATERIALS

- A. Prepare designated areas to receive erosion-control materials indicated on the Drawings in accordance with the "Preparation" Article above and the erosion-control material manufacturer's recommendations.
- B. For erosion-control blanket or mesh, install from top of slope, working downward, and as recommended by material manufacturer for site conditions.
  - 1. Fasten as recommended by blanket or mesh manufacturer.

### 3.4 GENERAL TURF AREAS HYDROSEEDING AND MULCHING

- A. No seeding shall be performed during windy weather, when the ground is wet or otherwise untillable.
- B. Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
- C. Uniformly moisten excessively dry Planting Mix that is unworkable to perform hydroseeding and mulching operations
- D. Hydroseeding: Mix specified seed, commercial fertilizer, and fiber mulch in water, using equipment specifically designed for hydroseeding application.
  - 1. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.
  - 2. Mix slurry with fiber-mulch manufacturer's recommended non-asphaltic tackifier.
  - 3. Spray-apply slurry uniformly to all areas to be hydroseeded in a one-step process.
  - 4. Apply slurry at a rate so that mulch component is deposited at not less than 1500-lb/acre dry weight, and seed component is deposited at not less than the specified seed-sowing rate.

## 3.5 DEER RESISTANT MEADOW MIX HYDROSEEDING AND MULCHING

- A. Obtain the Owner Representative's or Landscape Architect's acceptance of finish grading prior to seeding and mulching the Deer Resistant Meadow Seed Mix. Restore proposed planting areas with Planting Mix if eroded or otherwise disturbed after finish grading.
- B. Prepare all proposed Deer Resistant Meadow Seed Mix seeding areas for installation of Planting Mix in accordance with Section 329113 "Soil Preparation".
- C. Placing Planting Mix: Place Planting Mix to a minimum depth of 4" over prepared subgrade.
- D. The seed bed depth preparation shall be in accordance with Ernst Conservation Seed's recommendations for the Deer Resistant Meadow Seed Mix.
- E. If Planting Mix is dry, moisten as necessary. Water thoroughly and allow surface to dry before planting. Do not create and place muddy Planting Mix.
- F. Apply Deer Resistant Meadow Seed Mix at the rate recommended by Ernst Conservation Seeds.
- G. Install in accordance with the producer's specific recommendations for hydroseeding and mulching.
- H. Install erosion control blankets after completion of Deer Resistant Meadow Seed Mix application.

## 3.6 TURF RENOVATION

- A. Renovate existing turf where indicated.
- B. Renovate turf damaged by Contractor's operations, such as storage of materials or equipment and movement of vehicles.
  - 1. Reestablish turf where settlement or washouts occur or where minor regrading is required.
  - 2. Install new Planting Mix as required.
- C. Remove sod and vegetation from diseased or unsatisfactory turf areas; do not bury in soil.
- D. Remove topsoil containing foreign materials, such as oil drippings, fuel spills, stones, gravel, and other construction materials resulting from Contractor's operations, and replace with new Planting Mix.
- E. Mow, dethatch, core aerate, and rake existing turf.
- F. Remove weeds before seeding.
  - 1. Where weeds are extensive, apply selective herbicides as required.
  - 2. Do not use pre-emergence herbicides.
- G. Remove waste and foreign materials, including weeds, soil cores, grass, vegetation, and turf, and legally dispose of them off Owner's property.
- H. Roto-till stripped, bare, and compacted areas thoroughly to a soil depth of 4 inches.

- I. Apply soil amendments and initial fertilizer required for establishing new turf and mix thoroughly into top 4 inches of existing topsoil.
  - 1. Install Planting Mix to fill low spots and meet finish grades.
  - 2. Soil Amendment(s): In accordance with requirements of Section 32 91 13 "Soil Preparation" after specific soil testing in renovation areas has identified amendment requirements.
- J. Apply seed and protect with straw mulch as required for new turf.
- K. Water newly planted areas and keep moist until new turf is established.

### 3.7 TURF MAINTENANCE

- A. General: Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf.
  - 1. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth turf.
  - 2. Provide materials and installation the same as those used in the original installation.
  - 3. Fill in as necessary soil subsidence that may occur because of settling or other processes.
  - 4. Replace materials and turf damaged or lost in areas of subsidence.
  - 5. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement.
  - 6. Apply treatments as required to keep turf and soil free of pests and pathogens or disease.
  - 7. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.
- B. Watering: Install and maintain temporary piping, hoses, and turf-watering equipment to convey water from sources and to keep turf uniformly moist to a depth of 4 inches.
  - 1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch.
  - 2. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
  - 3. Water turf with fine spray at a minimum rate of 1 inch per week unless rainfall precipitation is adequate.
- C. Mow turf as soon as top growth is tall enough to cut, and not less than 3 inches in height.
  - 1. Repeat mowing to maintain specified height without cutting more than one-third of grass height.
  - 2. Remove no more than one-third of grass-leaf growth in initial or subsequent mowings.
  - 3. Do not delay mowing until grass blades are bent over and become matted.
  - 4. Do not mow when grass is wet.
  - 5. Schedule initial and subsequent mowings to maintain the following grass height:
  - 6. Mow turf grass to a height of 3 to 4 inches.
  - 7. Do not mow to less than 3 inches in height.
  - 8. Mow every seven to ten days during active growth periods so grass height will not exceed five inches.

D. Fertilizer:

1. Initial Fertilization:

- a. Apply slow-release fertilizer after initial mowing, when grass is dry.
- b. Use fertilizer that provides actual nitrogen of at least 1 lb/1000 sq. ft. to turf area.
- c. Water turf immediately following fertilizer application, if rain is not imminent within 24 hours.

2. Maintenance Fertilization:

- a. Apply one of the following fertilizer types annually in the Fall at the specified rates:

<b>Type</b>	<b>Rate</b>	<b>Rate</b>
<b>N-P-K</b>	<b>lb/ac</b>	<b>lb/1000 sf</b>
10-10-10	500	11.5
30-10-10	400	9.2

3.8 SATISFACTORY TURF

A. Turf installations shall meet the following criteria as determined by Project Landscape Architect:

- 1. Satisfactory Hydroseeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 95 percent over any 10 sq. ft. area and bare spots not exceeding 5 by 5 inches.
- 2. Satisfactory Deer Resistant Meadow Seed Mix Turf: At end of maintenance period, a healthy, well-rooted, even-colored, viable turf has been established, free of weeds, open joints, bare areas, and surface irregularities.

B. When hydroseeded turfgrass establishment is not satisfactory, perform overseeding and re-seeding as directed by the Project Landscape Architect.

- 1. Overseeding thin turf: Overseeding consists of seeding and mulching areas where turfgrass coverage is 40 to 90 percent.
  - a. Cut turfgrass to a height of 3 to 4 inches and remove debris that will interfere with seeding.
  - b. Do not apply herbicide or till soil.
  - c. Apply specified seed mix and mulch at the specified rates.
  - d. Ensure that a minimum of 90 percent of the soil surface is covered with mulch or established turfgrass when overseeding is completed.
- 2. Reseeding failed turf: Reseeding consists of tilling, seeding and mulching areas where turfgrass coverage is less than 40 percent.
  - a. Grade, prepare soil and seedbed, and mulch as specified herein.

C. Use specified materials to reestablish turf that complies with requirements, herein and continue maintenance until turf is satisfactory.

### 3.9 PESTICIDE APPLICATION

- A. Apply pesticides and other chemical products and biological control agents according to requirements of authorities having jurisdiction and manufacturer's written recommendations.
  - 1. Coordinate applications with Owner's operations and others in proximity to the Work.
  - 2. Notify Owner before each application is performed.
- B. Post-Emergent Herbicides (Selective and Nonselective): Apply only as necessary to treat already-germinated weeds and according to manufacturer's written recommendations.

### 3.10 CLEANUP AND PROTECTION

- A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.
- B. Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of them off Owner's property.
- C. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic.
  - 1. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.
- D. Remove nondegradable erosion-control measures after grass establishment period.

### 3.11 MAINTENANCE SERVICE

- A. Turf Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in "Turf Maintenance" Article.
  - 1. Begin maintenance immediately after each area is planted and continue until acceptable turf is established, but for not less than the following periods:
  - 2. Hydroseeded General Turf Areas: 1 year from date of Substantial Completion.
    - a. When initial maintenance period has not elapsed before end of planting season, or if turf is not fully established, continue maintenance during next planting season.
  - 3. Hydroseeded Deer Resistant Meadow Seed Mix Areas: 1 year from date of Substantial Completion.
    - a. When initial maintenance period has not elapsed before end of planting season, or if turf is not fully established, continue maintenance during next planting season.

3.12 FINAL ACCEPTANCE

- A. The Owner’s Representative and the Project Landscape Architect shall inspect the turf during the substantial completion walk through for the entire job.

END OF SECTION 329200

SECTION 329205 – TURF ESTABLISHMENT FOR CRICKET ATHLETIC FIELD AREA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes furnishing and installing all materials and products for establishing permanent turf establishment within the Cricket Field area:
  - 1. Upper Root Zone (excluding the Artificial Turf Cricket Pitch Area).
  - 2. Lower Root Zone for the Athletic Field (excluding the Artificial Turf Cricket Pitch Area).
- B. Related Requirements:
  - 1. Section 312000 "Earth Moving" for subgrade preparation, fill and backfill materials, and compaction requirements.
  - 2. Section 329113 "Soil Preparation" applies to landscape plant material and turf areas located beyond the perimeter limits of the Cricket Field, not located within the limits of the Cricket Field turf area.
  - 3. Section 329200 "Turf and Grasses" for turf areas located beyond the perimeter limits of the Cricket Field, including preparing and placing Planting Mix for those turf areas.

1.3 DEFINITIONS

- A. Amended Soil Planting Mix: A satisfactory Planting Mix created for turf establishment using imported (borrow) topsoil or manufactured topsoil that has been amended with sand, compost, and nutrients based upon laboratory analysis and recommendations.

1.4 PRE-INSTALLATION MEETING

- A. Pre-installation Meeting: Conduct meeting at Project site.
- B. Unless written permission is pre-approved and issued prior to the Pre-installation Meeting by the Owner's Representative, the following individuals are required to attend the Pre-installation Meeting:
  - 1) Contractor's Superintendent.
  - 2) Landscape Subcontractor responsible for establishment of permanent turf.
  - 3) Excavation Subcontractor.

- C. Review methods and procedures related to the establishment of permanent turf, including but not limited to the following:
  - 1) Subgrade preparation and proposed equipment necessary to achieve required grading and compaction requirements.
  - 2) Materials and products approved for permanent turf establishment.
  - 3) Application means, methods, and equipment proposed for use to establish permanent turf establishment.
  - 4) Turf maintenance means, methods and frequency necessary to achieve satisfactory turf.
- D. Submit Meeting Notes from the Pre-Installation Meeting to all attendees, including the Owner’s Representative.

1.5 ACTION SUBMITTALS

- A. Product Data: For all products and materials necessary for turf establishment.
  - 1. Manufacturer and source information for all imported (borrow) soil materials, including proposed amendments necessary to achieve a satisfactory Planting Mix.
  - 2. Certified mechanical, and chemical analysis of samples of onsite and imported topsoil, sand, soil amendments and organic compost materials used for making the satisfactory Planting Mix.
  - 3. Certifications for:
    - a. Seeds and Seed Mix.
    - b. Fertilizer.
    - c. Soil Amendments.
    - d. Compost.
- B. Samples for Confirmation:
  - 1. Satisfactory Borrow (imported) Topsoil: Two pound (2 lb.) sample including sieve analysis and gradation.
  - 2. Compost: Two pound (2 lb.) sample.
- C. Field Run Topographic Survey:
  - 1. To confirm subgrade and finish grading requirements have been achieved.
  - 2. Submit AutoCAD (Version/Release 2018 or newer) and four (4) paper copies to the Project Civil Engineer and Owner’s Representative for review.
- D. Maintenance Schedules for watering, mowing, and Integrated Pest Management (IPM).

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: State of Maryland licenses for Certified Fertilizer Applicators and Certified Pesticide Applicators for personnel performing applicable work.

- B. Field Quality-Control Reports: Submit two (2) copies each to the Project Civil Engineer and the Owner’s Representative.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Seed Species: Fresh, clean, new crop seed, certified by the Maryland Department of Agriculture, Turf and Seed Section.
  - 1. Quality: Seed of grass species as listed below for solar exposure, with not less than 85 percent (85%) germination, not less than 98 percent (98%) pure seed, and not more than 0.5 percent (0.05%) weed seed.
  - 2. The seed mix below supersedes those Permanent Seeding Mixes shown on the approved Erosion and Sediment Control (ESC) Drawings.

**PERMANENT TURFGRASS SEED MIX:**

<u>Seed Type</u>	<u>lbs/ac.</u>	<u>lbs/1000 sf</u>	<u>% of mix</u>
Kentucky Bluegrass	15	0.34	5%
Turf Type Tall Fescue (Three-Way Blend)	285	6.5	95%
Perennial Ryegrass	0	0.0	0%
Total Seeding Rate:	300	6.89	100%

- a. Up to 5% Perennial Rye Grass may be substituted for 5% Turf Type Tall Fescue and used with the Project Landscape Architect’s approval if fast establishment of the turf is determined necessary by the Owner’s Representative.
  - b. Turf-Type Tall Fescue Seed (and Sod) shall consist of a three-way blend (34%, 33%, and 33%) of Tall Fescue ‘Proven’ Cultivars noted in the “Recommended Turfgrass Cultivars for Certified Sod Production and Seed Mixtures in Maryland.”
  - c. Other Crop: Maximum 0.1% and must be free of ryegrass, timothy, orchardgrass, bentgrass, and Canada bluegrass.
  - d. Must be free of all Maryland prohibited and restricted noxious weeds listed in the Maryland Department of the Environment 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control, as amended to date, including clover, dock, cheat, chess, chickweed, crabgrass, plantain, and black magic.
  - e. All seed must fully comply with the current Maryland Seed Law, be state certified and blended under the supervision of the Maryland Department of Agriculture, Turf & Seed Section.
  - f. Each bag of seed shall contain proper labelling and certification tag.
- B. Soil amendments shall be used to amend the soil to meet specified requirements.
  - C. Soil amendments and rates of application are to be determined based on satisfactory topsoil test results.
    - 1. Test requirements for soil amendments are specified in Section 329113 “Soil Preparation” to determine satisfactory Planting Mix requirements.
  - D. All soil amendments must be tested whether the topsoil is mixed on-site or imported pre-mixed.

E. Compost:

- 1) Compost shall be made from yard trimmings, such as leaves, grass clippings and prunings that have been properly composted, and have been sieved through a ¾ inch screen.
- 2) Compost shall be free of trash and contain no toxic substances harmful to plant growth.
- 3) Compost testing shall include a Solvita Compost Maturity Test on a fresh compost sample per testing instructions and have a CMI greater than 6.0. The soluble salt contents shall be between 1-4 dS/m.
- 4) Compost should have between 35% and 50% organic matter, pH between 6.2 and 7.2, total organic carbon above 20%, carbon to nitrogen ratio between 12:1 and 20:1 and heavy metals within acceptable range. Compost testing will be performed on both compost brought to the site but also any used in pre-mixed soil.

F. Fertilizer shall be uniform in composition, free flowing and suitable for application with approved equipment.

1. Fertilizer analysis, recommendations and rate of application shall be determined based on soil test results by a certified Maryland Fertilizer Applicator.
2. All fertilizer shall meet Maryland’s Lawn Fertilizer Law.

G. Rootzone Planting Mixes for the Cricket Athletic Field Area:

1. The Lower Rootzone Planting Mix may be created by on site mixing of amendments into existing soil or it can be imported pre-mixed topsoil.
2. The Upper Rootzone Planting Mix shall be imported pre-mixed topsoil. The Rootzone Planting Mix shall contain satisfactory topsoil that is uniform in color, texture and shall comply with the following criteria:

<b>TEST PROPERTY</b>	<b>TEST VALUE AND AMENDMENT</b>			
Prohibited Weeds	Shall be free of plants or plant parts of Bermuda grass, Quack grass, Johnson grass, Nutsedge, Poison Ivy, Phragmites, Cattail, Reed Canary Grass, Canada thistle, or any noxious weeds.			
Debris	Soil shall be free of cinders, stones, slag, coarse fragments, gravel, sticks, trash, roots, and other debris over 3/4".			
Grading Analysis	Sieve Size	Passing by Weight Minimum %		
	¾ inch	100		
	No. 4	90		
	No. 10	80		
Textural Analysis	<b>Particle</b>		<b>% Passing by Weight</b>	
	<b>Size</b>	<b>mm</b>	<b>Minimum</b>	<b>Maximum</b>
	Sand	2.0 – 0.050	62	75
	Silt	0.050 – 0.002	10	25
	Clay	less than 0.002	10	18
Soil pH	Shall be based on the specific plant requirements but will be within the range of 6.0-6.5.			
Organic Matter	Shall be between 3-6%			

Nutrient Content	The acceptable amount of Magnesium shall be 17.5 ppm; Phosphorous shall be 50 ppm; and Potassium shall be 42.5 ppm.
Soluble Salts	Soluble salts shall not exceed four (4) mmhos/cm, Calcium levels shall not exceed 2,000 parts per million.
Harmful Materials	The soil shall contain no substances harmful to plant growth.

- H. Turf seed and sod shall meet requirements of Section 329200 "Turf and Grasses" for turf and lawn areas, including preparing and placing Planting Mix for those areas.
- I. Packaged materials shall be delivered to the Project site in manufacturer's unopened container or bundles, and shall be identified with name, brand, type, weight, and analysis.
  - 1. Store packaged materials in a manner that will prevent damage or intrusion of foreign matter.
  - 2. All material that becomes contaminated shall be removed from the Project site and replaced with uncontaminated material.
- J. Organic amendments shall not be delivered or installed excessively wet or frozen.
- K. Delivery location, stockpile locations and schedule will be coordinated with the Project Landscape Architect and Owner’s Representative prior to delivery.
  - 1. Soils shall be protected from eroding while stockpiled on site.
- L. Equipment: Specialized grading, tilling, and deep ripping equipment shall be utilized in order to minimize excessive compaction of prepared subgrade and the cricket field Planting Mixes.
  - 1. Vehicle weight shall not exceed 19,000 lbs.
  - 2. All equipment shall be approved by the Owner’s Representative prior to bringing to the site.
  - 3. Grading equipment must be equipped with multiple lasers that automatically operate the blade elevations and be capable of achieving tolerances listed elsewhere in this specification.
  - 4. The lasers shall have accuracy to hundredths of a percent (i.e. 1.23%) of grade and shall be capable of operating either the positive or negative angle of configuration.
  - 5. The deep ripping equipment used to deconsolidate the soil shall have mounted metal tines spaced approximately one foot (1’) apart and capable of extending to a minimum depth of twelve-inches (12”) below surface.
- M. Water: Potable water from fresh water sources.
  - 1. Water shall be free of injurious chemicals and other toxic substances harmful to plant life.

2.2 SUBMITTALS

- A. Contractor shall submit the following information:
  - 1. Rootzone samples and soil tests.
  - 2. Nutrient management plan (fertilizer and pH adjustments).
  - 3. Submit a Nutrient Management Plan which shall be based on the results of the soil testing and meeting the required finished soil parameters.

- a. The soil tests and Nutrient Management Plan must be reviewed and approved by a certified Maryland Fertilizer Applicator.
  - b. The Nutrient Management Plan shall be for both the initial soil preparation and all subsequent fertilization and pH adjustments during the maintenance period.
4. Submit a list of all equipment proposed for soil ripping, rock removal, grading, Planting Mix bed preparation, materials handling, topdressing, and maintenance (watering, fertilizing, and mowing) without over-compacting soils.
  5. Submit soil tests for proposed Planting Mix materials for acceptance:
    - a. Obtain one soil test for each soil source per 300 cubic yards of soil.
    - b. Allow a minimum of four weeks for independent testing by the Owner as required by the Landscape Architect and Owner's Representative.
  6. Submit seed manufacturer's certificate of purity and guarantees of germination in accordance.
    - a. Seed shall be Maryland Certified Seed.
    - b. The Maryland Certified Seed tag must be present on each bag when brought to the site.
    - c. The tags shall be submitted to the Landscape Architect and Owner's Representative when the seed is placed.
    - d. Samples provided by the Contractor shall be typical of material to be delivered to the site and shall provide an accurate indication of color, texture, and the organic make-up of the material.
    - e. Submit three-pound samples of the following:
      - 1) Organic compost material.
      - 2) Sand
      - 3) Imported Rootzone materials.

## PART 3 - EXECUTION

### 3.1 TURF ESTABLISHMENT

#### A. Preparation:

1. The Contractor shall notify the Landscape Architect and Owner's Representative at least ten (10) calendar days prior to each stage of construction.
2. The areas and conditions where the fields are to be installed will be examined, and the Contractor shall notify the Landscape Architect and Owner's Representative of conditions detrimental to proper and timely completion of work.
3. Work shall not proceed until unsatisfactory conditions are corrected in order to allow proper installation of the Work.
4. Determine location of all underground utilities prior to soil work.
5. Existing utilities, paving, vegetation, and other facilities shall be protected from damage throughout operations.
6. All damaged areas, facilities and materials shall be restored, repaired or replaced as directed by the Owner's Representative at the Contractor's expense.

7. Commencement of work will not begin until all submittals have been approved by the Project Landscape Architect and Owner’s Representative which includes, but is not limited to, soil testing results and recommendations.
- B. Working Conditions:
1. All Work on the athletic fields including excavation to subgrade, Rootzone placement, deconsolidation, and amendment operations shall be performed when soil moisture and weather conditions are suitable
  2. Work shall temporarily cease until conditions are suitable as directed by the Project Landscape Architect and Owner’s Representative.
- C. Subgrade Preparation:
1. Perform excavation, fill, and grading to establish the subgrade elevations and slopes to match finished grades.
  2. All surface elevations shall be laser graded and uniform, smooth, and free from irregular surfaces.
  3. Rip subsoils to depth of 12” making a minimum of three (3) passes in one direction and three (3) additional passes in an approximately perpendicular direction to ensure soil is thoroughly mixed and friable.
  4. Appropriate soil moisture condition of the ripped soil can be identified by rolling the soil (at different depths where the ripping will occur) between hands.
  5. If a 4-inch (4”) long ribbon forms easily, then the soil is too moist.
  6. If no ribbon can be formed, or if the soil is too hard to reform, then the soil is too dry.
  7. If the soil fails to deconsolidate in the manner desired for subsequent work, additional passes and/or other measures may be required as directed by the Project Landscape Architect and Owner’s Representative.
  8. After deconsolidation, remove stones and debris larger than two-inches (2”) from the top two-inches (2”) of subgrade using a combination of equipment and manual means.
  9. Compact the subsoils to 85% to 90% of the maximum dry density in accordance with ASTM D698 (Standard Proctor).
  10. The Contractor shall secure the services of an independent testing agency, in accordance with the Testing Agency requirements specified in Section 312000 “Earth Moving”, to verify that the compaction using nuclear density testing.
  11. If the subgrade is compaction exceeds 90% of maximum dry density, deconsolidation of excessive compacted soils must be performed.
  12. Subgrade Check: The Contractor shall obtain the services of a Professional Land Surveyor registered in the State of Maryland to perform a field-run subgrade topographic survey:
    - a. Spot elevations shall be taken on twenty-foot (20’) grid over entire field area.
    - b. Surveyor shall submit a scaled topographic map to the Project Landscape Architect using ½ foot (0.5’) contour intervals to confirm compliance with the proposed Grading Plan(s).
    - c. Spot elevations at all grid points shall be shown with deviations labeled.
    - d. Survey shall be submitted in both PDF and AutoCAD formats.
    - e. Contractor shall make grading adjustments until a satisfactory subgrade check has been achieved.
  13. Subgrade Tolerance/Approval: The contractor shall provide sufficient notice to avoid undue delay in the continuation of the Work.

- a. The finished subgrade shall be reviewed by the Project Landscape Architect and Owner's Representative for debris removal.
- b. Grading uniformity shall be confirmed using a ten-foot (10') straight edge.
- c. All detectable high or low points must be corrected.
- d. Once finished subgrade is determined to meet all requirements and be acceptable, Project Landscape Architect and Owner's Representative shall approve continuation of the Work.

