



**BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND**

REQUEST FOR PROPOSALS

Item Description: ASCHAM ST PARK IMPROVEMENTS

Date to be opened: MONDAY, APRIL 25, 2022

Issuing Department: PARKS DEPARTMENT

QUESTIONS

- Please direct questions relative to the bidding process, how to fill out forms, and how to submit a bid (Pages 1-8) to Purchasing Agent Patti Jordan.
 - Phone: (401) 680-5264
 - Email: pjordan@providenceri.gov
 - Please use the subject line “**RFP Question**”
- Please direct questions relative to the Minority and Women’s Business Enterprise Program and the corresponding forms (Pages 9-13) to the MBE/WBE Outreach Director for the City of Providence, Grace Diaz
 - Phone: (401) 680-5766
 - Email: gdiaz@providenceri.gov
 - Please use subject line “**MBE WBE Forms**”
- Please direct questions relative to the specifications outlined (beginning on page 14) to the issuing department’s subject matter expert:
 - **Sam Greenwood – Project Manager**
 - **401.680.7299**
 - sgreenwood@providenceri.gov

Pre-bid Conference (Non-Mandatory)

Tuesday, April 12th at 10am – at project site: 323 Hawkins St, Providence - 02904



BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

INSTRUCTIONS FOR SUBMISSION

Bids may be submitted up to **2:15 P.M.** on the above meeting date at the **Department of the City Clerk, Room 311, City Hall, 25 Dorrance Street, Providence.** At 2:15 P.M. all bids will be publicly opened and read at the Board of Contract Meeting in the City Council Chambers, on the 3rd floor of City Hall.

- Bidders must submit **2 copies** of their bid in sealed envelopes or packages labeled with the captioned **Item Description** and the **City Department to which the RFP and bid are related.** (On page 1)
- Communications to the Board of Contract and Supply that are not competitive sealed bids (i.e. product information/samples) should have “**NOT A BID**” written on the envelope or wrapper.
- Only use form versions and templates included in this RFP. If you have an old version of a form do not recycle it for use in this bid.
- The bid envelope and information relative to the bid must be addressed to:

Board of Contract and Supply
Department of the City Clerk – City Hall, Room 311
25 Dorrance Street
Providence, RI 02903

****PLEASE NOTE:** This bid may include details regarding information that you will need to provide (such as proof of licenses) to the issuing department before the formalization of an award.

*This information is **NOT** requested to be provided in your initial bid by design.*

All bids submitted to the City Clerk become public record. Failure to follow instructions could result in information considered private being posted to the city’s Open Meetings Portal and made available as a public record. The City has made a conscious effort to avoid the posting of sensitive information on the City’s Open Meetings Portal, by requesting that such sensitive information be submitted to the issuing department only at their request.



BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

BID PACKAGE CHECKLIST

Digital forms are available in the City of Providence Purchasing Department Office or online at <http://www.providenceri.gov/purchasing/how-to-submit-a-bid/>

The bid package **MUST** include the following, in this order:

- Bid Form 1: Bidder's Blank as the cover page/ 1st page (*see page 6 of this document*)
- Bid Form 2: Certification of Bidder as 2nd page (*see page 7 of this document*)
- Bid Form 3: Certificate Regarding Public Records (*see page 8 of this document*)
- Forms from the Minority and Women Business Enterprise Program: Based on Bidder Category. *See forms and instructions enclosed (pages 9-13) or on: <https://www.providenceri.gov/purchasing/minority-women-owned-business-mbewbe-procurement-program/>*

***Please note: MBE/WBE forms must be completed for EVERY bid submitted and must be inclusive of ALL required signatures. Forms without all required signatures will be considered incomplete.**

- Bidder's Proposal/Packet: Formal response to the specifications outlined in this RFP, including pricing information and details related to the good(s) or service(s) being provided. Please be mindful of formatting responses as requested to ensure clarity.
- Financial Assurance, *if requested* (as indicated on page 5 of this document under "Bid Terms")

All of the above listed documents are REQUIRED. (With the exception of financial assurances, which are only required if specified on page 5.)

*****Failure to meet specified deadlines, follow specific submission instructions, or enclose all required documents with all applicable signatures will result in disqualification, or in an inability to appropriately evaluate bids.**



BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

NOTICE TO VENDORS

1. The Board of Contract and Supply will make the award to the lowest qualified and responsible bidder.
2. In determining the lowest responsible bidder, cash discounts based on preferable payment terms will not be considered.
3. Where prices are the same, the Board of Contract and Supply reserves the right to award to one bidder, or to split the award.
4. No proposal will be accepted if the bid is made in collusion with any other bidder.
5. Bids may be submitted on an "equal in quality" basis. The City reserves the right to decide equality. Bidders must indicate brand or the make being offered and submit detailed specifications if other than brand requested.
6. A bidder who is an out-of-state corporation shall qualify or register to transact business in this State, in accordance with the Rhode Island Business Corporation Act, RIGL Sec. 7-1.2-1401, et seq.
7. The Board of Contract and Supply reserves the right to reject any and all bids.
8. Competing bids may be viewed in person at the Department of the City Clerk, City Hall, Providence, immediately upon the conclusion of the formal Board of Contract and Supply meeting during which the bids were unsealed/opened. Bids may also be accessed electronically on the internet via the City's Open Meetings Portal.
9. As the City of Providence is exempt from the payment of Federal Excise Taxes and Rhode Island Sales Tax, prices quoted are not to include these taxes.
10. In case of error in the extension of prices quoted, the unit price will govern.
11. The contractor will **NOT** be permitted to: a) assign or underlet the contract, or b) assign either legally or equitably any monies or any claim thereto without the previous written consent of the City Purchasing Director.
12. Delivery dates must be shown in the bid. If no delivery date is specified, it will be assumed that an immediate delivery from stock will be made.
13. A certificate of insurance will normally be required of a successful vendor.
14. For many contracts involving construction, alteration and/or repair work, State law provisions concerning payment of prevailing wage rates apply (RIGL Sec. 37-13-1 et seq.)
15. No goods should be delivered or work started without a Purchase Order.
16. **Submit 2 copies of the bid to the City Clerk, unless the specification section of this document indicates otherwise.**
17. Bidder must certify that it does not unlawfully discriminate on the basis of race, color, national origin, gender, gender identity or expression, sexual orientation and/or religion in its business and hiring practices and that all of its employees are lawfully employed under all applicable federal, state and local laws, rules and regulations. (See Bid Form 2.)



BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

BID TERMS

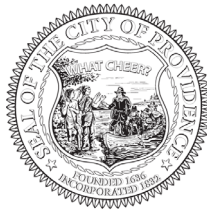
1. Financial assurances may be required in order to be a successful bidder for Commodity or Construction and Service contracts. If either of the first two checkboxes below is checked, the specified assurance must accompany a bid, or the bid will not be considered by the Board of Contract and Supply. The third checkbox indicates the lowest responsible bidder will be contacted and required to post a bond to be awarded the contract.
 - a) ☐ A certified check for \$_____ must be deposited with the City Clerk as a guarantee that the Contract will be signed and delivered by the bidder.
 - b) ☒ A bid bond in the amount of 5 per centum (%) of the proposed total price, must be deposited with the City Clerk as a guarantee that the contract will be signed and delivered by the bidder; and the amount of such bid bond shall be retained for the use of the City as liquidated damages in case of default.
 - c) ☒ A performance and payment bond with a satisfactory surety company will be posted by the bidder in a sum equal to one hundred per centum (100%) of the awarded contract.
 - d) ☐ No financial assurance is necessary for this item.
2. Awards will be made within **sixty (60) days of bid opening**. All bid prices will be considered firm, unless qualified otherwise. Requests for price increases will not be honored.
3. Failure to deliver within the time quoted or failure to meet specifications may result in default in accordance with the general specifications. It is agreed that deliveries and/or completion are subject to strikes, lockouts, accidents and Acts of God.

The following entry applies only for COMMODITY BID TERMS:

4. Payment for partial delivery will not be allowed except when provided for in blanket or term contracts.

The following entries apply only for CONSTRUCTION AND SERVICE BID TERMS:

5. Only one shipping charge will be applied in the event of partial deliveries for blanket or term contracts.
6. Prior to commencing performance under the contract, the successful bidder shall attest to compliance with the provisions of the Rhode Island Worker's Compensation Act, RIGL 28-29-1, et seq. If exempt from compliance, the successful bidder shall submit a sworn Affidavit by a corporate officer to that effect, which shall accompany the signed contract.
7. Prior to commencing performance under the contract, the successful bidder shall, submit a certificate of insurance, in a form and in an amount satisfactory to the City.



BOARD OF CONTRACT AND SUPPLY
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BID FORM 1: Bidders Blank

1. Bids must meet the attached specifications. Any exceptions or modifications must be noted and fully explained.
2. Bidder's responses must be in ink or typewritten, and all blanks on the bid form should be completed.
3. The price or prices proposed should be stated both in **WRITING** and in **FIGURES**, and any proposal not so stated may be rejected. **Contracts exceeding twelve months must specify annual costs for each year.**
4. Bids **SHOULD BE TOTALED** so that the final cost is clearly stated (unless submitting a unit price bid), however **each item should be priced individually**. Do not group items. Awards may be made on the basis of *total* bid or by *individual items*.
5. All bids **MUST BE SIGNED IN INK.**

Name of Bidder (Firm or Individual): _____

Contact Name: _____

Business Address: _____

Business Phone #: _____

Contact Email Address: _____

Agrees to bid on (Write the "Item Description" here): _____

If the bidder's company is based in a state other than Rhode Island, list name and contact information for a local agent for service of process that *is located within Rhode Island* _____

Delivery Date (if applicable): _____

Name of Surety Company (if applicable): _____

Total Amount in Writing*: _____

Total Amount in Figures*: _____

** If you are submitting a unit price bid, please insert "Unit Price Bid"*

Use additional pages if necessary for additional bidding details.

Signature of Representation

Title



BOARD OF CONTRACT AND SUPPLY
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BID FORM 2: Certification of Bidder
(Non-Discrimination/Hiring)

Upon behalf of _____ (Firm or Individual Bidding),

I, _____ (Name of Person Making Certification),

being its _____ (Title or "Self"), hereby certify that:

1. Bidder does not unlawfully discriminate on the basis of race, color, national origin, gender, sexual orientation and/or religion in its business and hiring practices.
2. All of Bidder's employees have been hired in compliance with all applicable federal, state and local laws, rules and regulations.

I affirm by signing below that I am duly authorized on behalf of Bidder, on

this _____ day of _____ 20____.

Signature of Representation

Printed Name



BOARD OF CONTRACT AND SUPPLY
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BID FORM 3: Certificate Regarding Public Records

Upon behalf of _____ (Firm or Individual Bidding),

I, _____ (Name of Person Making Certification),

being its _____ (Title or "Self"), hereby certify an

understanding that:

1. All bids submitted in response to Requests for Proposals (RFP's) and Requests for Qualification (RFQ's), documents contained within, and the details outlined on those documents become public record upon receipt by the City Clerk's office and opening at the corresponding Board of Contract and Supply (BOCS) meeting.
2. The Purchasing Department and the issuing department for this RFP/RFQ have made a conscious effort to request that sensitive/personal information be submitted directly to the issuing department and only at request if verification of specific details is critical the evaluation of a vendor's bid.
3. The requested supplemental information may be crucial to evaluating bids. Failure to provide such details may result in disqualification, or an inability to appropriately evaluate bids.
4. If sensitive information that has not been requested is enclosed or if a bidder opts to enclose the defined supplemental information prior to the issuing department's request in the bidding packet submitted to the City Clerk, the City of Providence has no obligation to redact those details and bears no liability associated with the information becoming public record.
5. The City of Providence observes a public and transparent bidding process. Information required in the bidding packet may not be submitted directly to the issuing department at the discretion of the bidder in order to protect other information, such as pricing terms, from becoming public. Bidders who make such an attempt will be disqualified.

I affirm by signing below that I am duly authorized on behalf of Bidder, on

this _____ day of _____ 20____.

Signature of Representation

Printed Name



BOARD OF CONTRACT AND SUPPLY CITY OF PROVIDENCE, RHODE ISLAND

WBE/MBE Form Instructions

The City of Providence actively seeks Minority and Women business enterprises to participate in bids to meet the City's procurement needs. Pursuant to the City of Providence Code of Ordinances, Chapter 21, Article II, Sec. 21-52 (Minority and Women's Business Enterprise) and Rhode Island General Laws (as amended), Chapter 31-14, et seq. (Minority Business Enterprise), Minority Business Enterprise (MBE) and Women's Business Enterprise (WBE) participation goals apply to contracts.

The goal for Minority Business Enterprise (MBE) participation is **10%** of the total bid value.

The goal for Women's Business Enterprise (WBE) participation is **10%** of the total bid value.

The goal for combined MBE/WBE participation is **20%** of the total bid value.

Only businesses certified with the State of Rhode Island as minority and/or women business enterprises are counted towards the City's goals. Eligible minority or women-owned businesses are encouraged to seek certification from the State of Rhode Island Minority Business Enterprise Compliance Office at: <http://odeo.ri.gov/offices/mbeco/>

Note: MBE certification with the State of Rhode Island on the basis of Portuguese heritage is not currently recognized by the City of Providence's MBE program.

Bid Requirements:

All Bidders: All bidders must complete and submit the **MBE/WBE Participation Affidavit** indicating whether or not they are a state-certified MBE/WBE and acknowledging the City's participation goals. Submission of this form is required with **every bid**. Your bid will not be accepted without an affidavit.