### 3.2 ESTABLISHMENT OF ROOTZONES

#### A. Lower Rootzone Establishment:

1. Place first 2" lift of Lower Rootzone and spread over the approved finished subgrade.
2. Till the top two-inches (2") of subgrade with the bottom two-inches (2") of Lower Rootzone soil to achieve a homogeneous mixture.
3. After mixing, the upper two-inch (2") lift of Lower Rootzone soil can be placed.
4. Note that if imported pre-mixed topsoil is used for Lower Rootzone, then Rootzone material can be placed in two (2) five-inch (5") lifts after bottom two-inch (2") layer is mixed with subgrade.
5. Fine grade installed Lower Rootzone to achieve design elevations and grades and compact to 80% to 85% of maximum dry density in accordance with ASTM D698 (Standard Proctor).
6. The Lower Rootzone finish grade must meet all requirements and no further work can continue without written permission from the Project Landscape Architect and Owner's Representative.

#### B. Upper Rootzone Establishment:

1. Place first two-inches (2") lift of Upper Rootzone and spread over the approved Lower Rootzone. Till the top two-inches (2") of Lower Rootzone with the bottom two-inches (2") of Upper Rootzone soil to achieve a homogeneous mixture.
2. After mixing, the upper 6-inch (6") lift of the Upper Rootzone soil can be placed.
3. Fine grade installed Upper Rootzone to achieve design elevations and grades.
4. Compact to 80% to 85% of the maximum dry density in accordance with ASTM D698 (Standard Proctor).
5. The Contractor shall secure the services of an independent testing agency, in accordance with the Testing Agency requirements specified in Section 312000 "Earth Moving", to verify that the compaction levels are between 80 to 85% of maximum dry density in accordance with ASTM D698 (Standard Proctor).
6. Testing locations shall be determined by the Testing Agency and approved by the Owner's Representative.
7. If any compaction levels exceed 85 percent (85%), deconsolidation work must be performed within vicinity of test location and retesting will be required until satisfactory results are achieved.
8. Upper Rootzone Subgrade Check: The Contractor's Professional Land Surveyor shall perform a field-run subgrade topographic survey with spot elevations taken on twenty-foot (20') grid over the entire Lower Rootzone finished grade area.
  - a. Surveyor shall submit a scaled topographic map to the Project Landscape Architect using ½ foot (0.5') contour intervals to confirm compliance with the proposed Grading Plan(s).
  - b. Spot elevations at all grid points shall be shown with deviations labeled.

- c. Survey shall be submitted in both PDF and AutoCAD formats.
    - d. Contractor shall make grading adjustments until a satisfactory grade check has been achieved.
  - 9. Upper Rootzone Subgrade Tolerance/Approval: The contractor shall provide sufficient notice to avoid undue delay in the continuation of the Work.
    - a. The finished subgrade shall be reviewed by the Project Landscape Architect and Owner’s Representative for debris removal.
    - b. Grading uniformity shall be confirmed using a ten-foot (10’) straight edge.
    - c. All detectable high or low points must be corrected.
    - d. Once Upper Rootzone finish grade has been reviewed and determined that it meets all requirements, the Project Landscape Architect and Owner’s Representative shall approve continuation of the Work.
  - 10. Contractor shall be responsible to provide and install extra Rootzone Planting Mix to fill in all low spots at no additional cost to the Owner.
  - 11. Care must be taken not to over-compact the Rootzone Planting Mix layers.
  - 12. Should over-compacting occur, the Contractor shall be required to de-compact the soil by loosening through tilling or other means and re- compacting to specified limits, at no additional cost to the Owner.
  - 13. Post-Rootzone Planting Mix Soil Testing: Locations for in-situ Planting Mix test locations shall be as follows:
    - a. A minimum of five (5) for a full-size rectangle.
    - b. A minimum of nine (9) for a circular field shall be determined by the Project Landscape Architect and Owner’s Representative.
    - c. The Contractor’s certified nutrient management specialist shall provide nutrient recommendations that comply with Maryland’s Lawn Fertilizer Law.
    - d. All recommendations shall be approved by the Project Landscape Architect and Owner’s Representative.
    - e. Soil amendments shall be applied over finished field to ensure proper limits for Magnesium, Phosphorus, Potassium, Calcium, Nitrogen, Soluble salts, Sulfur, Lime, and soil pH.
    - f. Analysis and rate of application shall be determined based on soil test results conducted by a state laboratory or recognized commercial laboratory before seeding begins.
  - C. Turf establishment shall not begin until all conditions are met for the Upper Rootzone and written permission has been provided by the Owner’s Representative.
- 3.3 HYDROSEEDING, MOWING AND MAINTENANCE
- A. Permanent Hydroseeding shall be performed in accordance with the requirements of Section 329200 “Turf and Grasses”.
    - 1. The Contractor shall be responsible to provide adequate water at the Project site during hydroseeding and maintenance operations.
  - B. Temporary Hydroseeding:

1. No temporary seed shall be placed on the finish graded cricket athletic field area unless specifically directed by the Baltimore County Sediment Control Inspector and authorized by the Owner's Representative.
- C. Watering:
1. Refer to Section 329200 "Turf and Grasses" for watering requirements.
  2. During the first two to three weeks after hydroseeding, the seedbed shall be kept moist to promote germination.
  3. After satisfactory seed germination has occurred, regular watering must be performed to ensure satisfactory turf establishment.
- D. Mowing:
1. Refer to Section 329200 "Turf and Grasses" for mowing requirements.
- E. Overseeding:
1. Areas of poor turf establishment shall require overseeding as directed by the Owner's Representative and shall be performed at no additional cost to the Owner.
  2. Refer to Section 329200 "Turf and Grasses" for overseeding requirements.
- F. Topdressing/Turf Repairs:
1. The Contractor is responsible for providing extra Rootzone Planting Mix to eliminate low spots and re-hydroseeding as necessary to establish satisfactory turf at no cost to Owner.
- G. Initial Acceptance:
1. Refer to Section 329200 "Turf and Grasses" for Initial Acceptance requirements.
- H. Maintenance:
1. Refer to Section 329200 "Turf and Grasses" for Maintenance requirements.

END OF SECTION 329220

SECTION 329220 - CRICKET FIELD PITCH AREA CONSTRUCTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes furnishing all required materials, preparation and construction of a new cricket field synthetic turf pitch area.
- B. Related Requirements:
  - 1. Section 312000 "Earth Moving" for subgrade preparation, fill and backfill materials, and compaction requirements.
  - 2. Section 321313 "Concrete Paving" for specific requirements for construction of the poured-in-place concrete base located beneath the synthetic turf and associated synthetic base underlayment.
  - 3. Section 329113 "Soil Preparation" for Planting Mix requirements.
  - 4. Section 329200 "Turf and Grasses" for turf and lawn areas beyond (outside) the perimeter limits of the Cricket Athletic Field Area.
  - 5. Section 329205 "Turf Establishment for Cricket Athletic Field Area" specifically for turf establishment requirements within the Cricket Athletic Field Area.

1.3 PRE-INSTALLATION MEETING

- A. Pre-installation Meeting: Conduct meeting at Project site.
- B. Unless written permission is pre-approved and issued prior to the Pre-installation Meeting by the Owner's Representative, the following individuals are required to attend the Pre-installation Meeting:
  - a. Contractor's Superintendent.
  - b. Subcontractor responsible for installation of the synthetic base underlayment and synthetic turf.
  - c. Concrete Paving Subcontractor.
  - d. Manufacturer's Local Representative of the synthetic base underlayment and synthetic turf.
  - e. Owner's Representative.
- C. Review sequence with other associated trades, the methods and procedures related to the installation of the synthetic turf and associated synthetic base underlayment, including but not limited to, the following:

- a. Inspect and discuss existing conditions and preparatory work performed by other contractors involved in the synthetic turf installation Work.
  - b. Installation of the poured-in-place concrete base.
  - c. Installation of the synthetic base underlayment and synthetic turf.
- D. Submit Meeting Notes from the Pre-Installation Meeting to all attendees, including the Owner's Representative.

#### 1.4 ACTION SUBMITTALS

A. Product Data: For products.

B. Samples for Confirmation:

1. Synthetic base underlayment: Minimum 8" x 12" sample size.
2. Synthetic turf, for thickness and color: Minimum 8" x 12" sample size.

C. Shop Drawings: Submit cross-sectional view showing synthetic turf base underlayment and synthetic turf installation in relation to poured-in-place concrete base and edge attachment.

#### 1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified manufacturer of synthetic turf base underlayment and synthetic turf.

1. Manufacturer shall operate its own manufacturing plant.
2. Manufacture of the fiber, tufting of the field fibers into the backing materials and coating of the turf system must be done in-house by the synthetic turf manufacturer.
3. Manufacturer must have ISO 9001, ISO 14001 and OHSAS 18001 certifications demonstrating its manufacturing efficiency with regards to quality, environment and safety management systems.
4. Manufacturer must be a FIFA Preferred Producer.
5. Manufacturer must be licensed by all of the following major international governing bodies: FIFA, International Rugby Board (IRB), and the International Hockey Federation (FIH).
6. Manufacturer must provide proof that its turf systems have been subject to long-term independent, epidemiological and peer reviewed studies proving its ability to provide for a safe surface.
7. Manufacturer shall have a minimum of 500 fields that are at least eight (8) years old, which is equal to the respective warranty period.

B. Qualification Data: For qualified installer of synthetic base underlayment and synthetic turf.

1. Installer shall be certified by the manufacturer as qualified to install synthetic turf.
2. Installer shall be experienced in the installation of specified type of grass system for a minimum of three (3) years. This includes use of a spined and/or ridged monofilament fiber, backing, the backing coating, and the installation method.
3. Installation Contractor shall specialize in performing the work of this section.
4. The Contractor shall provide competent workmen skilled in this specific type of synthetic turf installation.

5. The Installer’s Supervisory Personnel shall be certified by the turf manufacturer as competent in the installation of specified monofilament material including sewing seams.
  6. The installer supervisor shall have a minimum of five (5) years’ experience as either a construction manager or a supervisor of synthetic turf installations.
- C. Material Testing Certificate Compliance:
1. From the manufacturers of synthetic base underlayment and synthetic turf.
  2. For aggregate materials.
- D. Warranty: Submit two (2) copies of applicable warranty coverage for synthetic base underlayment and synthetic turf.
1. The Contractor shall provide a warranty to the Owner that covers defects in materials and workmanship of the turf for a period of eight (8) years from the date of Final Acceptance.
  2. The Contractor shall provide a warranty to the Owner that covers defects in the installation workmanship, and further warrant that the installation was done in accordance with both the manufacturer's recommendations and any written directives from the manufacturer's representative.
- E. Field quality-control reports.

#### 1.6 QUALITY ASSURANCE

- A. The cricket field pitch area construction shall fully comply with the current “International Cricket Council’s” Rules and Regulations, latest edition as amended to date.

Website: [www.icc-cricket.com](http://www.icc-cricket.com)

#### 1.7 QUALITY CONTROL IN TURF MANUFACTURING

- A. The manufacturer shall operate its own manufacturing plant.
- B. Manufacturing the fiber, tufting of the field fibers into the backing materials and coating of the turf system must be done in-house by the turf manufacturer.
- C. Outsourcing of any of these major processes is unacceptable.
- D. The manufacturer shall have full-time certified in-house inspectors at their manufacturing plant that are experts with industry standards.
- E. Primary backing shall be inspected by the manufacturer’s full-time certified in-house inspectors before tufting begins.
- F. The manufacturer’s full-time in-house certified inspectors shall verify “pick count”, yarn density in relation to the backing, to ensure the accurate amount of face yarn per square inch.
- G. The manufacturer’s full-time, in-house, certified inspectors shall perform turf inspections at all levels of production including during the tufting process and at the final stages before the turf is loaded onto the truck for delivery.

- H. The manufacturer shall have its own, in-house laboratory where samples of turf are retained and analyzed, based on standard industry tests, performed by full-time, in-house, certified inspectors.
- I. The manufacturer must have ISO 9001, ISO 14001 and OHSAS 18001 certifications to demonstrate its manufacturing efficiency in regard to quality, environment and safety management systems.

#### 1.8 QUALITY CONTROL IN FIBER MANUFACTURING

- A. Synthetic turf fiber manufacturing must perform in a uniform manner, or the manufacturer's quality control issues in the extrusion processes will be suspect. The following applies unless the manufacturer can provide more stringent criteria:
  - 1. Linear Low Density Polyethylene Polymer ("LLDPE") and batch additives obtained from a reputable manufacturer are required to manufacture superior quality monofilament yarn.
  - 2. The master batch formula must include a UV stabilizer package added to its polymer base.
- B. The LLDPE used to make the artificial grass fiber needs to be a "C6" LLDPE which contains 6 carbon atoms and 13 hydrogen atoms. The following applies unless the manufacturer can provide more stringent criteria:
  - 1. A C6-based LLDPE produces strong and resilient artificial grass fibers over prolonged periods and thus should provide the basis for long term performance of the system.
- C. Adequate UV protection is essential to the long-term durability of any artificial grass fiber. The following applies unless the manufacturer can provide more stringent criteria:
  - 1. Typically, stabilizer packages for polyethylene fibers have three components that protect the fibers from degradation: (1) primary antioxidants; (2) secondary antioxidants; and (3) UV stabilizers (i.e., hindered amine light stabilizers ("HALS")). HALS are a particularly important aspect of the stabilizer package.
  - 2. A typical HALS concentration is 10,000 ppm.
  - 3. More developed HALS molecules are methyl stabilized to prevent from degradation.
- D. Streaking refers to color variation in a field due to different degrees of fiber relaxation. The following applies unless the manufacturer can provide more stringent criteria:
  - 1. Fiber in one row stands up, while fiber in an adjacent row lies flat.
  - 2. The inconsistent relaxation causes differences in the reflection of light off of the fiber, and results in the field having a streaked or striped appearance.
  - 3. Provide adequate UV protection.

#### 1.9 DELIVERY, STORAGE, AND HANDLING

- A. Store materials/components in a safe place, under cover, and elevated above grade.
- B. Protect materials from damage during delivery, storage, handling and installation.
- C. Protect from damage by other trades.

PART 2 - PRODUCTS

2.1 SYNTHETIC TURF

- A. FieldTurf “Hockey Gold” synthetic turf shall be as indicated on the Drawings and manufactured by the following or approved equal:

Tarkett Sports Company  
7445 Cote-de-Liesse Road, Suite 200  
Montreal, Quebec H4T 1G2 Canada  
Telephone: (800) 724-2969 Website: [www.fieldturf.com](http://www.fieldturf.com)

Local Representative: Will Johnson, Regional Sales Manager  
Elkridge, Maryland Telephone: (302) 507-6671

1. Synthetic turf shall be made of monofilament polyethylene fibers tufted into a fibrous, two layer, porous backing.
  - a. Pile height shall be 0.50 inches
  - b. Fibers shall be 4400 denier minimum
  - c. Total weight of turf to be 77 oz/yd<sup>2</sup> with a minimum of 50 oz/yd<sup>2</sup> pile weight
2. Glue, thread, seaming fabric and other recommended materials shall be used to install and mark the synthetic turf monofilament.
3. Synthetic turf shall consist of spined and/or ridged monofilament fibers tufted into a two-layer backing with a solid coating.
4. Synthetic turf rolls shall be 15’ wide rolls or the manufacturer’s standard width.
5. Thread for sewing seams of synthetic turf shall be as recommended by the synthetic turf manufacturer.
6. Glue and seaming fabric for inlaying lines and markings shall be as recommended by the synthetic turf manufacturer.

2.2 SYNTHETIC TURF MARKINGS

- A. As indicated on the Drawings and in accordance with “International Cricket Council” Rules and Regulations.

2.3 PERIMETER CURBING AND TURF FABRIC ATTACHMENT NAILER

- A. Pressure-treated Southern Yellow Pine: As indicated on the Drawings.
- B. Fasteners: As indicated on the Drawings.

2.2 COARSE SAND

- A. Sand shall meet ASTM F1632 for sand type, particle size distribution and shape.

- B. The contractor shall supply independent testing to verify compliance with ASTM F1632.

### 2.3 GRADED AGGREGATE BASE (GAB)

- A. In accordance with Section 312000 “Earth Moving”.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verify that concrete base is complete and in satisfactory condition prior to beginning the installation of synthetic turf.
- B. Installer shall examine the concrete base surface to receive the synthetic turf, and accept the concrete base in writing prior to the beginning of installation of synthetic turf.
  - 1. Acceptance is dependent upon the Owner’s test results indicating planarity are in compliance with manufacturer’s specifications.
  - 2. The concrete base surface shall be accepted by Installer as “clean” as synthetic turf installation commences, and shall be maintained in that condition throughout the process.
- C. The surface tolerance shall not exceed 0-1/4 inch over 10 feet and 0-1/2" from design grade.
- D. Correct conditions detrimental to the proper installation of Work.
- E. Do not proceed until unsatisfactory conditions are corrected.
- F. Beginning of installation means acceptance of existing conditions.

### 3.2 PREPARATION

- A. Prior to the beginning of installation, inspect the concrete base for tolerance to grade.
- B. Concrete base acceptance shall be subject to receipt of test results (by others) for planarity that sub-base is in compliance with manufacturer’s specifications and recommendations.
- C. Dimensions of the field and locations for markings shall be measured by a registered surveyor to verify conformity to the specifications and applicable standards.
  - 1. A record of the finished field as-built measurements shall be made.

### 3.3 INSTALLATION - GENERAL

- A. The installation shall be performed in full compliance with approved Shop Drawings.

- B. Only trained technicians, skilled in the installation of athletic caliber synthetic turf systems working under the direct supervision of the approved installer supervisors, shall undertake any cutting, sewing, gluing, shearing, topdressing or brushing operations.
- C. The designated Supervisory personnel on the project must be certified, in writing by the synthetic turf manufacturer, as competent in the installation of this material, including sewing seams and proper installation of the shock pad.
- D. Designs, markings, layouts, and materials shall conform to all “International Cricket Council” Rules and Regulations that apply to this type of synthetic grass installation.
  - 1. Designs, markings and layouts in the form of final shop drawings shall be approved by the Project Civil Engineer and Owner’s Representative prior to the installation of any synthetic turf.
  - 2. All markings shall be in full compliance with final shop drawings.
- E. Install at location(s) indicated, comply with final shop drawings and the synthetic turf manufacturer’s instructions.
  - 1. Any variance from these requirements shall be provided in writing, by the manufacturer’s on-site representative, and submitted to the Project Civil Engineer and Owner’s Representative, verifying that the changes do not in any way affect the Warranty.
- F. Carpet rolls and shock pad shall be installed directly over the properly prepared concrete base.
- G. A single roll width shall be laid the length of the pitch.
  - 1. Turf shall be of sufficient width to permit full cross-pitch installation.
  - 2. Each roll shall be attached to the next roll utilizing standard state-of-the- art sewing procedures.
- H. Synthetic turf panel seams shall be sewn along the selvedge edging flap of the turf roll.
  - 1. Seams secured by other means including gluing are unacceptable.
  - 2. Installation shall be 99% sewn.
  - 3. Minimum gluing will only be permitted to repair problem areas, corner completions, and as required by the specifications.
  - 4. Seams shall be flat, tight, and permanent with no separation or fraying.
  - 5. In the case of all lines and logos, turf carpet/field fibers must be sheared to the backing (do not cut the backing) and adhered using hot melt adhesives.
- I. Synthetic turf shall be attached to the perimeter edge detail in accordance with the manufacturer’s standard procedures and as indicated on the Drawings.
- J. Upon completion of installation, the finished pitch shall be inspected by the Manufacturer's Local Representative for synthetic base underlayment and synthetic turf.
  - 1. Any discrepancies from the approved shop drawings shall be corrected prior to final acceptance.

3.4 FIELD MARKINGS

- A. Field markings shall be installed in accordance with approved shop drawings.

3.5 PROTECTION, CLEANING AND FINAL ACCEPTANCE

- A. Do not permit traffic over unprotected surface.
- B. Contractor shall provide the labor, supplies, and equipment as necessary for final cleaning of surfaces and installed items.
- C. All usable remnants of new material shall become the property of the Owner.
- D. The Contractor shall keep the area clean throughout the project and clear of debris.
- E. Surfaces, recesses, enclosures, and related spaces shall be cleaned as necessary to leave the work area in a clean, undamaged condition ready for immediate occupancy and use by the Owner.
- F. Protect installation throughout construction and installation process until the date of final acceptance by the Owner's Representative.

3.6 MAINTENANCE SERVICE

- A. Contractor shall train the Owner's facility maintenance staff in the use of the turf manufacturer's recommended maintenance equipment and products.
- B. Manufacturer shall provide maintenance guidelines and a maintenance video to the facility's maintenance staff.

END OF SECTION 329220

## SECTION 329300 - PLANTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:

1. Plant material.
2. Planting Mix and soil amendments.
3. Tree stabilization materials.
4. Fertilizers, herbicides, pesticides, and mulches.
5. Slow release tree-watering devices, when indicated.

- B. Related Requirements:

1. Section 015639 "Temporary Tree and Plant Protection" for protecting, trimming, pruning, repairing, and replacing existing trees to remain that interfere with, or are affected by, execution of the Work.
2. Section 329113 "Soil Preparation" for preparation of Planting Mixes and testing procedures.
3. Section 329200 "Turf and Grasses" for turf establishment beyond (outside of) the Cricket Field Area.
4. Section 329205 "Turf Establishment for Cricket Athletic Field Area" for turf establishment within the Cricket Field Area.

#### 1.3 DEFINITIONS

- A. Backfill: The plant mix used to replace earth, or the act of replacing earth in an excavation.
- B. Balled and Burlapped Stock: Plants dug with firm, natural balls of earth in which they were grown, with a ball size not less than diameter and depth recommended by ANSI Z60.1 for type and size of plant required.
  1. Wrapped with burlap, tied, rigidly supported, and drum laced with twine with the root flare visible at the surface of the ball as recommended by ANSI Z60.1.
- C. Container-Grown Stock: Healthy, vigorous, well-rooted plants grown in a container, with a well-established root system reaching sides of container and maintaining a firm ball when removed from container.

1. Container shall be rigid enough to hold ball shape and protect root mass during shipping and be sized according to ANSI Z60.1 for type and size of plant required.
- D. Finish Grade: Elevation of finished surface of Planting Mix.
- E. Herbicide/Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest or undesirable plant.
1. Pesticides include, but are not limited to, insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides.
  2. They also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant (some sources classify herbicides separately from pesticides).
- F. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people.
1. Pests include, but are not limited to, insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, rats and mice), unwanted plants (weeds and invasive plants), fungi, bacteria, and viruses.
- G. Planting Area: Areas for installation of plant material.
- H. Planting Mix: Satisfactory existing on-site topsoil, satisfactory imported topsoil, or manufactured soil that has been modified with soil amendments and fertilizers to produce a satisfactory soil mixture for plant growth.
1. Refer to Section 329113 "Soil Preparation" for Planting Mix requirements.
- I. Plant; Plants; Plant Material: These terms refer to vegetation in general, including trees, shrubs, ground covers, ornamental grasses, bulbs, corms, tubers, and herbaceous vegetation.
- J. Root Flare (also called "trunk flare"): The area at the base of the plant's stem or trunk where the stem or trunk broadens to form roots; the area of transition between the root system and the stem or trunk.
- K. Stem Girdling Roots: Roots that encircle the stems (trunks) of trees below the soil surface.
- L. Subgrade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before Planting Mix is placed.

#### 1.4 COORDINATION

- A. Coordination with Turf (Lawn) Installation Areas:
1. Install trees, shrubs, and other plants after finish grades have been established, and before installing turf areas unless otherwise indicated.
  2. When planting trees, shrubs, and other plants after turf areas have been installed: Protect turf areas and promptly repair damage caused by planting operations.

#### 1.4 PRE-INSTALLATION MEETING

- A. Pre-installation Meeting: Conduct meeting at Project site.
- B. Unless written permission is pre-approved and issued prior to the Pre-installation Meeting by the Owner’s Representative, the following individuals are required to attend the Pre-installation Meeting:
  - 1. Contractor's Superintendent.
  - 2. Contractor's Superintendent.
  - 3. Landscape Subcontractor responsible for installation of all plant material.
  - 4. Project Landscape Architect.
  - 5. Owner’s Representative.
- C. Review completed finish grading, methods and procedures related to the installation of all plant material including but not limited to the following:
  - 1. Correction of deficient finish grading prior to installation of plant materials in deficient areas.
  - 2. Mulch, pesticides and herbicides, tree stabilization methods, amendments and fertilizers and associated products approved for the installation of all plant material.
  - 3. Installation means, methods, and equipment proposed for use for installation of all plant material.
  - 4. Maintenance means, methods and frequency necessary to maintain plants in a healthy condition.
- D. Submit Meeting Notes from the Pre-Installation Meeting to all attendees, including the Owner’s Representative.

#### 1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Plant Materials: Include quantities, sizes, quality, and sources for plant materials.
  - 2. Plant “Standard of Comparison” Images: Include color images in digital format for each required species and size of plant material as it will be furnished to Project. Obtain images from an angle that depicts actual size and condition of the typical plant to be furnished. Include a scale rod or other measuring device in each image. For species where more than ten (10) plants are required, include a minimum of three (3) images showing the average plant, the best quality plant, and the plant of least quality to be furnished. Identify in each image: the full scientific name and variety or cultivar of the plant, the plant size, and name of the growing nursery. Images shall be of a high enough resolution as to clearly see the condition of trunk and foliage.
- B. Samples for Verification: for each of the following:
  - 1. Mulch: 1-quart volume of each type of mulch; submit in sealed plastic bags labeled with composition of materials by percentage of weight and source of mulch. Each Sample shall be typical of the material to be furnished: provide an accurate representation of color, texture, and organic makeup.

## 1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For landscape Installer. Include list of similar projects completed by Installer demonstrating Installer's capabilities and experience.
  - 1. Include project names, addresses, and year completed, and include names and addresses of that Owner's contact person.
- B. Product Certificates: For each type of manufactured product, from manufacturer, and complying with the following:
  - 1. Manufacturer's certified analysis of standard products.
  - 2. Analysis of other materials by a recognized laboratory made according to methods established by the Association of Official Analytical Chemists (AOAC), where applicable.
- C. Pesticides and Herbicides: Product label and manufacturer's application instructions specific to Project.

## 1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: Recommended procedures to be established and performed by Owner for maintenance of plants during each calendar year.
  - 1. Submit before expiration of required maintenance period for this Project.

## 1.8 QUALITY ASSURANCE

- A. The "American Standard for Nursery Stock" (ANSI Z60.1), 2014 edition, published by AmericanHort, as amended to date.
- B. Installer Qualifications: A qualified landscape installer whose work has resulted in successful establishment of plants.
  - 1. Professional Membership: Installer shall be a member in good standing of either the National Association of Landscape Professionals (formerly the *Professional Landcare Network*), or AmericanHort (formerly the *American Nursery and Landscape Association*).
  - 2. Experience: At least five (5) years' experience in landscape installation for projects of similar scale in addition to requirements in Section 014000 "Quality Requirements."
  - 3. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
  - 4. Personnel Certifications: Installer's field supervisor shall have certification in one of the following categories from the National Association of Landscape Professions (formerly the PLANET).
    - a. Landscape Industry Certified Technician - Exterior
    - b. Landscape Industry Certified Horticultural Technician.
  - 5. Pesticide Applicator: Commercial, licensed in the State of Maryland.

- C. Provide quality, size, genus, species, and variety of plants indicated, complying with applicable requirements in ANSI Z60.1.
- D. Measurements: Measure according to ANSI Z60.1. Do not prune to obtain required sizes.
  - 1. Trees and Shrubs: Measure with branches and trunks or canes in their normal position.
  - 2. Other Plants: Measure with stems, petioles, and foliage in their normal position.
- E. Observation of Plant Material: The Landscape Architect may choose either to observe plant material at the nursery's location, or at the Project site prior to installation, for compliance with ANSI Z60.1 requirements for genus, species, variety, cultivar, size, and quality.
  - 1. Landscape Architect may also choose to observe installed plant material for size, condition of balls, root systems, pests, disease symptoms, injuries, and latent defects that may be cause for rejection of unsatisfactory or defective material, at any time, during the prosecution of work.
  - 2. Immediately remove rejected plant material from Project site.
  - 3. Furnish the "Standard of Comparison" images and notify Landscape Architect of sources of all planting materials a minimum of fourteen (14) days in advance of delivery to site.
  - 4. The Landscape Architect, the Owner, or his designated representative will inspect and approve or reject plant material delivered to the site.
- F. Plant Quantities: Quantities shown in the Planting Schedule on the Drawings are estimates only. The Contractor shall install the quantities shown and labeled in plan view as indicated on the Drawings.
  - 1. Contractor shall notify Landscape Architect of any discrepancies between the quantities listed in the Planting Schedule and quantities shown and noted in Plan view.

#### 1.9 DELIVERY, STORAGE, AND HANDLING

- A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws if applicable.
- B. Bulk Materials:
  - 1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
  - 2. Provide erosion-control measures to prevent erosion or displacement of bulk materials; discharge of soil-bearing water runoff; and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
  - 3. Provide appropriate certificates with each delivery of bulk materials to the site.
- C. Deliver bare-root stock plants within 36 hours of digging.
  - 1. Immediately after digging bare-root stock, pack root system in wet straw, hay, or other suitable material to keep root system moist until planting.
  - 2. Transport in covered, temperature-controlled vehicles, keeping plants cool and protected from sun and wind at all times.

- D. Do not prune trees and shrubs prior to delivery.
  - 1. Protect bark, branches, and root systems from sun scald, drying, wind burn, sweating, whipping, and other handling and tying damage.
  - 2. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape.
  - 3. Provide protective covering of plants during shipping and delivery.
  - 4. Do not drop plants during delivery and handling.
- E. Handle plant materials by root ball or container.
- F. Store bulbs, corms, and tubers in a dry place at 60 to 65 deg F. until installation.
- G. Apply antidesiccant to trees and shrubs using power spray to provide an adequate film over trunks (before wrapping), branches, stems, twigs, and foliage to protect during digging, handling, and transportation.
  - 1. If deciduous trees or shrubs are moved in full leaf, spray with antidesiccant at nursery before moving and again two weeks after planting.
- H. Wrap trees and shrubs with burlap fabric over trunks, branches, stems, twigs, and foliage to protect from wind and other damage during digging, handling, and transportation.
- I. Deliver plants after preparations for planting have been completed, then install immediately.
  - 1. If planting is delayed more than six hours after delivery, temporarily set plants in the appropriate location (sun, filtered sun, or shade), protect from weather and mechanical damage, and keep roots moist.
  - 2. Heel-in bare-root stock. Soak roots that are in less than a moist condition in water for two hours. Reject plants with dry roots.
  - 3. Set balled stock on ground and cover ball with soil, peat moss, sawdust, or other acceptable material.
  - 4. Do not remove container-grown stock from containers before time of planting.
  - 5. Water root systems of plants stored on-site deeply and thoroughly with a fine-mist spray. Water as often as necessary to maintain root systems in a moist, but not overly wet condition.

#### 1.10 FIELD CONDITIONS

- A. Field Measurements: Verify proposed grade elevations, utility locations and services, landscape irrigation system components, and locations of plantings and contiguous construction in relation to new plantings by field measurements before proceeding with installation.
- B. Verify that all planting bed areas have positive drainage with a 2% minimum slope prior to laying out plant materials. Correct grading as required to obtain positive drainage.
  - 1. Proposed Stormwater Management Micro-Bioretenion facilities are intended to receive drainage as indicated on the approved Drawings.
- C. Planting Restrictions: Plant during one of the following periods.

1. Coordinate planting periods with maintenance periods to provide required maintenance from date of Substantial Completion.
  2. Deciduous Trees and Shrubs:
    - a. Balled and Burlapped Materials:
      - 1) Spring Planting: February 15<sup>th</sup> through April 30<sup>th</sup>.
      - 2) Fall Planting: October 15<sup>th</sup> through December 15<sup>th</sup>.
    - b. Container Grown Materials:
      - 1) Spring Planting: March 1<sup>st</sup> through June 15<sup>th</sup>.
      - 2) Fall Planting: August 15<sup>th</sup> through December 15<sup>th</sup>.
  3. Evergreen Trees and Shrubs:
    - a. Balled and Burlapped Materials:
      - 1) Spring Planting: March 15<sup>th</sup> through April 30<sup>th</sup>.
      - 2) Fall Planting: September 1<sup>st</sup> through November 15<sup>th</sup>.
    - b. Container Grown Materials:
      - 1) Spring Planting: March 15<sup>th</sup> through June 30<sup>th</sup>.
      - 2) Fall Planting: August 15<sup>th</sup> through November 15<sup>th</sup>.
  4. Perennials and Grasses
    - a. Container Grown Materials:
      - 1) Spring Planting April 15<sup>th</sup> through June 30<sup>th</sup>.
      - 2) Fall Planting: September 1<sup>st</sup> through October 30<sup>th</sup>.
- D. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions allow installation to be performed when beneficial and optimum results may be obtained.
1. Apply recommended products during favorable weather conditions according to manufacturer's written instructions and warranty requirements.

#### 1.11 WARRANTY

- A. Special Warranty: Installer agrees to repair or replace plantings and accessories that fail in materials, workmanship, or growth within specified warranty period.
1. Failures include, but are not limited to, the following:
    - a. Death and unsatisfactory growth, except for defects resulting from abuse, lack of adequate maintenance, or neglect by Owner.
    - b. Structural failures including plantings falling or blowing over.
    - c. Faulty performance of tree stabilization.
    - d. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

2. Warranty Periods: One (1) full growing season after the date of Substantial Completion of the Project.
  - a. Trees, Shrubs, and Ornamental Grasses: 12 months.
  - b. Ground Covers, Perennials, and Other Plants: 12 months.
3. Provide the following remedial actions:
  - a. Immediately remove dead plants and replace unless required to plant in the succeeding planting season.
  - b. Replace plants that are more than 25 percent dead or in an unhealthy condition at end of warranty period.
  - c. Provide extended warranty for period equal to original warranty period, for replaced plant material.
  - d. Maintain the minimum depth of mulch.

## PART 2 - PRODUCTS

### 2.1 PLANT MATERIAL

- A. General: Furnish nursery-grown plants true to genus, species, variety, cultivar, stem form, shearing and other features noted the in Plant Schedule as indicated on Drawings, and complying with ANSI Z60.1.
  1. Provide plants with healthy root systems developed by transplanting or root pruning.
  2. Provide well-shaped, fully branched, healthy, vigorous stock, densely foliated when in leaf and free of disease, pests, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.
  3. Single-stem trees with damaged, crooked, or multiple leaders; tight vertical branches where bark is squeezed between two branches or between branch and trunk ("included bark"); crossing trunks; cut-off limbs more than 3/4 inch in diameter; or with stem girdling roots are unacceptable.
  4. Multi-stemmed trees shall be typical of their genus, species, cultivar or variety, without defects or damages in the same manner as for single-stem trees.
  5. Collected Stock: Do not use plants harvested from the wild, from native stands, from an established landscape planting, or not grown in a nursery unless otherwise indicated.
- B. Hardiness Zones of Origin: Plant material shall be nursery grown in Plant Hardiness Zones 5, 6, or 7 according to the 'USDA Plant Hardiness Zone Map' unless otherwise specified.
- C. Provide plants of sizes, grades, and ball or container sizes complying with ANSI Z60.1 for types and form of plants specified.
  1. Plants of a larger size may be installed, if acceptable to Landscape Architect, with an associated increase in size of roots, balls, or containers.
- D. Root-Ball Depth: Furnish trees and shrubs with root balls measured from top of root ball, which begins at root flare according to ANSI Z60.1.

1. Root flare shall be visible before planting.
- E. Labeling: Label all plants with a securely attached, waterproof tag bearing legible designation of common name and full scientific name, including genus, species and hybrid, variety, or cultivar, if applicable for the plant.
- F. Plant material that is misidentified, unsatisfactorily labeled or tagged, or do not conform to the typical, accepted characteristics of the species or cultivar, will be rejected.
- G. Plants shall be healthy, free from physical defects and stresses, and have well-developed branches and a vigorous root system.
  1. Plants that exhibit wilt, shriveling, insufficient root mass, broken or loose root balls or inadequate protection will be rejected.
- H. Container grown plants shall be well rooted, vigorous, and established in the size container or pot specified, shall have well balanced tops for their size, and shall not be root bound.
- I. If formal arrangements or consecutive order of plants is indicated on Drawings, select stock for uniform height and spread, and number the labels to assure symmetry in planting.
- J. Substitutions: All plant material substitution requests must be made in writing to the Landscape Architect, and are subject to approval by the Landscape Architect.
- K. Trees:
  1. All trees shall be Balled and Burlapped (B&B). No trees that have been grown in containers at any time will be accepted.
  2. All trees shall have been transplanted or root pruned at least once within the previous three (3) year period prior to digging for this Project.
  3. Trees shall not be top pruned in any way prior to planting.
  4. Single-stem trees shall have a straight trunk with a single leader, well-branched, intact, undamaged and uncut. A
  5. All old abrasions and cuts must be completely calloused over.
  6. Multi-stemmed trees shall be typical of their genus, species, cultivar or variety without defects or damages in the same manner as for single-stem trees.
  7. All trees shall be measured when their branches are in their normal position.
  8. Height and spread dimensions specified refer to the main body of the tree and not branch to branch or root tip to tip.
  9. Unless otherwise noted, all trees shall be symmetrical and/or typical for the variety and species, cultivar or variety, and comply with the measurements indicated in the Plant Schedules.
  10. Where symmetry is required for a group or line of trees, each tree shall be nearly identical as possible to each other.
  11. Trees shall not be bound with rope or wire at any time so as to damage the bark or break branches.

## 2.2 PLANTING MIX

- A. In accordance with Section 329113 “Soil Preparation.”

## 2.3 MULCHES

- A. Mulch: Uniform in texture, free from deleterious materials or concentrations of toxic metals, chemicals or other substances that are harmful to human health, water quality or plant growth, and suitable as a top dressing of plant materials and bed areas, consisting of one of the following:
  - 1. Stormwater Management (SWM) Micro-Bioretenention Facilities: In accordance with the approved Stormwater Management Drawings.
  - 2. Landscape Trees, Shrubs, and Plant Beds (not within SWM Micro-Bioretenention Facilities):
    - a. Shredded hardwood bark mulch.
    - b. Shall consist of natural bark and wood chips derived from hardwood trees that has been milled and screened to a maximum 3 in particle size
    - c. Shall be aged a minimum of 90 days prior to installation.
- B. Color: Natural. No dyed mulches will be accepted.

## 2.4 PESTICIDES AND HERBICIDES

- A. General: Pesticides shall be registered and approved by the EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application.
  - 1. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.
- B. Pre-Emergent Herbicide (Selective and Nonselective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.
- C. Post-Emergent Herbicide (Selective and Nonselective): Effective for controlling weed growth that has already germinated.

## 2.5 TREE-STABILIZATION MATERIALS

- A. Trunk-Stabilization Materials:
  - 1. Upright and Guy Stakes: Rough-sawn, sound, new hardwood, free of knots, holes, cross grain, and other defects, 2-by-2-inch nominal by length indicated, pointed at one end.
  - 2. Flexible Ties: Wide rubber or elastic bands or straps of length required to reach stakes or turnbuckles.
  - 3. Guys and Tie Wires: ASTM A641, Class 1, galvanized-steel wire, two-strand, twisted, 0.106 inch in diameter.

## 2.6 AMENDMENTS AND FERTILIZERS

- A. Subject to compliance with the requirements, provide the following approved amendments:
  - 1. Polymer Granules and Disks:

- a. “Soil Moist” Polymer Granules or “Soil Moist” Polymer Disks manufactured by JRM Chemical, 15663 NEO Parkway, Cleveland, Ohio 44125, or approved equal.  
Telephone: (800) 962-4010 Website: [www.soilmoist.com](http://www.soilmoist.com).
2. Mycorrhiza Inoculants:
  - a. “Soil Moist” Mycorrhiza products manufactured by JRM Chemical, 15663 NEO Parkway, Cleveland, Ohio 44125, or approved equal.  
Telephone: (800) 962-4010 Website: [www.soilmoist.com](http://www.soilmoist.com)
  - b. “Dynomyco” Mycorrhizal Inoculant manufactured by Dynomyco, 27 Hashahar Street, Moshav Mazor, Israel 7316000, or approved equal.  
USA Telephone: (888) 964-0685 Website: [www.dynomyco.com](http://www.dynomyco.com).

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine areas to receive plants, with Installer present, for compliance with requirements and conditions affecting installation and performance of the Work.
  1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid is contained in the existing soil within a proposed planting location or plant bed area.
  2. Verify that plants and vehicles loaded with plants can travel to planting locations with adequate overhead clearance.
  3. Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain satisfactory plant installation results.
  4. Uniformly moisten excessively dry soil that is not workable or which creates dust.
- B. If contamination by foreign or deleterious material or liquid is present in soil within a planting location or plant bed area, remove the soil and contamination as directed by Landscape Architect and replace with new planting soil mix.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 PREPARATION

- A. Contact “Miss Utility” at (800) 257-7777 or another approved utility locating service to identify and mark utilities in the areas to be planted.
  1. Contact the service a minimum of five (5) working days prior to beginning planting operations. Notify Landscape Architect or Owner’s Representative of conflicts between utilities and proposed plant locations.
  2. Conflicts with utilities will be reviewed by the Landscape Architect or Owner’s Representative and direction will be given to the Contractor for adjustment of proposed planting locations.

3. Contractor shall not move plant materials from proposed locations indicated on Drawings without confirmation from the Landscape Architect or Owner's Representative.
- B. Protect structures, utilities, sidewalks, pavements, and other facilities and turf areas and existing plants from damage caused by planting operations.
- C. Maintain erosion-control devices and measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.
- D. Provide the necessary materials, stake out or flag proposed individual tree and shrub locations and outline of proposed areas for multiple plantings.
- E. Obtain Landscape Architect's or Owner Representative's approval of layout prior to commencement of planting operations.
  1. A minimum of three (3) days' notice is required to schedule each stage of a layout approval inspection with the Landscape Architect or Owner's Representative.
  2. Proceed with operations only after layout approval has been obtained.
- F. Plant Acclimation: Ensure that container grown plants are acclimated to the site's prevailing weather conditions before installing.

### 3.3 PLANTING AREA ESTABLISHMENT

- A. General: Prepare planting area for soil placement and mix planting soil according to Section 329113 "Soil Preparation."
- B. All shrub and groundcover areas shall be planted in continuous, prepared beds and mulched with mulch as detailed and specified.
- C. Placing Planting Mix: Place Planting Mix over prepared subgrade.
- D. Before plant installation, obtain Landscape Architect's or Owner's Representative's acceptance of finish grading.
  1. Restore planting areas if eroded or otherwise disturbed conditions exist after finish grading.

### 3.4 EXCAVATION FOR TREES AND SHRUBS

- A. Planting Pits and Trenches: Excavate circular planting pits.
  1. Excavate planting pits as indicated on the Drawings.
  2. Trim perimeter of bottom leaving center area of bottom raised slightly to support root ball and assist in drainage away from center.
  3. Do not further disturb base.
  4. Ensure that root ball will sit on undisturbed base soil to prevent settling.
  5. Scarify sides of planting pit that have been smeared or smoothed during excavation operations.

6. Do not excavate deeper than depth of the root ball, measured from the root flare to the bottom of the root ball.
  7. Retain satisfactory excavated soil if suitable for Planting Mix as specified in Section 329113 “Soil Preparation”.
  8. If area under the plant was initially dug too deep, add satisfactory soil to raise it to the correct level and thoroughly tamp the additional soil to prevent settling.
  9. Maintain angles of repose of adjacent materials to ensure stability.
  10. Do not excavate subgrades of adjacent paving, structures, hardscapes, or other new or existing improvements.
  11. Maintain supervision of excavations during working hours.
  12. Keep excavations covered or otherwise protected after working hours.
  13. If subdrainage is indicated on Drawings or required beneath planting areas, excavate to reach the top of porous backfill over the subdrainage system.
- B. Backfill Soil: Satisfactory topsoil and soil removed from excavations may be retained for preparation as Planting Mix as specified in Section 329113 “Soil Preparation.”
- C. Obstructions: Notify Landscape Architect or Owner’s Representative if unexpected rock or obstructions detrimental to trees or shrubs are encountered in excavations.
1. Hardpan Layer: Drill 6-inch-diameter holes, 24 inches apart, into free-draining strata or to a depth of 10 feet, whichever is less, and backfill augered holes to the bottom of the plant pit with washed #57 stone aggregate material.
- D. Perched Water, Springs, or Subsurface Drainage Conditions: Notify Landscape Architect or Owner’s Representative if subsoil conditions evidence unexpected water seepage or retention in tree or shrub planting pits.
- E. Fill excavated plant pits with water to moisten subsoil, and allow to fully infiltrate prior to installing trees and shrubs.

### 3.5 TREE AND SHRUB PLANTING

- A. Inspection: At time of planting, verify that root flare is visible at top of root ball according to ANSI Z60.1.
1. If root flare is not visible, remove soil in a level manner from the root ball to where the top-most root emerges from the trunk.
  2. After soil removal to expose the root flare, verify that root ball still meets size requirements.
- B. Roots: Remove stem girdling roots and kinked roots.
1. Remove injured roots by cutting cleanly, do not break.
- C. All plants shall be set straight and plumb in approved locations and set at such a level that after minor settlement, normal or natural relationship of the crown with the ground will be maintained.
- D. All plants shall be treated at time of planting and initial watering with a hydrophilic acrylic polymer “Soil Moist”, or equal, and shall be applied at the manufacturer’s recommended rate per caliper inch of tree planted, and in accordance with the manufacturer’s recommended rates for shrubs.

- E. All trees shall be treated with Mycorrhizae Plant Tabs, or equal, at the time of planting.
1. The rate shall be in accordance with the manufacturer's recommendations per caliper inch of tree planted, and in accordance with the manufacturer's recommended rates for shrubs.
  2. The Tab shall be planted 1/3 to 1/2 the depth of the root zone system.
- F. Balled and Burlapped Stock: Set each plant plumb and in center of planting pit or trench with root flare 1-inch above adjacent finish grades.
1. Backfill: Planting Mix in accordance with Section 329113 "Soil Preparation."
  2. Planting Mix shall be tamped under and around the base of the root balls to prevent voids.
  3. Place the root collar 1-2 inches above the average soil surface grade outside the planting pit.
  4. Completely remove all wire baskets, burlap, rope or twine used to secure rootballs prior to backfilling.
  5. Do not use planting stock if root ball is cracked or broken before or during planting operation.
  6. Backfill around root ball in layers, tamping to consolidate Planting Mix and eliminate voids and air pockets.
  7. When planting pit is approximately one-half filled, water thoroughly before placing remainder of Planting Mix.
  8. Repeat watering until no more water is absorbed.
  9. Continue backfilling process.
  10. Water again immediately after placing and tamping final layer of Planting Mix.
- G. Container-Grown Stock: Set each plant plumb and in center of planting pit or trench with root flare 1 inch above adjacent finish grades.
1. Backfill: Planting Mix in accordance with Section 329113 "Soil Preparation."
  2. Carefully remove root ball from container without damaging root ball or plant. Loosen the soil mass to eliminate girdling roots.
  3. Backfill around root ball in layers, tamping to consolidate Planting Mix and eliminate voids and air pockets.
  4. When planting pit is approximately one-half filled, water thoroughly before placing remainder of Planting Mix.
  5. Repeat watering until no more water is absorbed.
  6. Continue backfilling process.
  7. Water again after placing and tamping final layer of Planting Mix.
- H. Slopes: When planting on slopes, set the plant so the root flare on the uphill side is flush with the surrounding soil on the slope; the edge of the root ball on the downhill side will be above the surrounding soil.
1. Apply enough Planting Mix to cover the downhill side of the root ball.
- I. Mulch: Trees and shrubs shall be mulched immediately following installation, within the same day.
1. Mulch shall be spread to an even finished surface, as indicated.
  2. Do not place mulch within 3 inches of the trunk or stem of any tree or shrub.

### 3.6 TREE AND SHRUB PRUNING

- A. Remove only dead, dying, or broken branches. Do not prune for shape.
- B. Prune, thin, and shape trees and shrubs according to standard professional horticultural and arboricultural practices.
  - 1. Unless otherwise indicated by Landscape Architect, do not cut tree leaders; remove only injured, dying, or dead branches from trees and shrubs; and prune to retain natural character.
- C. Do not apply pruning paint to wounds.
- D. Substantial wounds to the bark as determined by the Landscape Architect or Owner's Representative shall result in the rejection of plant material.