Bidders who will be subcontracting: Bidders who will be subcontracting must submit the **Subcontractor Disclosure Form** as part of their bid submission. All subcontractors, regardless of MBE/WBE status, must be listed on this form. Business NAICS codes can be found at <https://www.naics.com/search/>. Awarded bidders are required to submit **Subcontractor Utilization and Payment Reports** with each invoice.

Waiver Requests:

If the percentage of the total amount of the bid being awarded to MBE or WBE vendors is less than 20% (Box F on the Subcontractor Disclosure Form) and the prime contractor is not a Rhode Island State-certified MBE or WBE, the Bidder must complete the **MBE/WBE Waiver Request Form** for review. Waivers will be considered on a case by case basis.

No waiver will be granted unless the waiver request includes documentation that demonstrates that the Bidder has made good faith efforts to achieve the City's stated participation goals. Waivers must be reviewed and signed by the City of Providence's MBE/WBE Outreach Director, Grace Diaz, or her designee. Department Directors cannot recommend a bidder for award if this form is applicable and absent. If the bid does not meet the participation goals of the City of Providence and a waiver is not filed with the signature of the MBE/WBE Outreach Director or her designee, the bid will not be accepted.

Verifying MBE/WBE Certification

It is the responsibility of the bidder to confirm that every MBE/WBE named in a proposal and included in a contract is certified by the Rhode Island Minority Business Enterprise Compliance office. The current MBE/WBE directory is available at the State of RI MBE Office, One Capitol Hill, 2nd Floor, Providence, RI, or online at <http://odeo.ri.gov/offices/mbeco/mbe-wbe.php>. You can also call (401) 574-8670 to verify certification, expiration dates, and services that the MBE/WBE is certified to provide. Note: MBE certification with the State of Rhode Island on the basis of Portuguese heritage is not currently recognized by the City of Providence's MBE program.



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Form Instructions:

Access all bid forms from <http://www.providenceri.gov/oeo/> or <http://www.providenceri.gov/purchasing/minority-women-owned-business-mbewbe-procurement-program/>. **Download** the forms as blank PDFs. Once saved on your computer, fill them out using the Adobe program. The fillable PDFs must be completed in Adobe in order to be saved properly. Google Chrome and similar platforms do not allow for the forms to be saved as filled PDFs. Therefore, please download the blank forms to your computer, then fill them out and save.

Assistance with Form Requirements

Examples of completed forms can be found on the City of Providence website at <http://www.providenceri.gov/oeo/> or <http://www.providenceri.gov/purchasing/minority-women-owned-business-mbewbe-procurement-program/>.

Contract Requirements:

Prime contractors engaging subcontractors must submit the ***Subcontractor Utilization and Payment Report*** to the City Department's Fiscal Agent with every invoice and with request for final payment. This form is not submitted as a part of the initial bid package.

For contracts with duration of less than 3 months, this form must be submitted along with the contractor's request for final payment. The form must include all subcontractors utilized on the contract, both MBE/WBE and non- MBE/WBE, the total amount paid to each subcontractor for the given period and to date. During the term of the contract, any unjustified failure to comply with the MBE/WBE participation requirements is a material breach of contract.

Questions?

For more information or for assistance with MBE/WBE Forms, contact the City of Providence MBE/WBE Outreach Director, Grace Diaz, at mbe-wbe@providenceri.com or (401) 680-5766.



**BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND**

MBE/WBE PARTICIPATION AFFIDAVIT

Item Discussion (as seen on RFP):

Prime Bidder: _____

Prime Bidder (Company) Phone Number: _____

Which one of the following describes your business' status in terms of Minority and/or Woman-Owned Business Enterprise certification with the State of Rhode Island? ☐ MBE ☐ WBE ☐ Neither MBE nor WBE

By initialing the following sections and signing the bottom of this document in my capacity as the contractor or an authorized representative of contractor, I make this Affidavit:

It is the policy of the City of Providence that minority business enterprises (MBEs) and women business enterprises (WBEs) should have the maximum opportunity to participate in procurements and projects as prime contractors and vendors. Pursuant to Sec. 21-52 of the Providence Code of Ordinances and Chapter 31-14 *et seq.* of the Rhode Island General Laws (as amended), MBE and WBE participation goals apply to contracts.

The goal for Minority Business Enterprise (MBE) participation is 10% of the total bid value.

The goal for Women's Business Enterprise (WBE) participation is 10% of the total bid value.

The goal for combined MBE/WBE participation is 20% of the total bid value.

I acknowledge the City of Providence's goals of supporting MBE/WBE certified businesses. Initial _____

If awarded the contract, I understand that my company must submit to the Minority and Women's Business Coordinator at the City of Providence (MBE/WBE Office), copies of all executed agreements with the subcontractor(s) being utilized to achieve the participation goals and other requirements of the RI General Laws. **I understand that these documents must be submitted prior to the issuance of a notice to proceed.** Initial _____

I understand that, if awarded the contract, my firm must submit to the MBE/WBE Office canceled checks and reports required by the MBE/WBE Office on a quarterly basis verifying payments to the subcontractors(s) utilized on the contract.

Initial _____

If I am awarded this contract and find that I am unable to utilize the subcontractor(s) identified in my Statement of Intent, I understand that I must substitute another certified MBE and WBE firm(s) to meet the participation goals. **I understand that I may not make a substitution until I have obtained the written approval of the MBE/WBE Office.**

Initial _____

If awarded this contract, I understand that authorized representatives of the City of Providence may examine the books, records and files of my firm from time to time, to the extent that such material is relevant to a determination of whether my firm is complying with the City's MBE/WBE participation requirements.

Initial _____

I do solemnly declare and affirm under the penalty of perjury that the contents of the foregoing Affidavit are true and correct to the best of my knowledge, information and belief.

Signature of Bidder

Printed Name

Company Name

Date



**BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND**

SUBCONTRACTOR DISCLOSURE FORM

Fill out this form only if you WILL SUBCONTRACT with other parties. If you will not subcontract any portion of the proposed bid, do not fill out this form.

Prime Bidder: _____ Primary NAICS _____

Code: _____

Item Description (as seen on RFP): _____

Please list all Subcontractors below. Include the total dollar value that you propose to share with each subcontractor and the dollar amount to be subcontracted. Please check off MBE and WBE where applicable. The directory of all state-certified MBE/WBE firms is located at www.mbe.ri.gov. Business NAICS codes can be found at <https://www.naics.com/search/>

Proposed Subcontractor	MBE	WBE	Primary NAICS Code	Date of Mobilization	\$ Value of Subcontract
					\$
					\$
					\$
					\$
					\$
					\$
A. MBE SUBCONTRACTED AMOUNT:					\$
B. WBE SUBCONTRACTED AMOUNT:					\$
C. NON MBE WBE SUBCONTRACTED AMOUNT:					\$
D. DOLLAR AMOUNT OF WORK DONE BY THE PRIME CONTRACTOR:					\$
E. TOTAL AMOUNT OF BID (SUM OF A, B, C, & D):					\$
F. PERCENTAGE OF BID SUBCONTRACTED TO MBEs AND WBEs. (Divide the sum of A and B by E and multiply result by 100).					%

Please read and initial the following statement acknowledging you understand. If the percentage of the total amount of the bid being awarded to MBE or WBE vendors is less than 20% (Box F) and the prime contractor is NOT a Rhode Island State-certified MBE or WBE, you must fill out the MBE/WBE WAIVER REQUEST FORM for consideration by City of Providence MBE/WBE Outreach Director. Initial _____

Signature of Bidder _____

Printed Name _____



BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

MBE/WBE Waiver Request Form

Fill out this form only if you are subcontracting and did not meet the 20% MBE/WBE participation goal. State-certified MBE or WBE Prime Bidders are NOT REQUIRED to fill out this form.