### 3.7 TREE STABILIZATION

- A. Trunk Stabilization by Upright Staking and Tying: Install trunk stabilization as follows unless otherwise indicated:
  - 1. Upright Staking and Tying: Stake trees of 2-inch through 5-inch caliper.
    - a. Stake trees of less than 2-inch caliper only as required to prevent wind tip out.
    - b. Use a minimum of two stakes of length required to penetrate at least 18 inches below bottom of backfilled plant pit and to extend to the dimension indicated on Drawings above grade.
    - c. Set vertical stakes and space to avoid penetrating root balls or root masses.
  - 2. Upright Staking and Tying: Stake trees with two stakes for trees up to 12 feet high and 2-1/2 inches or less in caliper; three stakes for trees less than 14 feet high and up to 4 inches in caliper.
    - a. Space stakes equally around trees.
  - 3. Support trees with bands of flexible ties at contact points with tree trunk.
    - a. Allow enough slack to avoid rigid restraint of tree.
  - 4. Support trees with two strands of tie wire, connected to the brass grommets of tree-tie webbing at contact points with tree trunk.
    - a. Allow enough slack to avoid rigid restraint of tree.

### 3.8 GROUND COVER AND PLANT PLANTING

- A. Set out and space ground cover and plants other than trees and shrubs as indicated on Drawings in even rows with triangular spacing.
- B. Backfill: Planting Mix in accordance with Section 329115 "Soil Preparation."

- C. Dig holes as indicated on Drawings to allow spreading of roots.
- D. For rooted cutting plants supplied in flats, plant each in a manner that minimally disturbs the root system but to a depth not less than two nodes.
- E. Work Planting Mix around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water.
- F. Water thoroughly after planting, taking care not to cover plant crowns with wet Planting Mix.
- G. Protect plants from hot sun and wind; remove protection if plants show evidence of recovery from transplanting shock.

### 3.9 PLANT BED EDGES

- 1. Cut edges of plant beds at a steep angle into the planting bed area to a 3 inch depth.
  - a. On slopes 4:1 or steeper, cut edges outside of the bermed area on the lower edge of the berm. Remove and discard excess soil material.
- 2. Edge entirely around all planting beds except at plant pits within planting bed areas.
- 3. Smoothly cut edges around all plant beds to the shapes indicated.

### 3.10 PLANT BED AREAS MULCHING

- A. Mulch Planting Mix surfaces within plant bed areas and other areas to the depth indicated on the Drawings.
  - 1. Trees and Treelike Shrubs within Turf Areas: Apply mulch ring around trunks or stems as indicated on Drawings.
    - a. Do not place mulch within 3 inches of trunks or stems.
  - 2. Mulch within Plant Bed Areas: Apply mulch as indicated on Drawings for individual plant pits and uniformly over the entire surface of plant bed area, and level with adjacent finish grades of pavement or turf areas.
    - a. Do not place mulch within 3 inches of trunks or stems.
  - 3. Mulch in Micro-Bioretenion Facility: Apply as indicated on the approved Stormwater Management (SWM) Drawings.

### 3.11 PLANT MAINTENANCE

- A. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring plant pit saucers, adjusting and repairing tree-stabilization devices, resetting plants to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings.

- B. Contractor shall thoroughly water plantings on a weekly basis for the first 30 days. For three months following the initial 30 day period following installation, Contractor shall water plantings thoroughly on a bi-weekly basis.
  - 1. Watering beyond the above noted timeframes shall be at the discretion of the Contractor pursuant to keeping the plants in a healthy, live condition.
  - 2. Contractor shall supply all the necessary water.
- C. Fill in, as necessary, Planting Mix subsidence that may occur because of settling or other processes.
  - 1. Replace decomposed mulch materials, and materials damaged or lost in areas of subsidence.
- D. Apply chemical treatments as necessary to maintain plant materials, plant bed areas, and Planting Mixes free of pests and pathogens or disease.
  - 1. Use integrated pest management practices when possible to minimize use of pesticides and reduce hazards.
  - 2. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.
- E. At the end of the warranty period, and prior to Final Inspection, the Contractor shall remove all guy wires and stakes.

### 3.12 PESTICIDE APPLICATION

- A. Apply pesticides and other chemical products and biological control agents according to authorities having jurisdiction and manufacturer's written recommendations.
  - 1. Coordinate applications with Owner's operations and others in proximity to the Work.
  - 2. Notify Owner a minimum of five (5) working days prior to each application.
- B. Pre-Emergent Herbicides (Selective and Nonselective): Apply to tree, shrub, and ground-cover areas according to manufacturer's written recommendations.
  - 1. Do not apply to seeded areas.
- C. Post-Emergent Herbicides (Selective and Nonselective): Apply only as necessary to treat already-germinated weeds and according to manufacturer's written recommendations.

### 3.13 REPAIR AND REPLACEMENT

- A. General: Repair or replace existing or new trees and other plants that are damaged by construction operations, in a manner approved by Landscape Architect.
  - 1. Submit details of proposed pruning and repairs.
  - 2. Perform repairs of damaged trunks, branches, and roots within 24 hours, if approved.

3. Replace trees and other plants that cannot be repaired and restored to full-growth status, as determined by Landscape Architect.
- B. Remove and replace trees that are more than 25 percent dead, the main leader has died back, or otherwise in an unhealthy condition before the end of the corrections period or are damaged during construction operations that Landscape Architect determines are incapable of restoring to normal growth pattern.
1. Provide new trees of same size as those being replaced for each tree of 6 inches or smaller in caliper size.
  2. Provide two new tree(s) of 6-inch caliper size for each tree being replaced that measures more than 6 inches in caliper size.
  3. Species of Replacement Trees: Same species as originally installed unless approved otherwise by the Landscape Architect.
- C. Damage to existing conditions and utilities shall be repaired and restored at the expense of the Contractor.

### 3.14 CLEANING AND PROTECTION

- A. During planting, keep adjacent paving and construction clean and work area in an orderly condition.
1. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.
- B. Remove surplus soil and waste material including excess subsoil, unsuitable soil, trash, and debris and legally dispose of them off Owner's property.
- C. Protect plants from damage due to landscape operations and operations of other contractors and trades.
1. Maintain protection during installation and maintenance periods.
  2. Treat, repair, or replace damaged plantings.
- D. After installation and before Substantial Completion, remove nursery tags, nursery stakes, tie tape, labels, wire, burlap, and other debris from plant material, planting areas, and Project site.
- E. At time of Substantial Completion, verify that tree-watering devices are in good working order and leave them in place.
1. Replace improperly functioning devices.

### 3.15 MAINTENANCE SERVICE

- A. Maintenance Service for Trees and Shrubs: Provide maintenance by skilled employees of landscape Installer.
1. Maintain as specified in Article 3.11 - "Plant Maintenance."

2. Begin maintenance immediately after plants are installed and continue until plantings are acceptably healthy and well established, but for not less than maintenance period below:
  3. Maintenance Period: 12 months shall include two full growing seasons after the date of Substantial Completion of the Project.
- B. Maintenance Service for Ground Cover and Other Plants: Provide maintenance by skilled employees of landscape Installer. Maintain as required in Article 3.11 - "Plant Maintenance".
1. Begin maintenance immediately after plants are installed and continue until plantings are acceptably healthy and well established, but for not less than maintenance period below:
  2. Maintenance Period: 12 months shall include two full growing seasons after the date of Substantial Completion of the Project.

END OF SECTION 329300

## SECTION 334100 - STORM DRAINAGE UTILITIES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Pipe and fittings.
  - 2. Inlets.
  - 3. Pipe outfalls and end sections.
  - 4. Stormwater management (SWM) structures and facilities.
- B. Related requirements:
  - 1. Section 334600 “Subdrainage” for subsurface drainage requirements.

#### 1.3 DEFINITIONS

- A. HDPE: High density polyethylene pipe
- B. PVC: Polyvinyl chloride pipe.

#### 1.4 QUALITY ASSURANCE

- A. Baltimore County, Department of Public Works, Standard Specifications for Construction and Materials (BCDPW), latest edition as amended to date.
  - 1. Measurement and payment provisions included in standard Specifications do not apply to Section 334100.
- B. Baltimore County, Department of Public Works, Standard Details for Construction, latest edition as amended to date.
- C. Baltimore County, Department of Public Works, Division of Construction Contracts Administration, Source of Supply, latest edition, as amended to date.

### 1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
  - 1. Polymer concrete channel drainage systems: Include plans, sections, details, frames, grates, covers.
  - 2. SWM Facilities: Include control structure components, details, frames, grates and related components.
- B. BCDPW Standard Details:
  - 1. Include standard details for pre-cast concrete manholes, inlets, pipe outfalls, frames, grates, and covers.

### 1.6 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For each type of pipe and fitting, from manufacturer.
  - 1. Aggregate materials.
  - 2. Concrete design-mix reports.
- B. Field quality-control reports.

### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Do not store plastic components, pipe, and fittings in direct sunlight.
- B. Protect pipe, pipe fittings, and seals from dirt and damage.
- C. Handle manholes, inlets and pipe outfalls according to manufacturer's written rigging instructions.

### 1.8 PROJECT CONDITIONS

- A. Interruption of Existing Utilities: Do not interrupt service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary service according to requirements indicated:
  - 1. Notify Construction Manager and Owner no fewer than five days in advance of proposed interruption of service.
  - 2. Do not proceed with interruption of service without Construction Manager's and Owner's written permission.

## PART 2 - PRODUCTS

### 2.1 GENERAL

- A. All products shall be in accordance with BCDPW Specifications and Standard Details as applicable.

### 2.2 HDPE PIPE AND FITTINGS

- A. Corrugated HDPE Drainage Pipe and Fittings NPS 3 to NPS 10: AASHTO M 252M, Type S, with smooth interior waterway.
  - 1. Silttight Couplings: PE sleeve with ASTM D1056, Type 2, Class A, Grade 2 gasket material that mates with tube and fittings.
- B. Corrugated PE Pipe and Fittings NPS 12 to NPS 60: AASHTO M 294M, Type S, with smooth waterway for coupling joints.
  - 1. Silttight Couplings: PE sleeve with ASTM D1056, Type 2, Class A, Grade 2 gasket material that mates with pipe and fittings.

### 2.3 PVC PIPE AND FITTINGS

- A. PVC Type PSM Drainage Piping:
  - 1. Pipe: ASTM D3034, SDR 35 or as indicated, PVC Type PSM drainage pipe with bell-and-spigot ends for gasketed joints.
  - 2. Foam-core pipe (ASTM F891) is not an acceptable alternative to the ASTM D3034 PVC Type PSM pipe specified.
  - 3. Fittings: ASTM D3034, PVC with bell ends.
  - 4. Gaskets: ASTM F477, elastomeric seals.

### 2.4 BEDDING FOR PIPES AND MANHOLES

- A. Bedding for pipes and manholes shall be #57 washed aggregate in accordance with BCDPW Specifications.

### 2.5 CONCRETE

- A. General: Cast-in-place concrete in accordance with BCDPW Specifications:
  - 1. Cement: ASTM C 150, Type II.
  - 2. Fine Aggregate: ASTM C 33, sand.
  - 3. Coarse Aggregate: ASTM C 33, crushed gravel.
  - 4. Water: Potable.

- B. Portland Cement Design Mix: Mix No. 3 (3500 psi minimum) in accordance with BCDPW Specifications.

## 2.6 INLETS

- A. Standard Precast Concrete Inlets: In accordance with BCDPW Specifications and Standard Details, as indicated on the Drawings.
  - 1. Description: ASTM C478, precast, reinforced concrete, of depth indicated, with provision for sealant joints.
  - 2. Pipe Connectors: ASTM C923, resilient, of size required, for each pipe connecting to base section.
  - 3. Frames and Grates: In accordance with BCDPW Specifications and Standard Details.
- B. PVC Drainage Basins, Inlets, and Water Control Structures
  - 1. Shall be as manufactured by the following, or approved equal:
    - Nyloplast
    - 3130 Verona Avenue
    - Buford, GA 30518
    - Telephone: 866-932-2443
  - 2. Configuration of drainage basins, in-line drains, water control structures, incoming and outgoing pipes, frames and grates shall be as indicated on the Drawings.

## 2.7 STORMWATER MANAGEMENT CONTROL STRUCTURES

- A. As indicated on the approved SWM Drawings.

## 2.8 PIPE OUTLETS AND END SECTIONS

- A. In accordance with BCDPW Specifications and Standard Details.
- B. End Sections: As indicated on the Drawings.

## PART 3 - EXECUTION

### 3.1 GENERAL

- A. Installation shall be in accordance with BCDPW Specifications, standard details, and the Baltimore County Plumbing Code as applicable, unless indicated otherwise on the Drawings.

### 3.2 EARTHWORK

- A. Excavation, trenching, and backfilling are specified in Section 312000 "Earth Moving."

### 3.3 PIPING INSTALLATION

- A. General Locations and Arrangements: Drawing plans and details indicate general location and arrangement of underground storm drainage piping. Location and arrangement of piping layout take into account design considerations. Install piping as indicated, to extent practical. Where specific installation is not indicated, follow piping manufacturer's written instructions.
- B. Install piping beginning at low point, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements.
- C. Install proper size increasers, reducers, and couplings where different sizes or materials of pipes and fittings are connected. Reducing size of piping in direction of flow is prohibited.
- D. When installing pipe under streets or other obstructions that cannot be disturbed, use pipe-jacking process or microtunneling.
- E. Install gravity-flow, nonpressure drainage piping according to the following:
  - 1. Install piping pitched down in direction of flow.
  - 2. Install HDPE corrugated storm drain piping according to ASTM D 2321 and the manufacturer's recommendations.
  - 3. Install PVC profile gravity storm drainage piping according to ASTM D 2321 and ASTM F 1668 and the manufacturer's recommendations.
  - 4. Install reinforced-concrete culvert piping according to ASTM C 1479 and ACPA's "Concrete Pipe Installation Manual."

### 3.4 PIPE JOINT CONSTRUCTION

- A. Join gravity-flow, nonpressure drainage piping according to the following:
  - 1. Join corrugated HDPE piping according to ASTM D 3212 for push-on joints, and the manufacturer's recommendations.
  - 2. Join PVC storm drain piping according to ASTM D 2321 and ASTM D 3034 for elastomeric-seal joints or ASTM D 3034 for elastomeric-gasketed joints, and the manufacturer's recommendations.
  - 3. Join reinforced-concrete sewer piping according to ACPA's "Concrete Pipe Installation Manual" for rubber-gasketed joints.

### 3.5 INLET INSTALLATION

- A. Construct catch basins to sizes and shapes indicated, and in accordance with BCDPW Specifications and Standard Details.
- B. Set frames and grates to elevations indicated.

### 3.6 PIPE OUTLET AND END SECTION INSTALLATION

- A. Construct inlet head walls, aprons, and sides of reinforced concrete, as indicated, and in accordance with BCDPW Specifications and Standard Details.
- B. Install pipe outlets that spill onto grade, with flared end sections that match pipe, where indicated, and in accordance with BCDPW Specifications and Standard Details.

### 3.7 CONCRETE PLACEMENT

- A. Place cast-in-place in accordance with BCDPW Specifications.

### 3.8 STORMWATER MANAGEMENT (SWM) CONTROL STRUCTURES AND DRAINAGE SYSTEM INSTALLATION

- A. Install as indicated on the approved SWM Drawings.
- B. Piping Systems: Excavate trenches of width and depth, and install piping system, filter fabric, and all components. Backfill in accordance with the piping manufacturer's written instructions and the approved SWM Drawings.

### 3.9 CONNECTIONS

- A. Make connections to existing piping.
  - 1. Use commercially manufactured wye fittings for piping branch connections. Remove section of existing pipe; install wye fitting into existing piping; and encase entire wye fitting, plus 6-inch overlap, with not less than 6 inches of concrete with 28-day compressive strength of 3000 psi.
  - 2. Make branch connections from side into existing piping as indicated, or to existing manholes and structures by cutting into existing unit and creating an opening large enough to allow 3 inches of concrete to be packed around entering connection. Cut end of connection pipe passing through pipe or structure wall to conform to shape of and be flush with inside wall unless otherwise indicated. On outside of pipe, manhole, or structure wall, encase entering connection in 6 inches of concrete for minimum length of 12 inches to provide additional support of collar from connection to undisturbed ground.
    - a. Use concrete that will attain a minimum 28-day compressive strength of 3000 psi unless otherwise indicated.
    - b. Use epoxy-bonding compound as interface between new and existing concrete and piping materials.
  - 3. Protect existing piping, manholes, and structures to prevent concrete or debris from entering while making tap connections. Remove debris or other extraneous material that may accumulate.

### 3.10 CLOSING ABANDONED STORM DRAINAGE SYSTEMS

- A. General: In accordance with BCDPW Specifications and Standard Details.
- B. Abandoned Piping: Close open ends of abandoned underground piping indicated to remain in place. Include closures strong enough to withstand hydrostatic and earth pressures that may result after ends of abandoned piping have been closed. Use either procedure below:
  - 1. Close open ends of piping with at least 8-inchthick, brick masonry bulkheads.
  - 2. Close open ends of piping with threaded metal caps, plastic plugs, or other acceptable methods suitable for size and type of material being closed. Do not use wood plugs.
- C. Abandoned Manholes and Structures: Excavate around manholes and structures as required and use one procedure below:
  - 1. Remove manhole or structure and close open ends of remaining piping.
  - 2. Remove top of manhole or structure down to at least 36 inches below final grade. Fill to within 12 inches of top with stone, rubble, gravel, or compacted dirt. Fill to top with concrete.
- D. Backfill to grade according to Section 312000 "Earth Moving."

### 3.11 IDENTIFICATION

- A. Materials and their installation are specified in Section 312000 "Earth Moving." Arrange for installation of green warning tape directly over piping and at outside edge of underground structures.
  - 1. Use detectable warning tape over ferrous piping.
  - 2. Use detectable warning tape over nonferrous piping and over edges of underground structures.

### 3.12 FIELD QUALITY CONTROL

- A. General: In accordance with BCDPW Specifications.
- B. Inspect interior of piping to determine whether line displacement or other damage has occurred. Inspect after approximately 24 inches of backfill is in place, and again at completion of Project.
  - 1. Submit separate reports for each system inspection.
  - 2. Repair or replace defective workmanship in accordance with BCDPW Specifications.
  - 3. Replace defective piping using new materials, and repeat inspections until defects are within allowances specified.
  - 4. Reinspect and repeat procedure until results are satisfactory.
- C. Inspect new piping systems, and parts of existing systems that have been altered, extended, or repaired, for leaks and defects in accordance with BCDPW Specifications.
  - 1. Do not enclose, cover, or put into service before inspection and approval.

2. Inspect completed piping systems in accordance with BCDPW Specifications.
  3. Schedule inspections by authorities having jurisdiction with at least 24 hours' advance notice.
  4. Submit separate report for each inspection.
  5. Gravity-Flow PVC Storm Drainage Piping: Inspect according to requirements of UNI-B-6.
- D. Leaks constitute defects that must be repaired.
- E. Replace leaking piping using new materials, and repeat inspections until leakage is within allowances specified.

### 3.13 CLEANING

- A. Clean interior of piping of dirt and superfluous materials. Flush with water.

END OF SECTION 334100

## SECTION 334600 - SUBDRAINAGE

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:

1. Perforated and non-perforated wall pipe and fittings.
2. Geotextile filter fabric.
3. Cleanouts.
4. Subsurface drainage system for artificial turf fields.

- B. Related Requirements:

1. Section 312000 "Earth Moving" for excavation, subgrade preparation, drainage and soil backfill materials, compaction, and related requirements.
2. Section 334100 "Storm Drainage Utilities" for exterior on-site storm drainage systems.

#### 1.3 ACTION SUBMITTALS

- A. Product Data:

1. Pipe, couplings and fittings.
2. Geotextile filter fabric.

#### 1.4 QUALITY ASSURANCE

- A. Geotechnical Report: "Geotechnical Engineering Report, Baltimore County On-Call RFP No. 2021-05, Cloverland Park Cricket Field", Phoenix, MD, SaLUT-TLB Reference Number 22-0007.01, dated April 26, 2024 and prepared by SaLUT-TLB, 530 McCormick Drive, Suite S, Glen Burnie, MD 21061 Telephone: 443.5773.1600 Website: [www.SaLUTinc.com](http://www.SaLUTinc.com)
- B. Refer to the Project's "Geotechnical Engineering Report" referenced above for subdrainage considerations and recommendations.

## PART 2 - PRODUCTS

### 2.1 PIPE AND FITTINGS

#### A. Slotted and Non-Slotted HDPE Pipe and Fittings:

1. Pipe: 6-inch and Smaller: ASTM F667 or AASHTO M 252, Type CP; corrugated, for soil-tight coupled joints.
  - a. Perforations for 6-inch and smaller pipe shall be Type B, 3-slot pattern (120° apart), with two rows of standard perforations near the bottom of the pipe, and one row of standard perforations at the top of the pipe.
2. Couplings: Manufacturer's standard, split or snap type.
3. Fittings: ASTM F667, AASHTO M 252 or AASHTO M 294.

#### B. PVC, Schedule 40, Storm Drainage Pipe and Fittings:

1. Pipe: ASTM D1784, ASTM D1785, ASTM D2665, and ASTM F758 as applicable for Schedule 40, or schedule indicated, PVC storm drainage pipe with plain and bell ends for solvent-weld joints.
2. PVC Fittings for Schedule 40 Pipe: ASTM D1784 and ASTM D2466.
3. Primers and Solvent Cements: ASTM F656 and ASTM D2564.
4. Foam-core pipe (ASTM F891) is not an acceptable alternative to the Schedule 40 pipe specified.
5. Refer to the Drawings for locations of PVC non-perforated and perforated pipe, and the specific arrangement of perforations on the pipe as applicable. Stormwater Management (SWM) facilities have specific requirements for the number and arrangement of perforations on pipe underdrains.

### 2.2 SOIL MATERIALS

- A. Satisfactory soil and drainage course aggregate materials are specified in Section 31 20 00 "Earth Moving."

### 2.3 GEOTEXTILE FILTER FABRIC

- A. Description: Non-woven fabric of polypropylene, with a minimum flow rate of 110 gal/min/ft<sup>2</sup> in accordance with ASTM D4491.
- B. Structure Type: Nonwoven, needle-punched continuous filament.
  1. Application SD, Type 1, AASHTO M 288, Class 2.
  2. Grab Tensile Strength: Minimum 160 lbf in accordance with ASTM D4632.
  3. CBR Puncture Strength: Minimum 410 lbf in accordance with ASTM D6241.
  4. Style: Flat, in rolls.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine surfaces and areas for satisfactory conditions where subdrainage systems are to be installed.
- B. Locate and mark existing utilities, underground structures, and aboveground obstructions before beginning subdrainage installation and avoid disruption and damage to utility services.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 EARTHWORK

- A. Excavating, trenching, backfilling, and compaction are specified in Section 312000 "Earth Moving."

3.3 Subdrainage System Installation - General: Refer to referenced ASTM Standards and publications that govern the installation of piping materials, and the "Field Quality Control" Article below for inspection and testing requirements of drainage piping prior to installation of drainage courses above the piping system.

3.4 Subsurface Drain System for Artificial Turf Fields: Refer to the Drawings for location of subdrainage pipe systems and associated drainage courses.

- A. Prepare subgrade to support subdrainage pipe and storm drainage inlet/control structures.
- B. Where indicated, install geotextile fabric.
- C. Install storm drainage inlet/control structures and initial drainage course to depths indicated upon prepared subgrade.
- D. Install underdrain pipe and encase with drainage course around the pipe as indicated, and properly consolidate with a minimum of two (2) passes of a plate-type vibratory compactor.
- E. Uniformly consolidate each additional drainage course layer with a minimum of two passes of a plate-type vibratory compactor.
- F. Where indicated, install overdrain pipe and encase with drainage course material around and above the pipe, and properly consolidate with a minimum of two (2) passes of a plate-type vibratory compactor.
- G. Install artificial turf as indicated above drainage course.

### 3.5 PIPING INSTALLATION

- A. General: In accordance with ASTM D2321 for HDPE pipe or ASTM D2729 and ASTM F1668 for PVC pipe as applicable, and as recommended by the manufacturer
- B. Install piping beginning at low points of system, true to grades and alignment indicated, with unbroken continuity of invert. Bed piping with full bearing in drainage course material. Install gaskets, seals, sleeves, and couplings according to manufacturer's written instructions and other requirements indicated.
- C. Subsurface Drain System for Artificial Turf Fields: Install storm drainage inlet/control structures and piping as indicated on the Drawings.
  - 1. Lay perforated PVC pipe with perforations down.
  - 2. Use increasers, reducers, and couplings made for different sizes or materials of pipes and fittings being connected. Reduction of pipe size in direction of flow is prohibited.

### 3.6 PIPE JOINT CONSTRUCTION

- A. Join HDPE pipe and fittings with couplings according to ASTM D2321 with coupled joints.
- B. Join perforated PVC storm drain pipe and fittings according to ASTM D3212 with elastomeric seals or D2729 for solvent-welded joints.
- C. Special Pipe Couplings: Join piping made of different materials and dimensions with special couplings made specifically for this application. Use couplings that are compatible with and properly accept the dimensions of both types of pipe.

### 3.7 CLEANOUT INSTALLATION

- A. Comply with requirements for cleanouts specified in Section 334100 "Storm Drainage Utilities".
- B. Cleanouts for Foundation, Retaining-Wall, and Landscaping Subdrainage Systems:
  - 1. Install cleanouts from subdrainage piping up to meet proposed finish grade. Locate cleanouts at beginning of piping run and at changes in direction. Install fittings so cleanouts open in direction of flow in piping.
  - 2. In vehicular-traffic areas, use heavy-duty cast-iron soil pipe and fittings for piping branch fittings and riser extensions, and encase in Mix #3 concrete to reach proposed finish grade. As indicated, surround the cleanout frame with proposed paving. Set top of cleanout frame and cover flush with surrounding proposed finish grade of paving.
  - 3. In non-vehicular-traffic areas, use non-perforated PVC pipe and fittings for piping branch fittings and riser extensions to reach clean out. As indicated, set cleanout frames and covers in a Mix #3 cast-in-place concrete anchor pad, 12" x 12" square by 4-inch deep, as indicated. Set top of cleanout flush with proposed finish grade.
  - 4. Comply with requirements for concrete specified in Section 321313 "Concrete Paving".

### 3.8 CONNECTIONS

- A. Comply with requirements for piping specified in Section 334100 "Storm Drainage Utilities" and in accordance with manufacturer's recommendations. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Connect low elevations of subdrainage pipe system with subdrainage pipe, extend to and connect with the on-site storm drainage system as indicated, or "daylight" the subdrainage pipe outfall with a beveled end section at an at-grade location as indicated.

### 3.9 IDENTIFICATION

- 1. Arrange for installation of green detectable warning tape directly over subdrainage system piping. Comply with requirements for detectable warning tape specified in specified in Section 312000 "Earth Moving."

### 3.10 FIELD QUALITY CONTROL

- A. Tests and Inspections:
  - 1. After installing drainage course to top of piping, inspect each section of the subdrainage system to confirm satisfactory draining of piping, using potable water, to ensure the system freely and completely drains prior to installing additional drainage courses. Allow Geotechnical Testing Agency to observe subdrainage system installation and testing prior to backfilling.
  - 2. If the system does not drain freely and completely, inspect and remove obstructions, replace damaged components, and other necessary tasks as required. Repeat test until results are satisfactory.
  - 3. Submit satisfactory test results to the Owner's Representative for review and approval.
- B. Drain piping will be considered defective if it does not pass inspections and testing.

### 3.11 CLEANING

- A. Maintain a clean interior of installed piping and structures as work progresses.
  - 1. Remove dirt, debris, and other superfluous material as the installation proceeds.
  - 2. Place temporary plugs in ends of uncompleted piping in the system at end of each day.

END OF SECTION 334600

## **SPECIAL PROVISIONS**

### **Builder's Risk Insurance**

- A. The Contractor shall, at his/her own cost, insure the work and keep it insured at all times during the period of construction, and until final acceptance of it by the County against loss of damage covered by an "All Risk" Builders Risk type of policy. The amount of insurance shall be the 100% estimated replacement cost of the work.
- B. The policies shall be made payable to the County and the Contractor, as their interest may appear, and the policies shall be left in the possession of the Engineer, prior to the start of construction.

# **SECTION III**

## **Permits**



Baltimore County, Maryland
Department of Permits, Approvals, and Inspections
BUILDING PERMIT

Permit Number: CEN25-000002

Permit Type: Commercial Environmental

Sub Type: Grading

Date Issued: 05/07/2025

Expiration Date: 05/06/2027

Table with 2 columns: Property Information and Lot Size and Setbacks. Property Information includes address, city, tax ID, district, and use details. Lot Size and Setbacks includes size and setback measurements for front, rear, and side yards.

Owner Information

Owner: BALTIMORE COUNTY MARYLAND
Owner Address: 12--R-390 400 WASHINGTON AVE, TOWSON, MD, 21204
Tenant: Applicant: Shivanee Moberly

C. Pete Gutwald, AICP, Director

E. John Bryan, Building Engineer

\*Please log into your account to get up-to-date information regarding the permit process and related inspections. Refer to the Permit Number when making inquires.



Baltimore County, Maryland
Department of Permits, Approvals, and Inspections
BUILDING PERMIT

Permit Number: CEN25-000002

Permit Type: Commercial Environmental

Sub Type: Grading

Date Issued: 05/07/2025

Expiration Date: 05/06/2027

Building Permit Contractor

Name of Contractor: TBD

Phone Number:

Address:

City, State, Zip: , ,

Is Owner Contractor?:

Building Permit Information

Description of Work: Grade 289,000sf for Cricket Field. Permit expires two years from date of issue. No construction to begin until pre-construction meeting. Failure to comply will result in penalties. Schedule your pre-construction meeting in your portal

[Handwritten signature of C. Pete Gutwald]

C. Pete Gutwald, AICP, Director

[Handwritten signature of E. John Bryan]

E. John Bryan, Building Engineer

\*Please log into your account to get up-to-date information regarding the permit process and related inspections. Refer to the Permit Number when making inquires.





**Baltimore County, Maryland**  
**Department of Permits, Approvals, and Inspections**  
**BUILDING PERMIT**

**Permit Number:** CEN25-000003

**Permit Type:** Commercial Environmental

**Sub Type:** Storm Water

**Date Issued:** 04/17/2025

**Expiration Date:** 04/16/2027

***Building Permit Contractor***

**Name of Contractor:** TBD

**Phone Number:**

**Address:**

**City, State, Zip:** , ,

**Is Owner Contractor?:**

***Building Permit Information***

**Description of Work:** Storm Water Management for 20.75 acres drainage area. Permit expires two years from date of issue. NO CONSTRUCTION TO BEGIN UNTIL PRE-CONSTRUCTION MEETING. FAILURE TO COMPLY WILL RESULT IN PENALTIES. SCHEDULE YOUR PRE-CONSTRUCTION MEETING IN YOUR PORTAL.

C. Pete Gutwald, AICP, Director

E. John Bryan, Building Engineer

\*Please log into your account to get up-to-date information regarding the permit process and related inspections. Refer to the Permit Number when making inquires.

## **SECTION I V**

### **Proposal**

**This Section to be  
Completed by Time of Bid**

**SECTION - IV**  
**PROPOSAL**

**DESCRIPTION OF WORK**

**Bid Opening via Teleconference WebEx: Thursday, July 10, 2025 @ 10:45 a.m. EST.**

**WebEx Phone Number 1-415-655-0001, Access Code Number 2309 817 9236##.**

**Begin Work Within Fifteen (15) Days After NOTICE TO PROCEED**

**Calendar Days for Completion: One Hundred Forty-Nine (149)**

**Liquidated and Other Damages: FIFTEEN HUNDRED DOLLARS (\$1500.00 PER CALENDAR DAY)**

**Cost Group "D" (\$1,000,001 to \$2,500,000) (Prequalified contractors with a Cost Group restriction must bid within the dollar amount stated on their Certificate of Prequalification)**

**Work Classification: M1**

**TO BALTIMORE COUNTY, MARYLAND:** Furnish and install all appurtenances, labor, materials for Cloverland Park Renovations and Enhancements. **Phoenix - District 10c3.**

**The following listed Drawing Number(s) are collectively the "Drawings", and are hereby incorporated in the Contract.**

<b><u>Workday Number</u></b>	<b><u>Drawing Number(s)</u></b>
<b>10000752</b>	<b>2025-1632 thru 1671</b>

A pre-bid meeting will be held on Wednesday, June 18, 2025 at 11:00 a.m. EST via WebEx. *Phone-In (Audio Only)* – 1-415-655-0001, Meeting Number 2314 392 4132##. *Video Conference* – Meeting Number 2314 392 4132 ,**Password: 9jZYJySZV72**, go to <https://signin.webex.com/join>, or for the WebEx link go to [www.baltimorecountymd.gov/departments/public-works/engineering/contracts/current-solicitations](http://www.baltimorecountymd.gov/departments/public-works/engineering/contracts/current-solicitations)

**NOTE: No successful bidder may withdraw their bid within NINETY (90) days after the opening thereof.**

The Contractor hereby declares that it has carefully examined the solicitation, plans and specifications, form of contract, Special Provisions and Drawings (collectively the "Contract Documents"). The Contractor also hereby declares that it has carefully examined the September 2023 "Standard Specifications for Construction and Materials" and "Standard Details for Construction", collectively the "Applicable County Law" and any and all Department of Public Works and Transportation revisions thereto as of the date of advertisement. The Contract Documents, the Applicable County Law and the Department of Public Works and Transportation revisions thereto are collectively the "Specifications" and are incorporated herein. Copies of any and all Department of Public Works and Transportation revisions including but not limited to the General Conditions Building Projects, are available online at [www.baltimorecountymd.gov/departments/public-works/standards](http://www.baltimorecountymd.gov/departments/public-works/standards). Also, the Contractor has, to its satisfaction, examined the locality of the proposed work and agrees to furnish all labor, tools, materials, machinery, equipment, and other means of construction called for in the manner provided in the Specifications for the prices shown on the next page(s) and as evidenced by Contractor's signature on the last page thereof.

**SCHEDULE OF PRICES**

**NOTE: The Bidder shall fill out this Proposal, write in the unit prices in clear numerals, and make the extensions.**

**For complete information concerning these items, see Specifications and contract forms.**

# CONTRACT PROPOSAL

Cloverland Park Renovations & Enhancements - 12340 Dullaney Valley Road, Phoenix, Maryland 21131

CONTRACT NUMBER: 25067 GX0

WORKDAY NUMBER: 10000752

JOB ORDER NUMBER: N/A

CALENDAR DAYS: 149

**CONTRACTOR:** \_\_\_\_\_  
**ADDRESS:** \_\_\_\_\_  
**PHONE:** \_\_\_\_\_

BID ITEM	COMM. CODE		DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL AMOUNT
1	0	0000	CLOVERLAND PARK RENOVATIONS & ENHANCEMENTS - BASE BID	LS	1		\$
2	0	0000	ALTERNATE #1 FURNISH & ERECT PAVILIONS AND FOUNDATIONS	LS	1		\$
3	0	0000	BASE BID + ALTERNATE #1 TOTAL				\$
4	0	0000	ALTERNATE #2 FURNISH & INSTALL SHEDD AND FOUNDATIONS	LS	1		\$
5	0	0000	BASE BID + ALT #1 + ALT #2 TOTAL				\$
6	0	0000	ALTERNATE #3 PROVIDE ASPHALT PAVING ILO STONE DRIVEWAY	LS	1		\$
7	0	0000	BASE BID + ALT #1 + ALT #2 TOTAL + ALT #3 TOTAL				\$
8	0	0000	ALTRNATE #4 FURNISH & INSTALL BLEACHERS AND FOUNDATIONS	LS	1		\$
9	0	0000	BASE BID + ALT #1 + ALT #2 + ALT #3 + ALT #4 GRAND TOTAL				\$
<b>TOTAL COST FOR CONTRACT</b>							<b>\$</b>

\_\_\_\_\_  
 TOTAL COST FOR CONTRACT IN WORDS

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OFFICER SIGNATURE

---

TITLE

# PROPOSAL AFFIDAVIT

## 1. AUTHORIZED REPRESENTATIVE

I HEREBY AFFIRM THAT:

I am the [title] \_\_\_\_\_ and the duly authorized representative of [business] \_\_\_\_\_ (the "Business") and that I possess the legal authority to make this Affidavit on behalf of myself and the Business for which I am acting.

## 2. PROPOSAL CERTIFICATION

THE UNDERSIGNED HEREBY ACKNOWLEDGES receipt of the following Addenda (list by number and date):

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Accompanying this Proposal is a Bid Bond in an amount of 5% of the bid, the exact amount to be determined by the difference between the low bid and the next lowest bid, if two or more bids are received, or 5% of the bid if one bid is received. This guarantees payment to Baltimore County of the amount thus determined as liquidated damages in case of default in any matter specified as required before award or in any matter resulting in failure to execute and deliver an Agreement, together with Payment and Performance Bonds, after award.

## 3. AFFIRMATION REGARDING BRIBERY CONVICTIONS

I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the Business, nor any of its officers, directors, partners, or any of its employees directly involved in obtaining or performing contracts with public bodies (as is defined in Section 16-101(f) of the State Finance and Procurement Article of the Annotated Code of Maryland), has been convicted of, or has had probation before judgment imposed pursuant to Section 6-225 of the Criminal Procedure Article of the Annotated Code of Maryland, or has pleaded nolo contendere to a charge of, bribery, attempted bribery, or conspiracy to bribe in violation of Maryland law, or of the law of any other state or federal law, except as follows [indicate the reasons why the affirmation cannot be given and list any conviction, plea, or imposition of probation before judgment with the date, court, official or administrative body, the sentence or disposition, the name(s) of person(s) involved, and their current positions and responsibilities with the Business]:

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## 4. AFFIRMATION REGARDING OTHER CONVICTIONS

I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the Business, nor any of its officers, directors, partners, or any of its employees directly involved in obtaining or performing contracts with public bodies, has:

(1) Been convicted under state or federal statute of a criminal offense incident to obtaining, attempting to obtain, or performing a public or private contract, fraud, embezzlement, theft, forgery, falsification or destruction of records, or receiving stolen property;

(2) Been convicted of any criminal violation of a state or federal antitrust statute;

(3) Been convicted under the provisions of Title 18 of the United States Code for violation of the Racketeer Influenced and Corrupt Organization Act, 18 U.S.C. §1961, et seq., or the Mail Fraud Act, 18 U.S.C. §1341, et seq., for acts arising out of the submission of bids or proposals for a public or private contract;

(4) Been convicted of a violation of the State Minority Business Enterprise Law, Section 14-308 of the State Finance and Procurement Article of the Annotated Code of Maryland;

(5) Been convicted of conspiracy to commit any act or omission that would constitute grounds for conviction or liability under any law or statute described in subsection (1), (2), (3), or (4) above;

(6) Been found civilly liable under a state or federal antitrust statute for acts or omissions in connection with the submission of bids or proposals for a public or private contract;

(7) Admitted in writing or under oath, during the course of an official investigation or other proceedings, acts or omissions that would constitute grounds for conviction or liability under any law or statute described above, except as follows [indicate reasons why the affirmations cannot be given, and list any conviction, plea, or imposition of probation before judgment with the date, court, official or administrative body, the sentence or disposition, the name(s) of the person(s) involved and their current positions and responsibilities with the Business, and the status of any debarment]:

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**5. AFFIRMATION REGARDING DEBARMENT**

I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the Business, nor any of its officers, directors, partners, or any of its employees directly involved in obtaining or performing contracts with public bodies, has ever been suspended or debarred (including being issued a limited denial of participation) by any public entity, except as follows [list each debarment or suspension providing the dates of the suspension or debarment, the name of the public entity and the status of the proceeding, the name(s) of the person(s) involved and their current positions and responsibilities with the Business, the grounds of the debarment or suspension, and the details of each person's involvement in any activity that formed the grounds of the debarment or suspension]:

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**6. AFFIRMATION REGARDING DEBARMENT OF RELATED ENTITIES**

I FURTHER AFFIRM THAT:

(1) The Business was not established and it does not operate in a manner designed to evade the application of or defeat the purpose of debarment pursuant to Sections 16-101, et seq., of the State Finance and Procurement Article of the Annotated Code of Maryland; and

(2) The Business is not a successor, assignee, subsidiary, or affiliate of a suspended or debarred business, except as follows: [you must indicate the reasons why the affirmations cannot be given without qualification]:

**7. SUB-CONTRACT AFFIRMATION**

I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the Business, has knowingly entered into a contract with a public body under which a person debarred or suspended under Title 16 of the State Finance and Procurement Article of the Annotated Code of Maryland will provide, directly or indirectly, supplies, services, architectural services, construction related services, leases of real property, or construction.

**8. AFFIRMATION REGARDING COLLUSION**

I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the Business, nor any of its officers, directors, members or partners, nor any of its employees, have in any way:

(1) Agreed, conspired, connived, or colluded to produce a deceptive show of competition in the compilation of the accompanying bid or offer that is being submitted;

(2) In any manner, directly or indirectly, entered into any agreement of any kind to fix the bid price or price proposal of the bidder or offeror or of any competitor, or otherwise take any action in restraint of free competitive bidding in connection with the contract for which the accompanying bid or offer is submitted;

(3) Colluded with anyone to obtain information concerning the bid that would give the Business an unfair advantage over others.

**9. POLITICAL CONTRIBUTION DISCLOSURE AFFIRMATION**

I FURTHER AFFIRM THAT:

The Business affirms that it is aware of, and will comply with, the provisions of Sections 14- 101 through 14-108 of the Election Law Article of the Annotated Code of Maryland, which require that every person who makes, during any 12-month period, one or more contracts, with one or more Maryland governmental entities involving cumulative consideration, or at least \$200,000.00, shall file with the State Board of Elections certain specified information to include disclosure of attributable political contributions in excess of \$500 during defined reporting periods.

**10. CERTIFICATION OF CORPORATION REGISTRATION AND TAX PAYMENT**

I FURTHER AFFIRM THAT:

(1) The Business is a \_\_\_\_\_(State) (Corporation), (LLC), (Partnership), (Sole Proprietor/Individual), (Other:\_\_\_\_\_), that it **is** registered in accordance with the Corporations and Associations Article of the Annotated Code of Maryland, that it **is** in good standing in the State of Maryland, and that it **has** filed all of its annual reports, together with filing fees, with the Maryland State Department of Assessments and Taxation, and that the name and address of its resident agent filed with the State Department of Assessments and Taxation is:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_  
(If none, so state)

(2) Except as validly contested, the Business has paid, or has arranged for payment of, all taxes due the State of Maryland and Baltimore County, and has filed all required returns and reports with the Comptroller of the Treasury, the State Department of Assessments and Taxation, and the Employment Security Administration, as applicable, and will have paid all withholding taxes due the State of Maryland prior to final settlement.

## **11. CONTINGENT FEES**

I FURTHER AFFIRM THAT:

The Business has not employed or retained any person, partnership, corporation, or other entity, other than a bona fide employee or agent working for the Business, to solicit or secure the Contract, and that the Business has not paid or agreed to pay any person, partnership, corporation, or other entity, other than a bona fide employee or agent, any fee or other consideration contingent on the making of the Contract.

## **12. NONDISCRIMINATION IN EMPLOYMENT STATEMENT**

I FURTHER AFFIRM THAT:

During the performance of any contract awarded of which this affidavit is a part:

(1) The Business will not discriminate against any employee or applicant for employment because of race, color, religion, sex, age, national origin, marital status, sexual orientation, genetic information, or disability unrelated in nature and extent so as to reasonably preclude the performance of the employment, or because of the individual's refusal to submit to a genetic test or make available the results of a genetic test. The Business will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, age, national origin, marital status, sexual orientation, genetic information, or disability unrelated in nature and extent so as to reasonably preclude the performance of the employment, or because of the individual's refusal to submit to a genetic test or make available the results of a genetic test. Such action shall include, but not be limited to the following: employment, promotion, upgrading, demotion or transfer, rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Business agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the owner setting forth provisions of this nondiscrimination clause.

(2) The Business will, in all solicitations or advertisements for employees placed by or on behalf of the Business, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, age, national origin, marital status, sexual orientation, genetic information, or disability unrelated in nature and extent so as to reasonably preclude the performance of the employment, or because of the individual's refusal to submit to a genetic test or make available the results of a genetic test.

(3) The Business shall send to each labor union or representative of workers with which the Business has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the owner, advising the said labor union or workers' representative of these commitments, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The Business shall furnish, if requested by the County, a compliance report concerning our employment practices and policies in order for the County to ascertain compliance with the special provisions of this affidavit concerning nondiscrimination in employment.

(5) In the event of the Business's noncompliance with the nondiscrimination clause of this affidavit, the contract may be canceled, terminated, or suspended in whole or in part, and the Business may be declared ineligible for further County work.

(6) The Business shall include the special provisions outlined herein pertaining to nondiscrimination in employment in every subcontract, so that such nondiscrimination in employment provisions shall be binding on each subcontractor or vendor.

### **13. FOREIGN CONTRACTS**

I FURTHER AFFIRM THAT:

The Business affirms that it is aware of, and will comply with, the provisions of Sections 10-2-110 Article 10. Finance, Title 2 – Purchasing, Baltimore County Code 2003, which requires that prior to the award of a contract for services under the provisions of this title, and during the entire term of a contract award, the bidder or vendor shall disclose to the County whether any services covered by the bid or contract, including any subcontracted services, will be performed outside the United States. The disclosure shall be made to the Office of Budget and Finance, Purchasing Bureau.

### **14. MINORITY BUSINESS ENTERPRISE AND FEMALE CONTRACTORS**

THIS BUSINESS INTENDS to affirmatively seek out and consider minority business enterprises to participate in this contract as subcontractors and/or suppliers of materials and services.

THE UNDERSIGNED UNDERSTANDS AND AGREES: that any and all subcontracting of supplies and services in connection with this contract, whether undertaken before or after award of contract, will be in accordance with the Minority Business Enterprise and Female Contractor requirement included in the Bid Proposal package and incorporated herein as if fully set forth; and

THE UNDERSIGNED ALSO UNDERSTANDS AND AGREES that no subcontracting will be approved until Baltimore County has reviewed and approved the affirmative actions taken by this firm.

### **15. REQUIREMENTS FOR EXECUTING AFFIDAVIT & PROPOSAL**

The Affidavit must be signed in ink in order for the bid to be accepted and that the Proposal must be typewritten or filled out in ink.

THE UNDERSIGNED ALSO UNDERSTANDS that:

Proposals submitted by an INDIVIDUAL must be signed by an individual.

Proposals submitted by a PARTNERSHIP must be signed by the partner who is legally authorized authority to bind the partnership. Attach a copy of the Partnership Agreement and a duly certified resolution evidencing the authority of the partner so signing on behalf of the partnership.

Proposals submitted by a CORPORATION must be signed by a legally authorized officer of the corporation and attested to by the Corporate Secretary. Attach a copy of the Articles of Incorporation, By-Laws and a duly certified Board Resolution evidencing the authority of the officer so signing on behalf of the corporation.

Proposals submitted by a LIMITED LIABILITY COMPANY must be signed by a legally authorized member of the company and attested to. Attach a copy of the Operating Agreement, Articles of Organization and a duly certified resolution evidencing the authority of the member so signing on behalf of the limited liability company.

**NOTE:** The contractor may file with the County a list of the names of those officers, partners or members, as applicable, having legal authority to execute documents on behalf of and legally bind the contractor, duly certified, as applicable and legally required, together with the aforesaid corporate documents, which shall remain in full force and effect until such time as the County Department of Public Works and Transportation, Construction Contract Administration is advised in writing to the contrary.

**16. ACKNOWLEDGMENT**

I ACKNOWLEDGE THAT this Affidavit is to be furnished to the County and may be distributed to units of (1) Baltimore County; (2) the State of Maryland; (3) other counties or political subdivisions of the State of Maryland; (4) other states; and (5) the federal government. I further acknowledge that this Affidavit is subject to applicable laws of the United States and the State of Maryland, both criminal and civil, and that nothing in this Affidavit or any contract resulting from the submission of this bid or proposal shall be construed to supersede, amend, modify or waive, on behalf of Baltimore County, or the State of Maryland or any unit of the State of Maryland having jurisdiction, the exercise of any statutory right or remedy conferred by the Constitution and the laws of Maryland with respect to any misrepresentation made or any violation of the obligations, terms and covenants undertaken by the Business with respect to (a) this Affidavit, (b) the contract, and (3) other Affidavits comprising part of the contract.