Submit this form to the City of Providence MBE/WBE Outreach Director, Grace Diaz, at mbe-wbe@providenceri.gov, for review **prior to bid submission**. This waiver applies only to the current bid which you are submitting to the City of Providence and does not apply to other bids your company may submit in the future.

Prime Bidder: _____

Company Trade: _____

Item Discussion (as seen on RFP): _____

To receive a waiver, you must list the certified MBE and/or WBE companies you contacted, the name of the primary individual with whom you interacted, and the reason the MBE/WBE company could not participate on this project.

MBE/WBE Company Name	Individual's Name	Company Trade	Why did you choose not to work with this company?

I acknowledge the City of Providence's goal of a combined MBE/WBE participation is 20% of the total bid value. I am requesting a waiver of _____ % MBE/WBE (20% minus the value of **Box F** on the Subcontractor Disclosure Form). If an opportunity is identified to subcontract any task associated with the fulfillment of this contract, a good faith effort will be made to select MBE/WBE certified businesses as partners.

Signature of Prime Contractor

Printed Name

Date Signed

Signature of City of Providence
MBE/WBE Outreach Director

Printed Name of City of Providence
MBE/WBE Outreach Director

Date Signed



BOARD OF CONTRACT AND SUPPLY
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SUPPLEMENTAL INFORMATION

If the issuing department for this RFP determines that your firm's bid is best suited to accommodate their need, you will be asked to provide proof of the following prior to formalizing an award.

An inability to provide the outlined items at the request of the department may lead to the disqualification of your bid.

*This information is **NOT** requested to be provided in your initial bid that you will submit to the City Clerk's office by the "date to be opened" noted on page 1. This list only serves as a list of items that your firm should be ready to provide on request.*

All bids submitted to the City Clerk become public record. Failure to follow instructions could result in information considered private being posted to the city's Open Meetings Portal and made available as a public record.

You must be able to provide:

- Business Tax ID will be requested after an award is approved by the Board of Contract and Supply.
- **Proof of Insurance**



**BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND**

BID FORM 3: Supplemental Bid Form

To whom it may concern:

1. The undersigned, having familiarized (himself) (themselves) (itself) with the **Ascham St Park Improvements** bid affecting the cost of work, and with the Contract Documents (which includes the Invitation for Bids, Instructions to Bidders, Form of Bid Bond, Form of Agreements, form of Non-Collusive Affidavit, Addenda (if any), Drawings, Technical Specification, Form of Surety Bond(s); as prepared by the Providence Parks Department, and on file in the office of the City Clerk 3rd Floor, City Hall, Providence, RI 02903, hereby proposes to furnish all supervision, technical personnel, labor, materials, machinery, tools, equipment and services including utility and transportation services, and to perform such other required work for the **Ascham St Park Improvements** and such other required and incidental work, complete, all in accordance with the above listed documents and for the unit prices for work in-place for the following items and quantities.

2. In submitting this Bid, the bidder understands that the right is reserved by The Providence Parks Department to reject any and all Bids, If written notice of acceptance of this Bid is mailed, telegraphed or delivered to the undersigned within (90) days after the opening thereof, or at any time thereafter before this Bid is withdrawn, the undersigned agrees to execute and deliver an Agreement in the prescribed form and furnish the required bond within (10) days after the Agreement is presented to him/her for signature.

Herewith in accordance with the instructions to Bidders.

3. Attached hereto is an affidavit in proof that the undersigned has not colluded with any person in respect to this. Bid or any bids for the Contractor for which this Bid is submitted. Also attached is a Statement of Bidder's Qualifications.

4. Application unit prices are contained in the Agreement (established as the result of either a Unit Price Bid or a Supplemental Schedule of Unit Prices), the City of Providence may order the Contractor to proceed with desired changes in the work, the value of such changes to be determined by the measured quantities involved and the application unit prices specified in the Contract.

5. The City of Providence reserves the right to determine the lowest responsible Bidder based on past experience with the City and/or recommendations by City and/or state agencies with an interest in this procurement. The City reserves the right to award the project to the appropriate bidder in the best interest of the City of Providence.

CERTIFICATION OF NON-SEGREGATED FACILITIES

The Bidder certifies that he/she does not maintain or provide for his/her employees any segregated facilities at any of his establishments, and that he/she does not permit his/her employees to perform their services at any location, under his/her control, where segregation facilities are maintained. The Bidder agrees that a breach of this certification will be a violation of the Equal Opportunity Clause in any contract resulting from acceptance of this Bid. As used in this certification, term "segregation facilities" means any waiting rooms, work rooms, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation and housing facilities provided for employee which are segregated by explicit directive or are in fact segregated on basis of race, color, religion, or national origin, because of habit, local custom, or otherwise. The Bidder agrees that (except where he/she has obtained identical certification from proposed subcontractors for specific time periods) he/she will obtain identical certification from proposed subcontractor prior to the award of subcontracts exceeding \$10,000.00 which are not exempt from provisions of the Equal Opportunity Clause, and that he /she will retain such certifications in his/her files.

NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. & 1001.

DATE _____, 20__



BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

Name of Bidder and Official Address:

E-Mail: _____

Name of Authorized Representative (Contact):

By _____

(Signature)

Title _____

Phone: _____

**Bidder shall indicate, in space provided,
the earliest possible Project Start-up Date:** _____, 20 ____

ADDENDA: The undersigned acknowledges receipt of the following Addenda, if any, and has included the provisions thereof in this Bid (If Any):

<u>Addendum No.</u>	<u>Date</u>
_____	_____, 20 ____
_____	_____, 20 ____

<u>Addendum No.</u>	<u>Date</u>
_____	_____, 20 ____
_____	_____, 20 ____

Sub-Contractors (If Any):

Name: _____ **Scope of Work:** _____ **MBE / WBE**

Name: _____ **Scope of Work:** _____ **MBE / WBE**

Name: _____ **Scope of Work:** _____ **MBE / WBE**



**BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND**

SUPPLEMENTAL BID FORM

ASCHAM ST PARK IMPROVEMENTS

BASE BID:

Ascham St Park is a 1.7 acre park in the Charles Neighborhood of Providence. The park is situated largely below the surrounding neighborhood and has large concrete retaining walls on two sides and a steep embankment on one side. The main focus of this project is on improving the area around and access to the existing slide installed on the embankment. This will include stabilizing the slope with boulders, constructing a staircase and landing from granite and pavers, removing and replacing bituminous walkways and replacing the fence on Hawkins St.

BASE BID: The Base Bid scope of work for this project shall include, but not be limited to the following:

- Remove & Dispose Existing Bituminous Walkway to Limits Shown
- R&D Existing Chain Link Fence & Footings Along Hawkins St
- Furnish & Install 'Rock Scramble' Slope Around Embankment Slide
- Deliver & Install Granite Steps from Reclaimed Curb (Supplied by Providence Parks Dept)
- Furnish & Install Unit Paver Landings
- F&I Boulder Cheekwalls for Stairs
- Deliver & Install Granite Curb Retaining Edge from Reclaimed Curb (Supplied by Providence Parks Dept)
- F&I Boulder Retaining Wall
- F&I 3" Bituminous Walkway
- F&I Slide Wear Mats at Bottom of Ex. Slides
- F&I Engineered Wood Fiber Mulch
- F&I LSI Rope Climb
- F&I 4'H Welded Wire Fence
- F&I One (1) 55 Gal Trash Receptacle
- F&I limited planting for erosion control

In addition to stating the Total Base Bid, the bidder shall state Unit Prices for related work listed under each bid item which represents the work items included in the Total Base Bid. The Unit Prices are quoted for computing adjustments to the Base Bid prior to Contract award, as well as during the course of construction, based upon extra work ordered by the City or for work countermanded, reduced or omitted by the City in order to stay within the Project budget.

All Work Included in this Project Shall be Completed for the lump sum of:

Dollars
(\$ _____), TOTAL BASE BID

BIDDER: _____



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ADD ALTERNATES:

1. Add Alt # 1 – Lower 12'H Chainlink Fence on Mcmillen St to 6'H - Per Lump Sum

_____ LS \$ _____
price in writing

2. Add Alt # 2 – Replace Chainlink Mesh on Mcmillen St w/ 6'H Black Vinyl Mesh & Paint Posts Black - Per Lump Sum

_____ LS \$ _____
price in writing

3. Add Alt # 3 – Furnish & Install Two (2) Kompan Rumba Picnic Tables on 4" Concrete Pavement - Per Lump Sum

_____ LS \$ _____
price in writing

4. Add Alt # 4 – Furnish & Install Two (2) Cary 55 Gal Trash Receptacles on 4" Concrete Pavement - Per Lump Sum

_____ LS \$ _____
price in writing

5. Add Alt # 5 – Furnish & Install Plantings in 3 Areas Outlined on Sheet L3.0 - Per Lump Sum

_____ LS \$ _____
price in writing

6. Add Alt # 6 – Furnish & Install Plantings in 1 Area Outlined on Sheet L3.0 - Per Lump Sum

_____ LS \$ _____
price in writing

UNIT PRICES:

This list is not intended to include all items required to complete the base bid scope of work but can and shall be used to adjust the contract, prior to or after award, in the best interest of the City of Providence

1. Sawcut Ex. Asphalt Walks – Per Linear Foot

_____ LF \$ _____
price in writing

2. Remove & Dispose Ex. Asphalt Walks – Per Square Foot

_____ SF \$ _____
price in writing

3. Furnish & Install Rock Scramble Slope (Complete) – Per Square Yard

_____ SY \$ _____
price in writing

BIDDER: _____



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4. Deliver & Install Granite Stairs Complete – Per Linear Foot of Tread

_____ **LF** \$ _____
price in writing

5. Deliver & Install Granite Curb – Per Linear Foot

_____ **LF** \$ _____
price in writing

6. Furnish & Install Concrete Unit Pavers Complete – Per Square Foot

_____ **SF** \$ _____
price in writing

7. Furnish & Install Boulder Cheekwalls at Granite Steps – Per Lump Sum

_____ **LS** \$ _____
price in writing

8. Furnish & Install Boulder Retaining Wall at Picnic Area – Per Lump Sum

_____ **LS** \$ _____
price in writing

9. Furnish & Install LSI Rope Climb– Per Each (2 total)

_____ **EA** \$ _____
price in writing

10. Furnish & Install 3” Bituminous Walkway Complete – Per SF

_____ **SF** \$ _____
price in writing

11. Furnish & Install 4’ H Welded Wire Fence – Per LF

_____ **LF** \$ _____
price in writing

12. Furnish & Install Slide Wear Mats – Per EA (2 total)

_____ **EA** \$ _____
price in writing

13. Furnish & Install 12” Engineered Wood Fiber Mulch – Per CY

_____ **CY** \$ _____
price in writing

BIDDER: _____



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14. Furnish & Install Cary 55 Gallon Trash Receptacle – Per EA

_____ EA \$ _____
price in writing

15. Furnish & Install Nyoplast 10” Inline Drain – Per EA

_____ EA \$ _____
price in writing

16. Remove, Raise & Reinstall Catch Basin Frame & Grate – Per EA

_____ EA \$ _____
price in writing

17. Furnish & Install (1) *Syringa reticulata* ‘Ivory Silk’ – Per EA

_____ EA \$ _____
price in writing

18. Furnish & Install (3) *Cornus sericea* ‘Arctic Fire’ – Per EA

_____ EA \$ _____
price in writing

19. Furnish & Install (6) *Mircrobiota decussata* – Per EA

_____ EA \$ _____
price in writing

20. Furnish & Install (6) *Potentilla fruticosa* ‘Pink Beauty’ – Per EA

_____ EA \$ _____
price in writing

21. Furnish & Install (3) *Rhododendron* ‘PJM’ – Per EA

_____ EA \$ _____
price in writing

22. Furnish & Install (3) *Rhus aromatica* ‘Gro Low’ – Per EA

_____ EA \$ _____
price in writing

23. Furnish & Install (3) *Spirea albiflora* – Per EA

_____ EA \$ _____
price in writing

BIDDER: _____



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UNIT PRICES FOR ADD/ALTERNATE ITEMS

24. Remove & Dispose Top 6' of 12'H Chainlink Fence – Per LF

_____ **LF** \$ _____
price in writing

25. Furnish & Install 6'H Chainlink Fence Fabric – Per LF

_____ **LF** \$ _____
price in writing

26. Scrape & Paint 6'H Chainlink Fence Posts – Per EA

_____ **EA** \$ _____
price in writing

27. Furnish & Install 4" Concrete Pavement w/ Gravel Base (Table/Receptacle Pads) – Per Square Foot

_____ **SF** \$ _____
price in writing

28. Furnish & Install Kompan Rumba Picnic Table (Standard) – Per EA

_____ **EA** \$ _____
price in writing

29. Furnish & Install Kompan Rumba Picnic Table (ADA) – Per EA

_____ **EA** \$ _____
price in writing

30. Furnish & Install (3) *Acer rubrum* 'October Glory' – Per EA

_____ **EA** \$ _____
price in writing

31. Furnish & Install (1) *Cercis canadensis* 'Forest Pansy' – Per EA

_____ **EA** \$ _____
price in writing

32. Furnish & Install (1) *Baptisia australis* – Per EA

_____ **EA** \$ _____
price in writing

33. Furnish & Install (3) *Baptisia australis* – Per EA

_____ **EA** \$ _____
price in writing

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34. Furnish & Install (3) *Clethra alnifolia* 'Hummingbird' – Per EA