I DO SOLEMNLY DECLARE AND AFFIRM UNDER THE PENALTIES OF PERJURY THAT THE CONTENTS OF THIS AFFIDAVIT ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF.

WITNESS/ATTEST:

\_\_\_\_\_  
Date: \_\_\_\_\_

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
(Authorized Representative and Affiant)

**BID BOND**

Principal \_\_\_\_\_

Business Address of Principal \_\_\_\_\_

Surety \_\_\_\_\_

Obligee: **BALTIMORE COUNTY, MARYLAND**  
A body corporate and politic

A Corporation of the State of \_\_\_\_\_ and authorized to do business in Maryland

Five Percent of Bid Amount \_\_\_\_\_ \$ \_\_\_\_\_ 5% of Bid

Penal Sum of Bond [shall be determined pursuant to latest revised Specification / G.P. 2.07 (2000 Ed.)]

**Cloverland Park Renovations & Enhancements**  
Contract Name

**25067 GX0**  
Contract Number/Proposal Item Number

**KNOW ALL MEN BY THESE PRESENTS**, that we, the Principal, above named, and Surety, above named, and authorized to do business in the State of Maryland, are held and firmly bound unto the Obligee, above named, in the penal sum of the amount stated above, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

**THE CONDITION OF THIS OBLIGATION** is such that if the aforesaid Principal is the apparent low bidder and complies with all specified matters required before award or if the aforesaid Principal is awarded the contract, the said Principal will, within the time required, execute and deliver to the Obligee a formal contract and good and sufficient payment and performance bonds in the form provided by the Obligee, then, this obligation to be void; otherwise the Principal and Surety will, upon demand, pay unto the Obligee the entire Penal Sum of this Bid Bond as liquidated damages.

**THE SURETY FURTHER GUARANTEES** No Proposal will be considered unless accompanied by a guaranty of the amount specified in the Proposal in the form of either a certified check, bank cashier's check or a Bid Bond on the form provided therein or an exact facsimile thereof. The Bid Bond must be executed by a Surety that is, as of the date of the Bid: (a) licensed in the State of Maryland, (b) rated "B" or better by the A.M. Best Company, (c) on federal funded projects, authorized by the underwriting limitation contained in the U.S. Department of the Treasury Circular 570, as amended, to guaranty the amount of the Bid, and (d) in good standing as determined by the County's Engineer. The Bid Bond must guaranty payment to the County of liquidated damages as follows: (a) if only one Bid is received, the guaranteed payment shall be five (5%) percent of the Bidder's Bid amount, (b) if two or more Bids are received, the guaranteed payment shall be the difference between the Bidder's Bid amount and the next lowest Bid amount, subject to the limitation that the guaranteed payment not be greater than five (5%) percent of the Bidder's Bid amount. This Bid Bond is required in case the successful Bidder, after issuance of notice of Award, fails to comply, timely and completely, with each of the requirements set forth under Section GP-3.04.

Signed and sealed \_\_\_\_\_  
Date

**IN WITNESS WHEREOF**, the above-bounded parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

In Presence of:

Individual Principal

Witness: \_\_\_\_\_

as to: \_\_\_\_\_ (SEAL)

Print Name: \_\_\_\_\_

Print Name: \_\_\_\_\_

Corporate Principal

In Presence of:

\_\_\_\_\_  
(Name of Corporation)

Witness: \_\_\_\_\_

By: \_\_\_\_\_

Print Name: \_\_\_\_\_

Print Name: \_\_\_\_\_ (SEAL)

Title: \_\_\_\_\_

Surety

\_\_\_\_\_  
(Name of Surety)

Business Address: \_\_\_\_\_

Witness: \_\_\_\_\_

By: \_\_\_\_\_ Affix

Print Name: \_\_\_\_\_

Print Name: \_\_\_\_\_ Corporate

Title: \_\_\_\_\_ Seal



## First Source Hiring Agreement Overview

### What is First Source Hiring?

Baltimore County's First Source Hiring Agreement requires that developers, contractors, and employers utilize good faith efforts toward employing economically disadvantaged Baltimore County residents in newly created positions on applicable projects. These efforts are supported by Baltimore County's workforce development system, a partnered network of business and economic development professionals, education and training providers, and human service agencies working together systematically to provide a ready supply of qualified workers to employers with hiring needs. The intent of First Source is to connect these individuals with new jobs that are generated by the County's investment in contracts or public works; or by business activity that requires approval by the County's Department of Economic and Workforce Development.

The goals of the First Source Hiring Agreement are to:

- Increase awareness of the resources, services and potential benefits available to help Baltimore County employers meet their workforce needs; and,
- Give economically disadvantaged individuals the first opportunity to apply for new jobs in Baltimore County.

### Which businesses can participate in First Source Hiring?

1. Businesses who have leases with the County or on County property; or,
2. Businesses with County contracts for goods, services, and grants under \$300,000 which are projected to create new jobs/positions to fulfill contract terms

### How can first source help your business?

Baltimore County Department of Economic & Workforce Development's (DEWD's) Business Services Team can help coordinate recruitment services with our workforce partners in collaboration with our three Baltimore County Career Center locations to assist with finding pre-screened, qualified candidates.

Available services may include but are not limited to:

- Posting and promotion of employment opportunities through our network of service providers
- Access to diverse talent pools from within Baltimore County's workforce system
- Access to Baltimore County Career Centers for coordinated recruitment/interviewing activities
- Referral of pre-screened, qualified candidates for employer consideration
- Assistance with using the Maryland Workforce Exchange - a statewide job database and candidate matching platform
- Information on earning tax credits and other employer benefits for new hires (if applicable)
- Workforce and Business Services staff to assist you throughout your recruitment efforts

## I'd like to participate in First Source Hiring...Where do I start?

**Step #1:** Register your business with the [Maryland Workforce Exchange](#). This is an online database to track First Source Hiring job opportunities. As an employer, the Maryland Workforce Exchange can help you promote job openings, search for qualified candidates and share placement information.

**Step #2:** Businesses or non-profits who receive a non-construction or professional services contract from Baltimore County under \$300,000 are required to project the number of job openings they expect during the contract period. After registering your business with [Maryland Workforce Exchange](#), complete the **First Source Hiring Description Form** and email it to the Baltimore County Department of Economic and Workforce Development (DEWD) at [firstsourcehire@baltimorecountymd.gov](mailto:firstsourcehire@baltimorecountymd.gov) . If you have any questions about registering with MWE or completing the form, contact our office at 410-887-8000.

**Step #3:** Once you are registered in MWE and Baltimore County receives your **First Source Hiring Description Form** via email, you will be contacted by a member of the Business Development Team to assist with recruitment for your open positions.

### Helpful Tips:

Businesses that qualify are asked to post their openings with Baltimore County's First Source Hiring network of service providers, and offer the County the first opportunity to refer qualified candidates to those positions. While the agreement does not require an employer to hire a specific candidate, it does ask that employers make a good faith effort to hire referrals from the County's workforce development system. We ask that employers would report basic information for any new hires by entering the placement data in the Maryland Workforce Exchange, or by completing an Employment Verification and Employer Survey Form (see FORM 2 attached) or via email at the completion of your recruitment activities.

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Company Name

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Contact Name

---

Company Address

---

City, MD

---

E-mail Address

---

Telephone

---

Acknowledgment Signature

---

Date

**STATE OF MARYLAND**  
**DEPARTMENT OF LABOR**  
**DIVISION OF LABOR AND INDUSTRY**  
**PREVAILING WAGE SECTION**  
**1100 N. Eutaw Street, Room 607**  
**Baltimore, MD 21201**  
**(410) 767-2342**

05/28/2025

***REQUEST FOR ADVERTISEMENT AND NOTICE TO PROCEED***

Heather Panowicz - Procurement Officer  
Dept of Public Works and Transportation  
111 West Chesapeake Ave Room 300B  
Towson, MD 21204

**Re: Cloverland Park Cricket Field**  
**Project No: 25097 GX0**

Enclosed please find the Prevailing Wage Determination and Instructions for Contractors for the project referenced above.

Upon advertisement for bid or proposal of this project, you are requested to submit to this office the date and name of publication in which such advertisement appeared.

Once awarded, you are further directed to submit to this office, the NOTICE TO PROCEED for the project, complete with the date of notice, the name of the general contractor, and the dollar amount of the project. In addition, we ask that a representative of the prevailing wage Unit be invited to attend the Pre-Construction Conference.

Any questions concerning this matter may be referred to [PrevailingWage@dllr.state.md.us](mailto:PrevailingWage@dllr.state.md.us)

Sincerely,

Enclosures  
Wage Determination  
Instruction for the Contractor

Prevailing Wage Unit

## **PREVAILING WAGE INSTRUCTIONS FOR THE CONTRACTOR & SUBCONTRACTOR**

The contractor shall electronically submit completed copies of certified payroll records to the Commissioner of Labor & Industry, Prevailing Wage Unit by going on-line to <https://www.dllr.state.md.us/prevwage> and following the instructions for submitting payroll information (NOTE: A contractor must register prior to submitting on-line certified payroll information).

If you have technical questions regarding electronic submittal, contact the Department at [dldlprevailingwage-dllr@maryland.gov](mailto:dldlprevailingwage-dllr@maryland.gov).

All certified payroll records shall have an accurate week beginning and ending date. The contractor shall be responsible for certifying and submitting to the Commissioner of Labor and Industry, Prevailing Wage Unit all of their subcontractors' payroll records covering work performed directly at the work site. By certifying the payroll records, the contractor is attesting to the fact that the wage rates contained in the payroll records are not less than those established by the Commissioner as set forth in the contract, the classification set forth for each worker or apprentice conforms with the work performed, and the contractor or subcontractor has complied with the provisions of the law.

A contractor or subcontractor may make deductions that are (1) required by law; (2) required by a collective bargaining agreement between a bona fide labor organization and the contractor or subcontractor; or (3) contained in a written agreement between an employee and an employer undertaken at the beginning of employment, if the agreement is submitted by the employer to the public body awarding the public work and is approved by the public body as fair and reasonable.

A contractor or subcontractor is required to submit information on-line on their fringe benefit packages including a list of fringe benefits for each craft employed by the contractor or subcontractor, by benefit and hourly amount. Where fringe benefits are paid in cash to the employee or to an approved plan, fund, or program, the contribution is required to be indicated.

Payroll records must be electronically submitted and received within 14 calendar days after the end of each payroll period. If the contractor is delinquent in submitting payroll records, processing of partial payment estimates may be held in abeyance pending receipt of the records. In addition, if the contractor is delinquent in submitting the payroll records, the contractor shall be liable to the contracting public body for liquidated damages. The liquidated damages are \$10.00 for each calendar day the records are late.

Only apprentices registered with the Maryland Apprenticeship and Training Council shall be employed on prevailing wage projects. Apprentices shall be paid a percentage of the determined journey person's wage for the specific craft.

Overtime rates shall be paid by the contractor and any subcontractors under its contracts and agreements with their employees which in no event shall be less than time and one-half the prevailing hourly rate of wages for all hours worked in excess of ten (10) hours in any one calendar day; in excess of forty (40) hours per workweek; and work performed on Sundays and legal holidays.

Contractors and subcontractors employing a classification of worker for which a wage rate was not issued SHALL notify the Commissioner of Labor & Industry, Prevailing Wage Unit, for the purpose of obtaining the wage rate for said classification PRIOR TO BEING EMPLOYED on the project. To obtain a prevailing wage rate which was NOT listed on the Wage Determination, a contractor or subcontractor can look on the LABOR webpage under prevailing wage.

Contractors and subcontractors shall maintain a valid copy of proper State and county licenses that permit the contractor and a subcontractor to perform construction work in the State of Maryland. These licenses must be retained at the worksite and available for review upon request by the Commissioner of Labor and Industry's designee.

\*\*Each contractor under a public work contract subject to Section 17-219 shall:

1. Post a clearly legible statement of each prevailing wage rate to be paid under the public work contract; and
2. Keep the statement posted during the full time that any employee is employed on the public work contract.
3. The statement of prevailing wage rates shall be posted in a prominent and easily accessible place at the site of the public work.

**\*\*Penalty - Subject to Section 10-1001 of the State Government Article, the Commissioner may impose on a person that violates this section a civil penalty of up to \$50.00 per violation.**

Under the Maryland Apprenticeship and Training Council requirements, consistent with proper supervision, training and continuity of employment and applicable provisions in collective bargaining agreements, a ratio of one journey person regularly employed to one apprentice shall be allowed. No deviation from this ratio shall be permitted without prior written approval from the Maryland Apprenticeship and Training Council.

Laborers may NOT assist mechanics in the performance of the mechanic's work, NOR USE TOOLS peculiar to established trades.

ALL contractors and subcontractors shall employ only competent workers and apprentices and may NOT employ any individual classified as a HELPER or TRAINEE on a prevailing wage project.

The State Apprenticeship and Training Fund (Fund) law provides that contractors and certain subcontractors performing work on certain public work contracts are required to make contributions toward apprenticeship. See §17-601 through 17-606, State Finance and Procurement, Annotated Code of Maryland. Contractors and subcontractors have three options where they can choose to make their contributions: (1) participate in a registered apprenticeship training program; (2) contribute to an organization that has a registered apprenticeship training program; or (3) contribute to the State Apprenticeship and Training Fund.

The Department of Labor (LABOR) is moving forward with final adoption of regulations. The regulations were published in the December 14, 2012 edition of the Maryland Register.

**IMPORTANT: Please note that the obligations under this law will become effective on JULY 1, 2013. This law will require that contractors and certain subcontractors make contributions toward apprenticeship and report those contributions on their certified payroll records that they submit pursuant to the prevailing wage law.**

**The Department is offering outreach seminars to any interested parties including contractors, trade associations, and any other stakeholders. Please contact the Department at [dldlprevailingwage-dllr@maryland.gov](mailto:dldlprevailingwage-dllr@maryland.gov) or (410) 767-2968 for seminar times and locations. In addition, information regarding this law will be provided at pre-construction meetings for projects covered by the Prevailing Wage law.**

**For additional information, contact:  
Division of Labor and Industry  
Maryland Apprenticeship and Training  
1100 North Eutaw Street, Room 606  
Baltimore, Maryland 21201  
(410) 767-2246  
E-Mail Address: [matp@dllr.state.md.us](mailto:matp@dllr.state.md.us).**

**STATE OF MARYLAND**  
**DEPARTMENT OF LABOR**  
**DIVISION OF LABOR AND INDUSTRY**  
**PREVAILING WAGE SECTION**  
**1100 N. Eutaw Street, Room 607**  
**Baltimore, MD 21201**  
**(410) 767-2342**

The wage rates to be paid laborers and mechanics for the locality described below is announced by order of Commissioner of Labor and Industry.

It is mandatory upon the successful bidder and any subcontractor under him, to pay not less than the specific rates to all workers employed by them in executing contracts in this locality. Reference: Annotated Code of Maryland State Finance and Procurement, Section 17-201 thru 17-226.

These wage rates were taken from the locality survey of 2024 for Baltimore County, issued pursuant to the Commissioner's authority under State Finance and Procurement Article Section 17-209, Annotated Code of Maryland or subsequent modification.

**\*\*Note:** If additional Prevailing Wage Rates are needed for this project beyond those listed below, contact the Prevailing Wage Unit. Phone: (410) 767-2342, email: prevailingwage@dllr.state.md.us.

Name and Title of Requesting Officer: Heather Panowicz - Procurement Officer  
 Department, Agency or Bureau: Dept of Public Works and Transportation  
 111 West Chesapeake Ave Room 300B Towson, MD 21204

Project Number
25097 GX0

Location and Description of work:  
 Baltimore County: Construction of a cricket field

Determination Number
62124

Date of Issue: May 28, 2025

**BUILDING CONSTRUCTION**

CLASSIFICATION	MODIFICATION REASON	BASIC HOURLY RATE	BORROWED FROM	FRINGE BENEFIT PAYMENT
BALANCING TECHNICIAN	CR	\$47.92		\$24.44
BRICKLAYER	CR	\$37.50		\$14.78
CARPENTER	CR	\$34.41		\$14.49
CARPENTER - SHORING SCAFFOLD BUILDER	CR	\$34.41		\$14.49
CARPET LAYER	CR	\$34.12		\$14.86
CEMENT MASON	SR	\$25.00	005	\$1.94
COMMUNICATION INSTALLER TECHNICIAN	SR	\$36.37	005	\$12.89
DRYWALL - SPACKLING, TAPING, & FINISHING	CR	\$34.41		\$14.49
ELECTRICIAN	CR	\$47.13		\$21.94
ELEVATOR MECHANIC	CR	\$56.36		\$45.50
FIRESTOPPER	CR	\$29.81		\$10.08

GLAZIER	CR	\$35.60		\$14.41
INSULATION WORKER	CR	\$40.02		\$19.92
IRONWORKER - FENCE ERECTOR	CR	\$40.02		\$19.92
IRONWORKER - ORNAMENTAL	CR	\$31.17	510	\$24.38
IRONWORKER - REINFORCING	CR	\$29.20	510	\$23.57
IRONWORKER - STRUCTURAL	CR	\$33.12		\$25.63
MILLWRIGHT	CR	\$38.61		\$17.21
PAINTER	CR	\$28.55		\$11.87
PAINTER-INDUSTRIAL	CR	\$35.55		\$15.28
PILEDRIIVER	SR	\$36.60	005	\$16.78
PLUMBER	CR	\$46.21		\$24.90
POWER EQUIPMENT OPERATOR - BACKHOE	CR	\$33.00	510	\$13.55
POWER EQUIPMENT OPERATOR - BROOM / SWEEPER	CR	\$32.23	510	\$14.62
POWER EQUIPMENT OPERATOR - BULLDOZER	CR	\$34.18		\$14.62
POWER EQUIPMENT OPERATOR - CONCRETE PUMP	CR	\$44.35		\$0.00
POWER EQUIPMENT OPERATOR - CRANE	CR	\$41.00		\$18.10
POWER EQUIPMENT OPERATOR - CRANE - TOWER	CR	\$41.00		\$18.10
POWER EQUIPMENT OPERATOR - DRILL - RIG	CR	\$33.16		\$14.15
POWER EQUIPMENT OPERATOR - EXCAVATOR	CR	\$34.18		\$14.62
POWER EQUIPMENT OPERATOR - FORKLIFT	CR	\$34.18		\$14.62
POWER EQUIPMENT OPERATOR - GRADALL	CR	\$34.00	510	\$13.55
POWER EQUIPMENT OPERATOR - GRADER	CR	\$34.18		\$14.62
POWER EQUIPMENT OPERATOR - GUARD RAIL POST DRIVER	CR	\$23.50		\$5.07
POWER EQUIPMENT OPERATOR - LOADER	CR	\$34.18		\$14.62
POWER EQUIPMENT OPERATOR - MECHANIC	CR	\$36.24		\$14.62
POWER EQUIPMENT OPERATOR - MILLING MACHINE	CR	\$30.58	510	\$13.55
POWER EQUIPMENT OPERATOR - PAVER	CR	\$32.10	510	\$13.55
POWER EQUIPMENT OPERATOR - ROLLER - ASPHALT	CR	\$32.10	510	\$13.55
POWER EQUIPMENT OPERATOR - ROLLER - EARTH	CR	\$28.60		\$14.62
POWER EQUIPMENT OPERATOR - SCREED	CR	\$30.00	510	\$11.80
POWER EQUIPMENT OPERATOR - SKID STEER (BOBCAT)	CR	\$32.23		\$14.62
POWER EQUIPMENT OPERATOR-VACUUM TRUCK	CR	\$37.50		\$14.85
RESILIENT FLOOR	CR	\$34.12		\$14.86
ROOFER/WATERPROOFER	SR	\$52.21	009	\$14.91
SHEETMETAL WORKER (INCLUDING METAL ROOFING)	CR	\$47.92		\$24.44
SPRINKLERFITTER	CR	\$42.32	510	\$26.05
STEAMFITTER/PIPEFITTER	CR	\$46.21		\$24.90
STONE MASON	CR	\$44.30	510	\$21.22
TILE & TERRAZZO FINISHER	CR	\$28.09		\$12.59
TILE & TERRAZZO MECHANIC	CR	\$33.41		\$14.24
TRUCK DRIVER - DUMP	CR	\$17.64	510	\$1.92
TRUCK DRIVER - FLATBED	CR	\$20.94		\$7.63
TRUCK DRIVER - LOWBOY	CR	\$29.68	510	\$10.51
TRUCK DRIVER - TACK/TAR TRUCK	CR	\$27.35	510	\$8.97
<b>LABORER GROUP II</b>				
LABORER - ASPHALT RAKER	AD	\$22.63		\$4.88

LABORER - COMMON	AD	\$22.63	\$4.88
LABORER - CONCRETE PUDDLER	AD	\$22.63	\$4.88
LABORER - CONCRETE TENDER	AD	\$22.63	\$4.88
LABORER - CONCRETE VIBRATOR	AD	\$22.63	\$4.88
LABORER - DENSITY GAUGE	AD	\$22.63	\$4.88
LABORER - FIREPROOFER - MIXER	AD	\$22.63	\$4.88
LABORER - FLAGGER	AD	\$22.63	\$4.88
LABORER - GRADE CHECKER	AD	\$22.63	\$4.88
LABORER - HAND ROLLER	AD	\$22.63	\$4.88
LABORER - JACKHAMMER	AD	\$22.63	\$4.88
LABORER - LANDSCAPING	AD	\$22.63	\$4.88
LABORER - LAYOUT	AD	\$22.63	\$4.88
LABORER - LUTEMAN	AD	\$22.63	\$4.88
LABORER - MORTAR MIXER	AD	\$22.63	\$4.88
LABORER - PLASTERER - HANDLER	AD	\$22.63	\$4.88
LABORER - TAMPER	AD	\$22.63	\$4.88
<b>LABORERS GROUP I</b>			
LABORER - AIR TOOL OPERATOR	AD	\$24.46	\$9.69
LABORER - ASPHALT PAVER	AD	\$24.46	\$9.69
LABORER - BLASTER - DYNAMITE	AD	\$24.46	\$9.69
LABORER - BURNER	AD	\$24.46	\$9.69
LABORER - CONCRETE SURFACER	AD	\$24.46	\$9.69
LABORER - HAZARDOUS MATERIAL HANDLER	AD	\$24.46	\$9.69
LABORER - MASON TENDER	AD	\$24.46	\$9.69
LABORER - PIPELAYER	AD	\$24.46	\$9.69
LABORER - SCAFFOLD BUILDER	AD	\$24.46	\$9.69

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**Incidental Craft Data: Caulker, Man Lift Operator, Rigger, Scaffold Builder, and Welder** receive the wage and fringe rates prescribed for the craft performing the operation to which welding, scaffold building, rigging, operating a Man Lift, or caulking is incidental.

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These **Informational Prevailing Wage Rates** may not be substituted for the requirements of pre-advertisement or onsite job posting for a public work contract that exceeds \$250,000 in value and either of the following criteria are met: (1) the contracting body is a unit of State government or an instrumentality of the State and there is any State funding for the project; or (2) the contracting body is a political subdivision, agency, person or entity (such as a county) and the State funds 25% or more of the project.

Modification Codes:

- (AD) 17-209 Annual Determination from Survey Wage Data Received
- (CH) 17-211 Commissioners' Hearing
- (CR) 17-208 Commissioners' Review
- (SR) 17-208 Survey Review by Staff

Each "Borrowed From" county is identified with the FIPS 3-digit county code unique for the specific jurisdiction in Maryland.

For additional information on the FIPS (Federal Information Processing Standard) code, see <http://www.census.gov/datamap/fipslist/AllSt.txt>

The Prevailing Wage rates appearing on this form were originally derived from Maryland's annual Wage Survey. The Commissioner of Labor & Industry encourages all contractors and interested groups to participate in the voluntary Wage Survey, detailing wage rates paid to workers on various types of construction throughout Maryland.

A mail list of both street and email addresses is maintained by the Prevailing Wage Unit to enable up-to-date prevailing wage information, including Wage Survey notices to be sent to contractors and other interested parties. If you would like to be included in the mailing list, please forward (1) your Name, (2) the name of your company (if applicable), (3) your complete postal mailing address, (4) your email address and (5) your telephone number to PWMAILINGLIST@dllr.state.md.us. Requests for inclusion can also be mailed to: Prevailing Wage, 1100 N. Eutaw Street - Room 607, Baltimore MD 21201-2201.

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BALTIMORE COUNTY, MARYLAND  
USE OF MINORITY BUSINESS ENTERPRISES AND WOMEN'S BUSINESS ENTERPRISES  
IN  
COUNTY CONTRACTS  
MWBE Plan Package



Division of Diversity, Equity and Inclusion  
The Jefferson Building  
105 West Chesapeake Avenue  
Towson, Maryland 21204  
410-887-3407

[www.baltimorecountymd.gov/go/mwbe](http://www.baltimorecountymd.gov/go/mwbe)



## PROSPECTIVE BIDDERS/OFFERORS

Baltimore County Executive Order 2022-005 Use of Minority Business Enterprises and Women's Business Enterprises states:

### *SECTION 6. BID REQUIREMENTS.*

*(A)(1) All bidders shall submit a list of all subcontractors contacted in preparation of their bid package or proposal.*

*(2) The list shall include the service to be performed, bid amount, and the race/ethnicity/gender of the business owner(s).*

*(B)(1) All bidders shall submit a list of all subcontractors to be used on a county contract in the bid package.*

*(2) This list shall include all subcontractors (both MWBE and non-MWBE) used, the service to be performed, the total amount to be paid, and the race/ethnicity/gender of the owner.*

If the solicitation includes a MWBE **subcontracting** goal, you **MUST** demonstrate “**Good Faith**” **effort** either by:

1. Complete and sign FORM A, FORM B (to include FORM B-Prime if MWBE Prime wishes to count towards the goal) and FORM C **listing all subcontractors** with the initial bid submission.
  - a. *All Forms must be completed and signed. However, FORM C **MUST** be completed and signed by both the prime and the MWBE subcontractor.*
- OR**
2. If you are unable to meet any portion of the goal, you **MUST** do one of the following:
  - a. If you are requesting a **partial waiver**, complete and sign FORM A with initial bid submission. FORM B (to include FORM B-Prime if MWBE Prime wishes to count towards the goal) and FORM C (**listing all subcontractors**). In addition, complete, sign and submit FORM D and FORM E **accompanied with all supporting documentation** for the portion of the goal that will not be achieved as specified on FORM A.
  - b. If you are requesting a **full waiver**, complete and sign FORM A indicating your intent to request a full waiver **accompanied with a completed and signed FORM C listing all subcontractors**, FORM D and FORM E **accompanied with all supporting documentation. This MUST be submitted with the initial bid as specified on FORM A.**
  - c. *All Forms must be completed and signed. FORM C and FORM D **MUST** be completed and properly signed by **both the Prime AND the MWBE subcontractor(s).***

**NOTE:** The MWBE **subcontracting** goal applies to **ALL** prime/general contractors including certified and non-certified minority and women owned firms. **However, a Minority-owned or a Women-owned prime may self-perform up to 50% of MWBE subcontracting goal set in the solicitation. The MWBE primes that wish to count towards the goal must list themselves on all appropriate forms.**

12/2023

## **BALTIMORE COUNTY, MARYLAND** **MWBE PARTICIPATION SUMMARY**

**Executive Order:** Minority Business Enterprises and Women Business Enterprises (MWBE) shall have the maximum opportunity to participate in the performance of contracts financed in whole, or in certain circumstances, in part with County funds. Accordingly, on December 6, 2022, the County Executive adopted the EXECUTIVE ORDER No. 2022-005 addressing MWBE participation in County contracts. The December 6, 2022 Executive Order may be found on the Baltimore County website at [www.baltimorecountymd.gov/go/mwbe](http://www.baltimorecountymd.gov/go/mwbe).

**Each Contract:** The County shall establish a minimum MWBE participation amount for each contract, as applicable.

**Bidder/Offeror Responsibility:** The bidder/offeror shall ensure that MWBE participation occurs in accordance with the contract requirements and the County Executive's Executive Order. All bidder/offerors shall ensure that MWBE have the maximum opportunity to compete for and perform County contracts, as applicable. Baltimore County, Maryland, and/or its bidder/offerors and contractors shall not discriminate on the basis of race, color, national origin, disability or sex in the award and performance of any County contract.

**Mobilization Payments:** For subcontractors, project start-up costs can also be significant. A subcontractor that has limited resources and access to credit may find that start-up expenses inhibit its ability to bid County contracts. Under circumstances where mobilization payments are approved for the prime contractor, the subcontractor should be paid an amount equal to their participation percentage no later than five (5) business days before they are required to mobilize to perform the contracted work.

Mobilization costs represent pre-contract costs incurred by a contractor to prepare a job site before the actual commencement of the contract. These costs can include movement of personnel and equipment to the project site and for the establishment of the Contractor's offices, buildings, and other facilities necessary to begin work.

### **APPROVED MWBE LISTINGS**

Published compilations of approved and certified MWBE, contractors, subcontractors, material suppliers, etc. include:

DIRECTORY OF MINORITY BUSINESS ENTERPRISE (MDOT):

**<https://marylandmdbe.mdbecert.com>**

MINORITY BUSINESS DIRECTORY OF THE CITY OF BALTIMORE:

**<https://baltimorecity.diversitycompliance.com>**

### **BIDDER/OFFEROR'S ACTIONS**

#### **Seeking Firms:**

The bidder/offeror will seek commitments by subcontract or otherwise from MWBE firms for supplies and/or services, any combined value of which equals or exceeds the required percentage of MWBE participation goal for the County contract. However a MWBE Prime that affirms its MWBE status on the Minority and/or Women Prime Participation Affidavit may count up to 50% of the goal.

#### **Expenditures for Materials and Supplies:**

A bidder/offeror may count toward its MWBE contract requirements all expenditures for materials and supplies obtained from MWBE suppliers and manufacturers, provided that the MWBE firm is furnishing and installing the materials and is certified to perform these services. If the MWBE firm is only being used as a supplier, wholesaler and/or regular dealer or is not certified to install the supplies/materials, for purposes of achieving the MWBE participation goal, you may only count sixty percent (60%) of the value of the subcontract for these supplies/products (60% Rule). To apply the 60% Rule, first divide the amount of the subcontract for these supplies/products only (not installation) by the total Contract value. Then, multiply the result by sixty percent (60%) and insert the percentage in the Percent of Total Contract field of Form B Subcontractor Participation Schedule.

## **BALTIMORE COUNTY, MARYLAND** **MWBE PARTICIPATION SUMMARY**

Information to be supplied: All bidder/offerors shall submit the following information to the County at the time of bid submission:

1. The name of an employee designated as the bidder/offeror's liaison to the County's Minority Business Enterprise Office.
2. The following forms shall be completed and submitted:
  - Certified MWBE Utilization and Fair Solicitation Affidavit (**Form A**); from among those names appearing in the Approved MWBE Listings (excepting Federal Highway Administration projects, which exclusively require DBE approved and certified by the Maryland Department of Transportation MBE Advisory Committee);
  - A Subcontractor Participation Schedule (**Form B**) completed by the prime contractor for each MWBE listed on the Form.
  - A MWBE Prime Participation Schedule (Form B-Prime) completed by a MWBE prime contractor if the firm wishes to self-perform up to 50% of the MBE/WBE goal.
  - A MWBE Disclosure and Participation Statement (**Form C**) completed and signed by the prime contractor and MWBE firm for each MWBE listed on the Form. Form C **must match** what is stated on Form B.
  - If applicable, MWBE Subcontractor Unavailable Certificate (**Form D**) completed and signed by the prime contractor and MWBE for each MWBE listed on the Form.
3. If applicable, MWBE Outreach Efforts - Compliance Statement (**Form E**) completed and signed by the Bidder/Offeror. The prime shall submit a list of all subcontractors.
4. For DPW contracts, if the bidder/offeror intends to fulfill the MWBE requirements by use of a joint venture, he/she must submit a Joint Venture Disclosure Affidavit (**Form D-EEO-006-A** and **B** showing the extent of MWBE participation. If a bidder/offeror intends to use a MWBE joint venture as a subcontractor to meet its MWBE requirements, the affidavit must be submitted through the bidder/offeror by the proposed subcontractors and signed by all parties.
5. If the bidder/offeror's proposed MWBE participation does not meet the MWBE contract requirements, information sufficient to demonstrate that the bidder/offeror has made every effort to meet the requirements must be submitted. (See DETERMINATION OF BID RESPONSIVENESS hereafter)

### **RECORDS AND REPORTS**

Returning Records: The bidder/offeror must keep such records as are necessary to determine compliance with its MWBE utilization requirements:

1. The MWBE and non-minority contractors, type of work being performed, actual values of work and services.
2. Documentation of all correspondence, contacts, telephone calls, etc., to obtain MWBE services for the contract.
3. All prime contractors and MWBE sub-contractors are required to report monthly, by the 10th of each month, to the County through an online system called PRISM. If the contractor cannot submit his/her report on time, he/she will notify the County MWBE office and request additional time to submit the report. Failure of the contractor to report in a timely manner may result in a finding of noncompliance. The County in its sole discretion and/or upon written request may require additional reports regarding MWBE. In the event you are not able to enter your payments in PRISM, a spreadsheet is attached for your use. Please be sure to list the PO for each invoice/ payment reported and include in your submission any corresponding documentation (e.g. copies of invoices or cancelled checks).

Retaining Records: All MWBE records must be retained for 3 years following the expiration or any earlier termination of the contract and shall be available for inspection and photocopying by the County.

Investigation and Notification: Whenever the County believes the bidder/offeror, contractor, or any subcontractor may not be operating in compliance with the MWBE requirements, the County may, in its sole discretion, conduct an investigation. If the County finds the bidder/offeror, contractor, or any subcontractor is not in compliance with the MWBE requirements, the County may exercise any and all rights and remedies available to the County, under the contract, at law or equity, as deemed applicable and appropriate by the County in its sole discretion.

## **BALTIMORE COUNTY, MARYLAND** **MWBE PARTICIPATION SUMMARY**

### **DETERMINATION OF BID RESPONSIVENESS**

Request for Deviation: If the bidder/offeror is unable to procure from MWBE firms (by subcontract or otherwise), supplies and services, any combined value of which equals the required percentage of the total value of the contract, the bidder/ offeror may request, in writing, a deviation or waiver of the contract requirements. To obtain such a waiver, the bidder/ offeror must submit the following information at the time bids are due:

1. The request for waiver request shall include (1) a signed unavailability statement (Form D) executed by all MBEs and WBEs that the bidder/offeror solicited for participation and (2) Outreach Efforts/Compliance Statement (Form E) that demonstrates the bidder/offeror's good faith efforts to comply with the contract requirements, including copies of solicitation documentation to all potential subcontractors:
2. Emails, letters, facsimile transmittals and confirmations containing plans, specifications, and anticipated time schedule for portions of the work to be performed and meeting notes and agendas clearly identifying the certified MBE or WBE classification and dates that the bidder/offeror contacted each MWBE; and
3. Telephone logs containing names, addresses, dates, telephone numbers, work to be performed, anticipated time schedule and classification of certified MBEs and WBEs contacted.

**Bid Rejection:** The failure of any bidder/offeror (including the apparent low bidder/offeror) to provide a responsive MWBE Plan as required by the solicitation may result in the bidder/offeror being deemed non-responsive and the County's rejection of the bid.

**Liquidated Damages** If the County issues a notice of intent to awards contract to the apparent low bidder/offeror who provided a responsive MWBE Plan, but, if after said notice and before execution of Contract Documents, it is determined by the County that the apparent low bidder/offeror has failed to comply with the MWBE Plan, such failure may result in the recommendation by the appropriate Procurement Official to annul the award and forfeit the bidder/offeror's Proposal Guaranty to the County, not as a penalty, but as liquidated damages, it being acknowledged that actual damages will be difficult if not impossible to accurately measure. In addition, the County may proceed as it determines to be in its best interest, including but not limited to, the Notice of Award may be made to the next lowest responsive and responsible bidder/offeror or the work may be re-advertised.

**Contract Breach:** If, after execution of a County contract, the contractor becomes aware it may or will fail to fulfill the applicable MWBE requirements and/or may or will deviate from the contractor's bid response/contract terms, the contractor shall promptly advise the County of this in writing. Thereafter, the County will determine what action or remedy is appropriate on a case-by-case basis, in the County's sole discretion.

**Approval Required for Changes:** Any and all changes to the MWBE subcontractors or the type or amount of work to be performed by such subcontractors during the contract term must be mutually agreeable to the County and the contractor and shall be documented via a contract amendment, executed by legally authorized representatives of the County and the contractor.

**Cooperation in Reviews:** The bidder/offeror will cooperate with the County in any reviews of the contractor's procedures and practices with respect to MBE or WBE firms, which the County may from time to time conduct in its sole discretion.

**Other:** If the documents used to determine the contractor's efforts, achievement of, and/or the status of an MWBE requirement or fulfillment thereof contain false, misleading or misrepresented information, the contractor may be declared in breach of the contract and the County may take any and all actions and/or remedies available to the County under the contract, at law, or in equity. If an MWBE is disqualified by any public entity, including but not limited to, Baltimore City, the State or MDOT, at any time after award or during the term of the contract, the County may, in its sole discretion, require the prime contractor to promptly submit for County approval, the contractor's plans for fulfilling the required MWBE participation under the contract, and/or request such detail and additional information as the County, in its discretion deems appropriate.



**PRIME CONTRACTOR MINORITY AND WOMEN PARTICIPATION AFFIDAVIT**

**A. AUTHORIZED REPRESENTATIVE**

I HEREBY AFFIRM THAT:

I am the [title]\_\_\_\_\_ and the duly authorized representative of [business]\_\_\_\_\_

\_\_\_\_\_ (the "Business") and that I possess the legal authority to make this Affidavit on behalf of myself and the Business for which I am acting.

**B. AFFIRMATION REGARDING MINORITY AND WOMEN PARTICIPATION**

I FURTHER AFFIRM THAT:

I am aware that, pursuant to the December 6, 2022 Executive Order of Baltimore County, Maryland, the following words have the meanings indicated.

(A) "Minority Business Enterprise" or "MBE" means a business enterprise that is owned, operated and controlled by one or more minority group members (African American, Hispanic American, Asian American, or Native American) who have at least 51% ownership and in which the minority group members have operational and managerial control, interest in capital and earnings commensurate with their percentage of ownership.

(B) "Women's Business Enterprise" or "WBE" means a business enterprise that is owned, operated and controlled by one or more women who have at least 51% ownership and in which the women have operational and managerial control, interest in capital and earnings commensurate with their percentage of ownership.

\_\_\_ The Prime is a MBE  or WBE

Maryland State Department of Transportation (MDOT) # \_\_\_\_\_

City of Baltimore # \_\_\_\_\_

Name Other Jurisdiction: \_\_\_\_\_ # \_\_\_\_\_

The ownership of the Noncertified MWBE business consists of \_\_\_\_\_% minorities and \_\_\_% women (for a total of \_\_\_\_\_%), each of which has operational and managerial control, interest in capital and earnings commensurate with their percent ownership.

\_\_\_\_\_ % African American \_\_\_\_\_ % Hispanic American \_\_\_\_\_ % Women  
\_\_\_\_\_ % Asian American \_\_\_\_\_ % Native American \_\_\_\_\_ % Disadvantaged (DBE)

\_\_\_ The MWBE prime anticipates meeting up to 50% of the stated participation goal with its own workforce.

**MWBE primes percentage must be stated on the MWBE PRIME PARTICIPATION SCHEDULE (FORM B-PRIME) to count towards the goal.**

\_\_\_ The prime anticipates  does not anticipate  utilizing subcontractors for \_\_\_\_\_% of the work of the contract requirements, of which it anticipates \_\_\_\_\_% will be MBEs and \_\_\_\_\_% will be WBEs.

I DO SOLEMNLY DECLARE AND AFFIRM UNDER THE PENALTIES OF PERJURY THAT THE CONTENTS OF THIS AFFIDAVIT ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF.

Date: \_\_\_\_\_

By: \_\_\_\_\_

(Authorized Representative and Affiant's Name and Title)

**BALTIMORE COUNTY, MARYLAND**  
**Certified MWBE Utilization and Fair Solicitation Affidavit**  
**(FORM A)**

*\*This document must be completed and submitted with Bid/Proposal to Baltimore County.*

**NOTE: If you do not complete and submit this form with your bid or offer to the County, the County may, in its sole discretion, deem your bid or offer NON-RESPONSIVE and accordingly the COUNTY WILL NOT CONSIDER YOU FOR CONTRACT AWARD.**

\* \* \* \* \*

I acknowledge the goal for solicitation # \_\_\_\_\_ is a minimum of \_\_\_\_\_%. This goal must be met by any combination of the MWBE subcontractors. However, for instances where the Prime is counting up to 50% of the goal, the remaining goal balance must be met by any combination of the MWBE subcontractors.

- The goal breakdown is as follows:
  - \_\_\_\_\_% Minority/Women Prime
  - \_\_\_\_\_% for certified MBE-owned businesses and/or
  - \_\_\_\_\_% for certified WBE-owned businesses.

**I have made a good-faith effort to achieve this MWBE solicitation requirement. If awarded the contract, I will comply with this MWBE contract requirement and will continue to use my best efforts to increase MWBE participation during the contract term.**

**PLEASE CHECK ONE BOX (EITHER 1, 2, OR 3)**

- 1  Prime has met the MWBE contract requirements for this solicitation and contract. I submit the Subcontractor Participation Form B and Form C, along with this Affidavit, which details how the Prime will achieve the contract requirements. Submit a complete list of all additional subcontractors
- Or**
- 2  After having made a good-faith effort to achieve the MWBE requirements, the Prime can only achieve partial success. I submit the Subcontractor Participation Form B, Form C, Form D and Form E along with this Affidavit, which details how the Prime will partially achieve the contract requirements. Submit a complete list of all additional subcontractors

I request a partial waiver and will meet the following MWBE participation goals:

- Partial waiver of MWBE subcontract participation:
  - \_\_\_\_\_% Minority/Women Prime
  - \_\_\_\_\_% for certified MBE-owned businesses and/or
  - \_\_\_\_\_% for certified WBE-owned businesses.

**Or**

- 3  After having made a good faith effort to achieve the MWBE requirements for this contract, the Prime is unable to achieve the requirements and/or sub requirements for this contract. I submit the MWBE Participation Form D and Form E, along with this Affidavit, which details the steps the Prime has taken in an attempt to achieve the contract requirements. Therefore, I request a full waiver.

**IF YOU HAVE CHECKED BOX 2 OR 3, THE FOLLOWING IS APPLICABLE:**

- 1) If a bidder is unable to comply with the goals established in a bid for a project, the bidder may submit a request for a waiver at the time of bid submission. However, occasions for granting waivers will be limited.

**BALTIMORE COUNTY, MARYLAND**  
**Certified MWBE Utilization and Fair Solicitation Affidavit**  
**(FORM A)**

- 2) The request for waiver shall include documentation that demonstrates the bidder’s good faith efforts to comply with the goals, including:
- a. Signed unavailability statements from all MBEs and WBEs that the bidder solicited for participation; and
  - b. Copies of solicitation documentation to include the scope of services to be performed by the subcontractors accompanied with the following:
    - i. Emails, letters, facsimile transmittals and confirmations containing plans, specifications, and anticipated time schedule for portions of the work to be performed and meeting notes and agendas clearly identifying the certified MBE or WBE classification and dates that the bidder contacted each; and
    - ii. Telephone logs containing names, addresses, dates, telephone numbers, work to be performed, anticipated time schedule and classification of certified MBEs and WBEs contacted.
    - iii. Responses from MWBE firms contacted to fulfill the goal.

**As I have checked Box 2 or 3 of this Affidavit, I understand I must submit the following supporting documentation with the bid:**

- *Subcontractor Participation Schedule* (Form B)
- *MWBE Subcontractor Disclosure and Participation Statement* (Form C)
- *MWBE Subcontractors Unavailable Certificate* (Form D) (if applicable)
- *MWBE Outreach Efforts – Compliance Statement* (Form E) (if applicable)

I acknowledge that the MWBE subcontractors/suppliers listed on the *Subcontractor Participation Schedule* (Form B) will be used to accomplish the percentage of MWBE participation that the Prime shall achieve. A fully executed Form C must match Form B.

In the solicitation of subcontract quotations or offers, MWBE subcontractors were provided the same information and amount of time to respond, as were non-MWBE subcontractors.

The solicitation process was conducted in such a manner so as to not place MWBE subcontractors at a competitive disadvantage to non-MWBE subcontractors.

**I solemnly affirm under the penalties of perjury that this Affidavit is true to the best of my knowledge, information, and belief.**

\_\_\_\_\_  
Bidder/Offeror Name

\_\_\_\_\_  
Phone Number

\_\_\_\_\_  
Address

\_\_\_\_\_  
Affiant Signature

\_\_\_\_\_  
Address (continued)

\_\_\_\_\_  
Printed Name & Title

\_\_\_\_\_  
E-mail address

\_\_\_\_\_  
Date



**BALTIMORE COUNTY, MARYLAND**  
**MWBE PRIME PARTICIPATION SCHEDULE**  
**(Form B-Prime)**

**PLEASE COMPLETE AND SUBMIT THIS FORM TO ATTEST EACH SPECIFIC ITEM OF WORK THAT YOU AS THE MWBE PRIME FIRM WILL PERFORM USING ITS OWN WORKFORCE PERTAINING TO THE PERCENTAGE STATED ON THE SUBCONTRACTOR PARTICIPATION SCHEDULE (FORM B) FOR PURPOSES OF MEETING THE MWBE PARTICIPATION GOALS.**

*\*This document must be completed and submitted with Bid/Proposal to Baltimore County.*

**NOTE: If you do not complete and submit this form with your bid or offer to the County, the County may, in its sole discretion, deem your bid or offer NON-RESPONSIVE and accordingly the COUNTY WILL NOT CONSIDER YOU FOR CONTRACT AWARD.**

Provided that \_\_\_\_\_ (Prime Contractor's Name) with Certification Number \_\_\_\_\_ is awarded the County contract in conjunction with Solicitation No. \_\_\_\_\_, such MWBE Prime Contractor intends to count the distinct, clearly defined portion of the work of the contract that the MBE/WBE Prime Contractor performs with its own forces toward fulfilling **up to fifty-percent (50%) of the MWBE participation goal**, at least \$ \_\_\_\_\_ which equals to \_\_\_\_\_% of the Total Contract Amount for performing the following products/services for the Contract:

NAICS CODE	WORK ITEM, SPECIFICATION NUMBER, LINE ITEMS OR WORK CATEGORIES (IF APPLICABLE). FOR CONSTRUCTION PROJECTS, GENERAL CONDITIONS MUST BE LISTED SEPARATELY.	DESCRIPTION OF SPECIFIC PRODUCTS AND/OR SERVICES	VALUE OF THE WORK

<p><b>MWBE PRIME CONTRACTOR</b></p> <p>Signature of Representative: _____</p> <p>Printed Name and Title: _____</p> <p>Firm's Name: _____</p> <p>Federal Identification Number: _____</p> <p>Address: _____</p> <p>Telephone: _____</p> <p>Email Address: _____</p> <p>Certified Yes No    No</p> <p>Certifying Jurisdiction _____</p> <p>Date: _____</p>	<p><b>MWBE PRIME CONTRACTOR</b></p> <p>Minority Status:</p> <p><input type="checkbox"/> African American</p> <p><input type="checkbox"/> Hispanic American</p> <p><input type="checkbox"/> Women</p> <p><input type="checkbox"/> Asian American</p> <p><input type="checkbox"/> Native American</p> <p><b>Reviewed and Accepted by Baltimore County Minority Business Enterprise Office</b></p> <p>Name _____</p> <p>Title _____</p> <p>Date _____</p>
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**BALTIMORE COUNTY, MARYLAND**  
**MWBE –UNAVAILABILITY CERTIFICATE**  
**(FORM D)**

*If applicable, this document must be completed and submitted with Bid/Proposal to Baltimore County.*

**NOTE: If you do not complete and submit this form with your bid or offer to the County, the County may, in its sole discretion, deem your bid or offer NON-RESPONSIVE and accordingly the COUNTY WILL NOT CONSIDER YOU FOR CONTRACT AWARD.**

1. It is hereby certified that the firm of \_\_\_\_\_  
(Name of Minority firm)

located at \_\_\_\_\_  
(Number) (Street)

\_\_\_\_\_ (City) (State) (Zip)

was offered an opportunity to bid on the \_\_\_\_\_ contract.