_____ EA \$ _____
price in writing

35. Furnish & Install (5) *Forsythia* 'Gold Tide' – Per EA

_____ EA \$ _____
price in writing

36. Furnish & Install (3) *Hydrangea arborescens* 'Annabelle' – Per EA

_____ EA \$ _____
price in writing

37. Furnish & Install (3) *Rhododendron catawbiense* 'Alba' – Per EA

_____ EA \$ _____
price in writing

BIDDER: _____

Please note that the list above is not intended to include all items required to complete the base bid scope of work but can and shall be used to adjust the contract prior to or after award – in the best interest of the City of Providence.



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BID DOCUMENTS:

The complete set of Bid Documents consists of the Bid Form, Technical Specifications, Minority Participation Forms, and the following Drawings:

DRAWINGS:

- C-1 Cover
- C-2 Notes & Legend
- C-3 Site Plan & Details
- L1.0 Landscape Preparation Plan
- L2.0 Layout & Materials Plan
- L3.0 Planting Plan
- L4.0 Landscape Details
- L4.1 Landscape Details & Notes

TECHNICAL SPECIFICATION:

- 010000 GENERAL REQUIREMENTS
- 024119 SELECTIVE DEMOLITION
- 044113 GRANITE
- 015639 TEMPORARY TREE AND PLANT PROTECTION
- 312000 EARTH MOVING
- 312213 ROUGH GRADING
- 312500 EROSION AND SEDIMENTATION CONTROLS
- 313716.13 RUBBLE-STONE RIPRAP
- 321216 ASPHALT PAVING
- 321313 CONCRETE PAVING
- 321400 UNIT PAVING
- 321413 PRECAST CONCRETE UNIT PAVING
- 321816.13 PLAYGROUND PROTECTIVE SURFACING
- 323116.10 ORNAMENTAL WELDED WIRE FENCE
- 323253 STONE RETAINING WALLS
- 323343 SITE SEATING AND TABLES
- 329119 LANDSCAPE GRADING
- 329200 TURF AND GRASSES
- 329300 PLANTS

ADDITIONAL INFORMATION REQUIRED WITH BID:

- Qualifications to Perform Work – See Form Below for Information Required
- Minority Participation Forms – 10% MBE / 10 % WBE Goal on this Project



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- Addenda (If Any) - Must Be Acknowledged on Bid Form
- Product Information for Items Submitted as 'Or Equal' to Specified Materials

PROVISIONS OF THIS PROJECT:

- Upon the Issuance of the Award from the Board of Contract – the City shall issue a Contract to be executed by the City and the vendor incorporating the bid specifications. All Provisions of the Specifications are binding.
- Any Permits Required by the City of Providence and/or State of Rhode Island Shall be Obtained by the Vendor – Permit Fees by the City of Providence Shall be Waived – the State ADA Fee Must be Paid
- The Davis Bacon Act Applies (HUD Projects) – Prevailing Wages Must Be Paid for On Site Hours – On-Site Interviews will be Conducted During the Project – Employees Shall be Advised of the Prevailing Wage Rates Prior to Mobilization on Site
- Certified payrolls Must be Submitted With Pay Requests Including Monthly Utilizations Form
- Performance and Payment Bonds (If Required) Must be Submitted within 10 Days of Award or Bid Bond Will be Forfeited
- An Insurance Certificate Shall be Submitted to the City Within 10 Days of Award
- A Copy of the Vendors Contractor's License Must be Submitted within 10 Days of Award
- All On-Site Personnel Shall be Licensed (If Required) and Shall have Proof of All Licenses Required by the State of Rhode Island to Perform the Work Required
- Pay Requests Must be Submitted on Approved AIA Billing Documents (City will Provide if Needed)
- All Subcontractors Shall be Listed on the Bid Form – All Insurance & Payroll Requirements Apply
 - General Contractor Shall be the Insurance Certificate Holder and the City Shall be Named as 'Additionally Insured' with Respect to Liability Insurance
- A Submittal Log Must be Submitted within 10 Days of Award

CLOSE OUT DOCUMENTS:

- Prior to Final Payment the Vendor Shall Provide the Following:
 - Copies of Permits Signed off and Approved (If Any)
 - Operating Manuals and Warranties Shall Be Transferred and/or Delivered
 - Full and Completed As-Built Drawings Shall be Submitted for Approval
 - Training Shall be Provided to City Personnel (If Required)
 - Certification by Manufactures Representative (If Required)

QUALIFICATIONS:

Qualifications will be evaluated on the basis of similar project experience for:

- a. Completion of at least 3 similar projects within the past five years.
- b. Size and dollar value of similar completed projects.
- c. Contractor's performance with similar projects. (references will be checked)
- d.. Relevant experience of individuals assigned to the project.

Questions regarding this bid package shall be submitted via e-mail to **Patti Jordan** at pjordan@providenceri.gov and **Sam Greenwood, Landscape Architect & Project Manager** at sgreenwood@providenceri.gov , no later



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than five (5) working days before the bid opening date.

This project qualifies for prevailing wages per the Prevailing Wages Statute or the Davis Bacon Act (HUD). Certified payrolls will need to be submitted to the owner for all hours worked on site for this project. The Wage Decision for this project shall be as recorded on the Bid Date and is available on the RI Department of Labor website.

Federal Labor Standards

U.S. Department of Housing & Urban Development

Applicability

The Project of Program to which the Construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

A.1. (i) Minimum Wages. All laborers and mechanics employed or working up on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project) will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification or work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5 (a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFT part 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(ii) (a) Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a relationship to the wage rates contained in the wage determination.

(b) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action



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within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140.)

(c) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

(d) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

2. Withholding. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much that the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract. HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the contractor, disburse such amounts withheld for and on account of the contractor or subcontractor to the respective employees to whom they are due. The comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

3. (i) Payrolls and basic records. Payrolls and basic record relating thereto shall be maintained by the contractor during the course of the work preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of labor has found under 29 CFR 5.5 (a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonable anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) or the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017.)



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(ii) (a) The contractor shall submit weekly for each in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant, sponsor or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR Part 5.5(a)(3)(i). This information may be submitted in any form desired. Optional Form WH-34 is available for this purpose and may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), Government Printing Office, Washington, Dc 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149.)

(b) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be maintained under 20 CFR Part 5.5 (a)(3)(i) and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(c) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph AA.3. (ii)(b) of this section.