2. The \_\_\_\_\_ (MWBE Firm), is either unavailable for the work/service or unable to prepare a bid for this project for the following reason(s):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Signature of Subcontractor MWBE Representative

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

\_\_\_\_\_  
MDOT/Baltimore City Certification #

\_\_\_\_\_  
Email Address #

\_\_\_\_\_  
Telephone #

**3. PRIME'S SIGNATURE AND CERTIFICATION**

I certify under oath that I contacted the Certified MWBE and they advised me that they are unavailable, unable to perform the work/services for the above-contract or failed to respond to repeated requests for a price proposal for the above-contract.

\_\_\_\_\_  
Signature of Prime

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

Rev 12/2024

**BALTIMORE COUNTY, MARYLAND**  
**MWBE - OUTREACH EFFORTS - COMPLIANCE STATEMENT**  
**(FORM E)**

*\*This document must be completed and submitted with Bid/Proposal to Baltimore County.*

**NOTE: If you do not complete and submit this form with your bid or offer to the County, the County may, in its sole discretion, deem your bid or offer NON-RESPONSIVE and accordingly the COUNTY WILL NOT CONSIDER YOU FOR CONTRACT AWARD.**

In conjunction with the bid or offer submitted in response to Solicitation Number \_\_\_\_\_, I state the following:

1. Bidder/Offeror identified opportunities to subcontract in these specific work categories:

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2. Attached to this form are copies of the solicitation documentation in accordance with Section 6 (E) Bid Requirements of the Executive Order, used to solicit certified MWBEs for the subcontract opportunities accompanied with the signed MWBE Subcontractor Unavailability Certificate (Form D).

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3. Bidder/Offeror made the following attempts to solicit MWBEs:

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\_\_\_\_\_  
Signature – Bidder Offeror

\_\_\_\_\_  
Print or Type Name of Firm

\_\_\_\_\_  
Street Address

\_\_\_\_\_  
City                      State      Zip Code

\_\_\_\_\_  
Date



**JOHN A. OLSZEWSKI, JR.**  
*County Executive*

**SEVETRA PEOPLES-BROWN**  
*Executive Director*  
*Chief of Diversity, Equity and Inclusion*

To: Contractors/Consultants

From: Minority and Women Business Enterprise Office

Date: December 13, 2024

Subject: Compliance Reporting and Penalties

Baltimore County, Maryland (the "County") requires all Prime Contractors and all Subcontractors to submit payment reports by the 10th of each month through an online MWBE Compliance Portal (PRISM). The Portal can be found under Compliance Reporting for Primes and Subcontractors at [www.baltimorecountymd.gov/go/mwbe](http://www.baltimorecountymd.gov/go/mwbe). In the event you are not able to enter your payments in PRISM, a spreadsheet is attached for your use. Please be sure to list the PO for each invoice/payment reported and include in your submission any corresponding documentation (e.g. copies of invoices or canceled checks).

The County has found that a number of companies are failing to file reports in a timely manner, which makes it difficult for the County to verify compliance. As a result, the County has determined to assess penalties for non-compliance, effective September 1, 2018, as follows:

- (a) For failure to file timely monthly reports:
  - a. Assessment of a late fee of \$10 per day per task, up to a maximum of \$1,500 per task; and/or
  - b. For multiple violations, termination of the contract for convenience or for default, with the contractor suspended from participating in County contracts for five (5) years.
- (b) For failure to meet MWBE requirements:
  - a. Assessment of a penalty of up to 10% of the contract value; and/or
  - b. Termination of the contract for convenience, with the contractor suspended from participating in County contracts for five (5) years together with assessment of a penalty of up to 10% of the contract value; and/or
  - c. Termination of the contract for default together with assessment of a penalty of 10% of the contract value.

Each action and/or remedy described above is at the sole discretion of the County, and is in addition to any damages which the County may be entitled to under the contract.

This short video can be used as guidance on submitting the Prime to Subcontractor Payment Reporting:

[http://stage.prismcompliance.com/etc/movies/vendor\\_contractpayment\\_tutorial.htm](http://stage.prismcompliance.com/etc/movies/vendor_contractpayment_tutorial.htm)

If after contract expiration, it has been determined the MWBE firms named were not used or were under used, by the contractor and supporting documentation was not provided and approved by the County the contractor may be assessed a penalty of up to 10% of the contract value and/or suspended from participating in County contracts for 5 years.

Questions regarding this correspondence and/or the use of this system can be directed to the MWBE Office at [mwbe@baltimorecountymd.gov](mailto:mwbe@baltimorecountymd.gov) or call (410) 887-3407.

Attachment:     MWBE Payment Report Form  
                  MWBE Payment Acknowledgement Form

Cc: File

# **S E C T I O N V**

## **POST AWARD DOCUMENTS**

**This Section to be Completed  
by Successful Bidder after Award**

CONTRACT AGREEMENT

THIS CONTRACT AGREEMENT (“Contract”), IS MADE THIS \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_, by and between Baltimore County, Maryland, a body corporate and politic (“County”), and \_\_\_\_\_, (“Contractor”).

WITNESSETH, that the Contractor, for and in consideration of the payment or payments herein specified and agreed to by the County, hereby covenants and agrees to furnish and deliver all the materials and to do and perform all the work, services, and labor in fulfillment of the requirements of Contract Number **25067 GX0** “Project”) in strict conformity with the solicitation, plans, specifications, special provisions, any and all addenda, and the proposal, at the prices named therein, and all of which are collectively the Proposal, and said Proposal is attached hereto and made a part thereof.

The Project shall be done in strict compliance with (i) the Proposal, (ii) the Baltimore County Department of Public Works and Transportation September 2023 “Standard Specifications for Construction and Materials” and “Standard Details for Construction” (iii) and any and all revisions thereto as of the date of advertisement, including but not limited to the General Conditions Building Projects, as applicable, and all of which (i-iii) are made a part hereof and incorporated herein (collectively, the “Specifications”). Contractor understands and agrees it is Contractor’s responsibility and obligation to obtain a copy of the “Specifications” and agrees the Specifications are incorporated herein. Copies are available on the County’s website at [www.baltimorecountymd.gov/departments/public-works/standards](http://www.baltimorecountymd.gov/departments/public-works/standards).

The Project shall be subject to the inspection and approval of the Office of Budget and Finance – Property Management for Baltimore County, or his authorized representative, and in the event any portion thereof shall be rejected by said Director or his representative as defective or unsuitable, then the said portion shall be removed and replaced and be performed anew to the satisfaction and approval of the said Director or his representative at the cost and expense of the Contractor.

THE CONTRACTOR AFFIRMS that it is aware of, and will comply with, the provisions of Sections 14-101 through 14-108 of the Election Law Article of the Annotated Code of Maryland, as the same may be amended from time to time, which require that every person who makes, during any 12-month period, one or more contracts, with one or more Maryland governmental entities involving cumulative consideration, of at least \$200,000.00, to file with the State Board of Elections certain specified information to include disclosure of attributable political contributions in excess of \$500 during defined reporting periods.

THE CONTRACTOR FURTHER COVENANTS AND AGREES that all the Project shall be furnished, performed and delivered, in every respect, to the satisfaction and approval of the Office of Budget and Finance – Property Management, aforesaid, on or before the expiration of **One Hundred Forty-Nine (149) CALENDAR DAYS** (the “Contract Period”) after written notice has been given by the Director or their authorized representative to begin the work.

IT IS AGREED THAT TIME IS OF THE ESSENCE. In the event the Contractor fails to achieve Final Completion and Final Acceptance of the Contract work within the Contract Period specified herein, plus any extensions thereto agreed to in writing by a legally authorized representative of the County pursuant to the terms of this Contract, then Contractor shall pay the County the sum of **FIFTEEN HUNDRED DOLLARS (\$1500.00)** as Liquidated Damages for each **CALENDAR DAY** after the expiration of the Contract Period, as may be extended by the County, until the Contractor achieves Final Completion and Final Acceptance of the Project.

\_\_\_\_\_  
**Contractor’s Initials**

\_\_\_\_\_  
Date

Rev. 09/2024

IT IS FURTHER AGREED that:

- (a) These Liquidated Damages are a reasonable estimate of the County's damages solely due to the public's loss of use of the Project during the delay period and is not a penalty.
- (b) It is very difficult, if not impossible, to accurately measure the damages to the County due to the public's loss of use of the Project during the delay period.
- (c) Notwithstanding GP 8.09 of the Baltimore County Standard Specification for Construction, in addition to the damages due to the public's loss of use of the Project during the delay period, the County is likely to incur additional direct costs during the delay period, including but not limited to, costs for construction management, consultants, architectural services, office trailer and supplies, utilities, County employees' time, County vehicles, and such other costs that the County will incur to continue administration of the construction and the Contract during the delay period, all of which will be monitored by the County, and if so required by the County, the Contractor shall pay such actual damages incurred during the delay period. THE PARTIES HERETO UNDERSTAND AND AGREE THAT CONTRACTOR'S OBLIGATION TO PAY THE COUNTY FOR ACTUAL DAMAGES DURING THE DELAY PERIOD SHALL BE IN ADDITION TO THE CONTRACTOR'S OBLIGATION TO PAY THE LIQUIDATED DAMAGES DUE TO THE PUBLIC'S LOSS OF USE OF THE PROJECT.
- (d) The County shall have the right, but not the obligation, to deduct the Liquidated Damages due to the public's loss of use of the Project, and the County's actual costs and costs to continue administration of the construction and the Contract, from any monies due or any monies that may become due to the Contractor.

IT IS DISTINCTLY UNDERSTOOD AND AGREED that no claim for extra work, material or overhead not specifically provided for in the Contract will be allowed by the County, nor shall the Contractor do any work or furnish any materials not covered by this Contract and the Specifications, unless the same is ordered in writing by a legally authorized representative of the Office of Budget and Finance – Property Management in accordance with the terms of the Contract. Any such work or materials which may be done or furnished by the Contractor without any such written order first being given shall be at said Contractor's sole risk, cost and expense and Contractor hereby covenants and agrees that without such written order, Contractor shall make no claim for compensation for work, materials, or overhead so done or furnished.

NOTWITHSTANDING GP 4.06 OF THE BALTIMORE COUNTY STANDARD SPECIFICATIONS FOR CONSTRUCTION, IT IS SPECIFICALLY AGREED that the Contractor shall have no entitlement to damages arising out of delay, disruption, interference or hindrance from any cause whatsoever. However, this provision shall not preclude recovery or damages by the Contractor for hindrances or delays due solely to fraud or gross negligence on the part of the County or its agents.

IT IS FURTHER DISTINCTLY AGREED that the said Contractor shall not assign this Contract, nor any part thereof, nor any right to any of the monies to be paid hereunder, nor shall any part of the work to be done or material furnished under said Contract be sublet without the prior written consent of a legally authorized representative of the Office of Budget and Finance – Property Management in accordance with the terms of this Contract. Further, the acceptance of the final payment by the Contractor shall effectuate a release in full of all claims against County and its officials, employees, representatives, and agents arising out of, or by reason of the Project and this Contract.

The Contractor shall review government issued identification and badge all employees of the Contractor and its subcontractors. The Contractor shall also review all federal forms, including but not limited to I-9's, for compliance as well as copies of all employment eligibility and identity documentation maintained to the extent required by law.

The Bonds, given by the Contractor in a sum equal to the total contract price of the Project in compliance with the terms and provisions of this Contract, are hereby attached and incorporated herein.

IT IS AGREED that in the event that the County is delayed or prevented from timely execution of this Contract, the Contractor releases County and agrees Contractor shall have no action, claim or demand against County therefore.

Contractor's Initials

Date

Rev. 09/2024

THE CONTRACTOR HEREBY FURTHER AGREES to receive the prices set forth in the Proposal incorporated herein as full compensation for the completion of the Project and, in all respects, to complete said Contract to the satisfaction of the County.

THE CONTRACTOR REPRESENTS AND WARRANTS:

- (i) it is duly formed and validly existing under the laws of the State of \_\_\_\_\_;
- (ii) it is in good standing in the State of Maryland;
- (iii) it has the power and authority to consummate the obligations and responsibilities contemplated hereby, and has taken all necessary action to authorize the execution, delivery and performance required under this Contract;
- (iv) the Contractor and the person executing this Contract for the Contractor each warrant that he/she is duly authorized by the Contractor to execute and seal this Contract on the Contractor's behalf;
- (v) the warranties of merchantability and fitness for a particular purpose and use and warranties of title and against infringement, and all express warranties contained in this Contract, including but not limited to the Proposal (and any sample or model presented by Contractor and expressly accepted by the County) shall apply to the portion of this Contract pertaining to or for goods;
- (vi) all representations and warranties made in the Proposal and herein remain true and correct in all respects when made, as of the date of this Contract, and throughout the term of this Contract; and
- (vii) there exists no actual or potential conflict of interest between its performance under this Contract and its engagement or involvement in any other personal or professional activities and in the event such conflict or potential conflict arises during the term of this Contract, the Contractor shall immediately advise the County in writing thereof.

THE CONTRACTOR shall not disclose any documentation and information of any kind or nature disclosed to the Contractor in the course of its performance of duties hereunder without the express prior written consent of the County.

Those sections in this Contract which by their nature are intended to survive, including but not limited to, Contractor's representations and warranties, confidential information, and indemnification shall survive the termination of this Contract.

IN WITNESS WHEREOF, the Contractor has hereunto set its hand and seal the day and year first above written.

**CONTRACTOR NAME:** \_\_\_\_\_

WITNESS FEDERAL TAX ID or SS #: \_\_\_\_\_

\_\_\_\_\_ By: \_\_\_\_\_ (Seal)

\_\_\_\_\_ Name: \_\_\_\_\_

Type (Print) Name

Title: \_\_\_\_\_ Date: \_\_\_\_\_

WITNESS: **BALTIMORE COUNTY, MARYLAND**

\_\_\_\_\_ By: \_\_\_\_\_ Date: \_\_\_\_\_  
Executive Secretary D'Andrea L. Walker, County Administrative Officer

\_\_\_\_\_ Type (Print) Name

APPROVED FOR FORM AND LEGAL AND SUFFICIENCY\* (Subject to execution by the duly authorized Administrative official and Chairperson of the County Council, as indicated).

APPROVED:

\_\_\_\_\_ Date: \_\_\_\_\_  
Kevin D. Reed, Director  
Office of Budget and Finance

Office of the County Attorney

\*Approval of Form and Legal Sufficiency does not convey approval or disapproval of the substantive nature of this transaction. Approval is based upon typeset documents. All modifications require re-approval.

**PERFORMANCE BOND**

**Bond No.** \_\_\_\_\_

Principal \_\_\_\_\_

Business Address of Principal \_\_\_\_\_

Surety \_\_\_\_\_

Obligee: **BALTIMORE COUNTY, MARYLAND**  
A body corporate and politic

A Corporation of the State of \_\_\_\_\_ and authorized to do business in Maryland

Penal Sum of Bond (express in words and figures)

DOLLARS \$ \_\_\_\_\_

**Cloverland Park Renovations & Enhancements**

\_\_\_\_\_ 20 \_\_\_\_\_

Contract Name

Date of Contract

**25067 GX0**

\_\_\_\_\_ 20 \_\_\_\_\_

Contract Number

Date Bond Executed

**KNOW ALL MEN BY THESE PRESENTS**, that we, the PRINCIPAL, above-named, and SURETY, above-named, and authorized to do business in the State of Maryland, are held and firmly bound unto the OBLIGEE, above-named, in the penal sum of the amount stated above, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

**WHEREAS, THE PRINCIPAL** entered into a certain contract with the OBLIGEE described and dated as shown above and is required to provide this bond pursuant to Maryland State law and/or County law and the contract.

**NOW, THEREFORE**, if the aforesaid PRINCIPAL shall well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the OBLIGEE with or without notice to the SURETY, and during the life of any guaranty required under the contract, and shall also well and truly perform and fulfill all the undertakings covenants, terms, conditions and agreements of any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the SURETY being hereby waived, then, this obligation to be void; otherwise to remain in full force and effect.

**THE SURETY FURTHER GUARANTEES** That it is (a) licensed in the State of Maryland, (b) rated "B" or better by the A.M. Best Company, (c) on federal funded projects, authorized by the underwriting limitation contained in the U.S. Department of the Treasury Circular 570, as amended, to guaranty the amount of the Bid, and (d) in good standing as determined by the County's Engineer. A Performance Bond is required for each and every Contract in excess of twenty-five thousand (\$25,000). A Performance Bond shall be in the amount equal to at least one hundred (100%) percent of the Contract price. The fully executed Performance Bond shall be delivered by the Bidder to the Department's Division of Construction Contracts Administration no later than the time the Contract is to be executed by the Contractor.

**IN WITNESS WHEREOF**, the above-bounded parties have executed this instrument under their several seals on the date indicated above, the name and seal of each party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

**In Presence of:**

**Individual Principal**

Witness: \_\_\_\_\_

as to: \_\_\_\_\_ (SEAL)

Print Name: \_\_\_\_\_

Print Name: \_\_\_\_\_

**Attest:**

**Corporate Principal**

\_\_\_\_\_  
(Name of Corporation)

Witness: \_\_\_\_\_

By: \_\_\_\_\_ Affix

Print Name: \_\_\_\_\_

Print Name: \_\_\_\_\_ Corporate

Title: \_\_\_\_\_ Seal

**Attest:**

**Surety**

\_\_\_\_\_  
(Name of Surety)

**Business Address:** \_\_\_\_\_

Witness: \_\_\_\_\_

By: \_\_\_\_\_ Affix

Print Name: \_\_\_\_\_

Print Name: \_\_\_\_\_ Corporate

Title: \_\_\_\_\_ Seal

Reviewed for Baltimore County Requirements

\_\_\_\_\_  
Office of the County Attorney

**PAYMENT BOND**

Bond Number \_\_\_\_\_

\_\_\_\_\_  
Principal

\_\_\_\_\_  
Business Address of Principal

\_\_\_\_\_  
Surety

Obligee: **BALTIMORE COUNTY, MARYLAND**  
A body corporate and politic

A Corporation of the State of \_\_\_\_\_ and authorized to do business in Maryland

\_\_\_\_\_  
Penal Sum of Bond (express in words and figures)

DOLLARS \$ \_\_\_\_\_

Cloverland Park Renovations & Enhancements  
Contract Name

\_\_\_\_\_ 20 \_\_\_\_\_  
Date of Contract

25067 GX0  
Contract Number

\_\_\_\_\_ 20 \_\_\_\_\_  
Date Bond Executed

**KNOW ALL MEN BY THESE PRESENTS**, that we, the PRINCIPAL, above-named, and SURETY, above-named, and authorized to do business in the State of Maryland, are held and firmly bound unto the OBLIGEE, above-named, in the penal sum of the amount stated above, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

**WHEREAS, THE PRINCIPAL** entered into a certain contract with the OBLIGEE described and dated as shown above and is required to provide this bond pursuant to Maryland State law and/or County Law and the contract.

**NOW, THEREFORE**, the condition of this obligation is such that if the aforesaid PRINCIPAL shall promptly make payments to all persons supplying labor and/or material to the PRINCIPAL and to any subcontractor of the PRINCIPAL in the prosecution of the work provided for in said contract and any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the SURETY being hereby waived, then, this obligation to be void; otherwise to remain in full force and effect.

**THE SURETY FURTHER GUARANTEES** That it is (a) licensed in the State of Maryland, (b) rated "B" or better by the A.M. Best Company, (c) on federal funded projects, authorized by the underwriting limitation contained in the U.S. Department of the Treasury Circular 570, as amended, to guaranty the amount of the Bid, and (d) in good standing as determined by the County's Engineer. A Payment Bond is required for each and every Contract in excess of twenty-five thousand (\$25,000). A Payment Bond shall be in the amount equal to at least one hundred (100%) percent of the Contract price. The fully executed Payment Bond shall be delivered by the Bidder to the Department's Division of Construction Contracts Administration no later than the time the Contract is to be executed by the Contractor.

**IN WITNESS WHEREOF**, the above-bounded parties have executed this instrument under their several seals on the date indicated above, the name and seal of each party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

In Presence of:

Individual Principal

Witness: \_\_\_\_\_

as to: \_\_\_\_\_ (SEAL)

Print Name: \_\_\_\_\_

Print Name: \_\_\_\_\_

Attest:

Corporate Principal

\_\_\_\_\_  
(Name of Corporation)

Witness: \_\_\_\_\_

By: \_\_\_\_\_ Affix

Print Name: \_\_\_\_\_

Print Name: \_\_\_\_\_ Corporate

Title: \_\_\_\_\_ Seal

Attest:

Surety

\_\_\_\_\_  
(Name of Surety)

Business Address: \_\_\_\_\_

Witness: \_\_\_\_\_

By: \_\_\_\_\_ Affix

Print Name: \_\_\_\_\_

Print Name: \_\_\_\_\_ Corporate

Title: \_\_\_\_\_ Seal

Reviewed for Baltimore County Requirements

\_\_\_\_\_  
Office of the County Attorney



**INSURANCE PROVISIONS**

**1. GENERAL REQUIREMENTS**

- 1.1 Coverages Required:  
Unless otherwise required by the specifications or the contract, the Contractor/Vendor shall purchase and maintain the insurance coverage's listed herein.
- 1.2 Certificate of Insurance:  
Before starting work on the contract, or prior to the execution of the Contract on those bid, the Contractor/Vendor shall provide Baltimore County, Maryland with verification of insurance coverage evidencing the required coverages.
- 1.3 Baltimore County as Insured:  
The coverage required, excluding Workers' Compensation and Employers' Liability and Medical Malpractice Liability/Professional Liability/Errors and Omissions Liability, must include Baltimore County, Maryland and its agents, employees, officers, directors, and appointed and elected officials as an additional insured.
- 1.4 Contractor's/Vendor's Responsibility:  
The providing of any insurance herein does not relieve the Contractor/Vendor of any of the responsibilities or obligations the Contractor/Vendor has assumed in the contract or for which the Contractor/Vendor may be liable by law or otherwise.
- 1.5 Failure to Provide Insurance:  
Failure to provide and continue in force the required insurance shall be deemed a material breach of the contract. The Contractor/Vendor must maintain the insurance coverages required under the terms and conditions on this Contract while this Contract is in effect including renewal and extension terms.

- 2.1.4 Damages not to be Excluded:  
Such insurance shall contain no exclusions applying to operations by the Contractor/Vendor or any Subcontractor in the performance of the Contract including but not limited to:
  - (a) Collapse of, or structural injury to, any building or structure;
  - (b) Damage to underground property; or
  - (c) Damage arising out of blasting or explosion.

**2.2 Automobile Liability Insurance**

- 2.2.1 Minimum Limits of Coverage:  
Bodily Injury Liability and Property Damage Liability  
Combined Single Limit - \$500,000 any one accident.
- 2.2.2 Minimum Coverages to be Included:  
Such insurance shall provide coverage for all owned, non-owned and hired automobiles.

**2.3 Workers' Compensation and Employers' Liability Insurance**

Such insurance must contain statutory coverage, including Employers' Liability insurance with limits of at least:  
Bodily Injury by Accident - \$250,000 each accident  
Bodily Injury by Disease - \$500,000 policy limit  
Bodily Injury by Disease - \$250,000 each employee

**2.4 Valuable Papers and Records Coverage and Electronic Data Processing (Data and Media) Coverage**

Minimum Limits of Coverage:  
\$100,000 Per Claim and Each Occurrence  
\$100,000 in the Aggregate

**2. INSURANCE COVERAGES**

**2.1 General Liability Insurance**

- 2.1.1 Minimum Limits of Coverage:  
Personal Injury Liability and Property Damage Liability  
Combined Single Limit - \$500,000 each occurrence.
- 2.1.2 Such insurance shall protect the Contractor/Vendor from claims which may arise out of, or result from, the Contractor's/Vendor's operations under the contract, whether such operations be by the Contractor/Vendor, any subcontractor, anyone directly or indirectly employed by the Contractor/Vendor or Subcontractor, or anyone for whose acts any of the above may be liable.
- 2.1.3 Minimum Coverages to be Included:
  - (a) Independent Contractor's coverage;
  - (b) Completed Operations and Products Liability coverage;
  - (c) Contractual Liability coverage.

**2.5 Other**

Such other insurance in form and amount as may be customary for the type of business being under taken by the Contractor/Vendor.

**2.6 Builder's Risk**

See Special Provisions page 186 and General Conditions page 34,35, Article 33.