(d) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph A.3. (i) of this section available for inspection, copying, or transcription by authorized representatives of HUD or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR Part 5.12.

4. (i) Apprentices and Trainees. Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprentice program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship



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program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the even the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirement of Executive Order 11246, s amended, and 29 CFR Part 30.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR Part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor will insert in any subcontract the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as HUD or its designee may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all contract clauses in 29 CFR Part 5.5

7. Contracts termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor as provided in 29 CFR 5.12

8. Compliance with Davis-Bacon and Related Act Requirements. All ruling and interpretations of the Davis-Bacon and Related Act contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and HUD or its designee, the U.S. Department of Labor, or the employees or their representatives.

10. (i) Certification of Eligibility. By entering in to this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR part 24.

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis-Bacon Act of 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.



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(iii) The penalty to making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001. Additionally, U.S. Criminal Code, Section 1010, Title 18, U.S.C., "Federal Housing Administration transaction", provides in part: "Whoever, for the purpose of ...influencing in any way the action of such Administration...makes, utter or publishes any statement, knowing the same to be false...shall be fined not more than \$5,000 or imprisoned not more than two years, or both."

11. Complaints, Proceedings, or Testimony by Employees. No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this Contract to his employer.

B. Contract Work Hours and Safety Standards Act. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in subparagraph (1) or this paragraph, the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph (1) of this paragraph, in the sum of \$25 for each calendar day on which such individual was required or permitted to work in excess of forty hours without payment of the overtime wages required by the clause set forth in subparagraph (1) of this paragraph.

(3) Withholding for unpaid wages for liquidated damages. HUD or its designees shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold of cause to be withheld from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contract, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (2) of this paragraph.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (1) through (4) of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs (1) through (4) of this paragraph.

C. Health and Safety

(1) No laborer or mechanic shall be required to work in surrounding or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.

(2) The Contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 (formerly Part 1518) and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act (Public Law 91-54, 83 Stat. 96).

(3) The Contractor shall include the provisions of this Article in every subcontract so that such provisions will be binding on each subcontractor. The Contractor shall take such action with respect to any subcontract as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

"General Decision Number: RI20220001 02/25/2022

Superseded General Decision Number: RI20210001

State: Rhode Island

Construction Types: Building, Heavy (Heavy and Marine) and Highway

Counties: Rhode Island Statewide.

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories) HEAVY, HIGHWAY AND MARINE CONSTRUCTION PROJECTS

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	<p>. Executive Order 14026 generally applies to the contract.</p> <p>. The contractor must pay all covered workers at least \$15.00 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2022.</p>
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	<p>. Executive Order 13658 generally applies to the contract.</p> <p>. The contractor must pay all covered workers at least \$11.25 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2022.</p>

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Modification Number	Publication Date
0	01/07/2022
1	01/21/2022
2	02/18/2022
3	02/25/2022

ASBE0006-006 12/01/2019

Rates	Fringes
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HAZARDOUS MATERIAL HANDLER
(Includes preparation, wetting, stripping, removal scrapping, vacuuming, bagging & disposing of all insulation materials, whether they contain asbestos or not, from mechanical systems).....\$ 36.60 22.40

ASBE0006-008 09/01/2021

Rates	Fringes
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Asbestos Worker/Insulator
Includes application of all insulating materials, protective coverings, coatings & finishes to all types of mechanical systems.\$ 45.00 32.89

BOIL0029-001 01/01/2021

Rates	Fringes
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BOILERMAKER.....\$ 45.87 29.02

BRRIO003-001 06/01/2020

Rates	Fringes
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Bricklayer, Stonemason, Pointer, Caulker & Cleaner.....\$ 42.55 28.02

BRRIO003-002 03/01/2020

Rates	Fringes
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Marble Setter, Terrazzo Worker & Tile Setter.....\$ 40.78 28.92

BRRIO003-003 03/01/2020

Rates	Fringes
-------	---------

Marble, Tile & Terrazzo Finisher.....\$ 34.10 27.88

CARP0330-001 01/01/2021

Rates	Fringes
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CARPENTER (Includes Soft Floor Layer).....	\$ 39.72	28.66
Diver Tender.....	\$ 40.72	28.66
DIVER.....	\$ 51.47	28.66
Piledriver.....	\$ 39.72	28.66
WELDER.....	\$ 40.72	28.66

FOOTNOTES:

When not diving or tending the diver, the diver and diver tender shall receive the piledriver rate. Diver tenders shall receive \$1.00 per hour above the pile driver rate when tending the diver.

Work on free-standing stacks, concrete silos & public utility electrical power houses, which are over 35 ft. in height when constructed: \$.50 per hour additional.

Work on exterior concrete shear wall gang forms, 45 ft. or more above ground elevation or on setback: \$.50 per hour additional.

The designated piledriver, known as the "monkey": \$1.00 per hour additional.

CARP1121-002 01/06/2020

	Rates	Fringes
MILLWRIGHT.....	\$ 39.07	29.15

ELEC0099-002 06/02/2021

	Rates	Fringes
ELECTRICIAN.....	\$ 43.61	54.71%
Teledata System Installer.....	\$ 32.71	12.57%+14.93

FOOTNOTES:

Work of a hazardous nature, or where the work height is 30 ft. or more from the floor, except when working OSHA-approved lifts: 20% per hour additional.

Work in tunnels below ground level in combined sewer outfall: 20% per hour additional.

ELEV0039-001 01/01/2022

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 56.91	36.885+a+b

FOOTNOTES:

A. PAID HOLIDAYS: New Years Day; Memorial Day; Independence Day; Labor Day; Veterans' Day; Thanksgiving Day; the Friday after Thanksgiving Day; and Christmas Day.

B. Employer contributes 8% basic hourly rate for 5 years or more of service of 6% basic hourly rate for 6 months to 5

years of service as vacation pay credit.

 ENGI0057-001 12/01/2021

	Rates	Fringes
Operating Engineer: (power plants, sewer treatment plants, pumping stations, tunnels, caissons, piers, docks, bridges, wind turbines, subterranean & other marine and heavy construction work)		
GROUP 1.....	\$ 43.55	28.25+a
GROUP 2.....	\$ 41.55	28.25+a
GROUP 3.....	\$ 37.17	28.25+a
GROUP 4.....	\$ 34.32	28.25+a
GROUP 5.....	\$ 40.60	28.25+a
GROUP 6.....	\$ 31.40	28.25+a
GROUP 7.....	\$ 25.40	28.25+a
GROUP 8.....	\$ 37.25	28.25+a
GROUP 9.....	\$ 41.17	28.25+a

a. BOOM LENGTHS, INCLUDING JIBS:

150 feet and over + \$ 2.00
 180 feet and over + \$ 3.00
 210 feet and over + \$ 4.00
 240 feet and over + \$ 5.00
 270 feet and over + \$ 7.00
 300 feet and over + \$ 8.00
 350 feet and over + \$ 9.00
 400 feet and over + \$10.00

a. PAID HOLIDAYS:

New Year's Day, President's Day, Memorial Day, July Fourth, Victory Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, Christmas Day. a: Any employee who works 3 days in the week in which a holiday falls shall be paid for the holiday.

a. FOOTNOTES:

Hazmat work: \$2.00 per hour additional.
 Tunnel/Shaft work: \$5.00 per hour additional.

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Cranes, lighters, boom trucks and derricks

GROUP 2: Digging machine, Ross Carrier, locomotive, hoist, elevator, bidwell-type machine, shot & water blasting machine, paver, spreader, graders, front end loader (3 yds. and over), vibratory hammer & vacuum truck, roadheaders, forklifts, econobile type equipment, tunnel boring machines, concrete pump and on site concrete plants.

GROUP 3: Oilers on cranes.

GROUP 4: Oiler on crawler backhoe.

GROUP 5: Bulldozer, bobcats, skid steer loader, tractor, scraper, combination loader backhoe, roller, front end loader (less than 3 yds.), street and mobile-powered sweeper (3-yd. capacity), 8-ft. sweeper minimum 65 HP).

GROUP 6: Well-point installation crew.

GROUP 7: Utility Engineers and Signal Persons

GROUP 8: Heater, concrete mixer, stone crusher, welding machine, generator and light plant, gas and electric driven pump and air compressor.

GROUP 9: Boat & tug operator.

ENGI0057-002 11/01/2021

	Rates	Fringes
Power Equipment Operator (highway construction projects; water and sewerline projects which are incidental to highway construction projects; and bridge projects that do not span water)		
GROUP 1.....	\$ 36.70	28.25+a
GROUP 2.....	\$ 31.40	28.25+a
GROUP 3.....	\$ 25.40	28.25+a
GROUP 4.....	\$ 31.98	28.25+a
GROUP 5.....	\$ 35.68	28.25+a
GROUP 6.....	\$ 35.30	28.25+a
GROUP 7.....	\$ 30.95	28.25+a
GROUP 8.....	\$ 32.33	28.25+a
GROUP 9.....	\$ 34.28	28.25+a

a. FOOTNOTE: a. Any employee who works three days in the week in which a holiday falls shall be paid for the holiday.

a. PAID HOLIDAYS: New Year's Day, President's Day, Memorial Day, July Fourth, Victory Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day & Christmas Day.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Digging machine, crane, piledriver, lighter, locomotive, derrick, hoist, boom truck, John Henry's, directional drilling machine, cold planer, reclaimer, paver, spreader, grader, front end loader (3 yds. and over), vacuum truck, test boring machine operator, veemere saw, water blaster, hydro-demolition robot, forklift, economobile, Ross Carrier, concrete pump operator and boats

GROUP 2: Well point installation crew

GROUP 3: Utility engineers and signal persons

GROUP 4: Oiler on cranes

GROUP 5: Combination loader backhoe, front end loader (less than 3 yds.), forklift, bulldozers & scrapers and boats

GROUP 6: Roller, skid steer loaders, street sweeper

GROUP 7: Gas and electric drive heater, concrete mixer, light plant, welding machine, pump & compressor

GROUP 8: Stone crusher

GROUP 9: Mechanic & welder

ENGI0057-003 12/01/2021

BUILDING CONSTRUCTION

	Rates	Fringes
Power Equipment Operator		
GROUP 1.....	\$ 42.82	28.25+a
GROUP 2.....	\$ 40.82	28.25+a
GROUP 3.....	\$ 40.60	28.25+a
GROUP 4.....	\$ 36.60	28.25+a
GROUP 5.....	\$ 33.75	28.25+a
GROUP 6.....	\$ 39.90	28.25+a
GROUP 7.....	\$ 39.47	28.25+a
GROUP 8.....	\$ 36.79	28.25+a

a. BOOM LENGTHS, INCLUDING JIBS:

150 ft. and over: + \$ 2.00
 180 ft. and over: + \$ 3.00
 210 ft. and over: + \$ 4.00
 240 ft. and over: + \$ 5.00
 270 ft. and over: + \$ 7.00
 300 ft. and over: + \$ 8.00
 350 ft. and over: + \$ 9.00
 400 ft. and over: + \$10.00

a. PAID HOLIDAYS: New Year's Day, President's Day, Memorial Day, July Fourth, Victory Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day & Christmas Day. a: Any employee who works 3 days in the week in which a holiday falls shall be paid for the holiday.

a. FOOTNOTE: Hazmat work: \$2.00 per hour additional.
 Tunnel/Shaft work: \$5.00 per hour additional.

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Cranes, lighters, boom trucks and derricks.

GROUP 2: Digging machine, Ross carrier, locomotive, hoist, elevator, bidwell-type machine, shot & water blasting machine, paver, spreader, front end loader (3 yds. and over), vibratory hammer and vacuum truck

GROUP 3: Telehandler equipment, forklift, concrete pump & on-site concrete plant

GROUP 4: Fireman & oiler on cranes

GROUP 5: Oiler on crawler backhoe

GROUP 6: Bulldozer, skid steer loaders, bobcats, tractor, grader, scraper, combination loader backhoe, roller, front end loader (less than 3 yds.), street and mobile powered sweeper (3 yds. capacity), 8-ft. sweeper (minimum 65 hp)

GROUP 7: Well point installation crew

GROUP 8: Heater, concrete mixer, stone crusher, welding machine, generator for light plant, gas and electric driven pump & air compressor

IRON0037-001 09/16/2021

	Rates	Fringes
IRONWORKER.....	\$ 38.21	30.58

LABO0271-001 05/30/2021

BUILDING CONSTRUCTION

	Rates	Fringes
LABORER		
GROUP 1.....	\$ 33.55	26.15
GROUP 2.....	\$ 33.80	26.15
GROUP 3.....	\$ 34.30	26.15
GROUP 4.....	\$ 34.55	26.15
GROUP 5.....	\$ 35.55	26.15

LABORERS CLASSIFICATIONS

GROUP 1: Laborer, Carpenter Tender, Mason Tender, Cement Finisher Tender, Scaffold Erector, Wrecking Laborer, Asbestos Removal [Non-Mechanical Systems]

GROUP 2: Asphalt Raker, Adzemen, Pipe Trench Bracer, Demolition Burner, Chain Saw Operator, Fence & Guard Rail Erector, Setter of Metal Forms for Roadways, Mortar Mixer, Pipelayer, Riprap & Dry Stonewall Builder, Highway Stone Spreader, Pneumatic Tool Operator, Wagon Drill Operator, Tree Trimmer, Barco-Type Jumping Tamper, Mechanical Grinder Operator

GROUP 3: Pre-Cast Floor & Roof Plank Erectors

GROUP 4: Air Track Operator, Hydraulic & Similar Self-Powered Drill, Block Paver, Rammer, Curb Setter, Powderman & Blaster

GROUP 5: Toxic Waste Remover

LABO0271-002 05/30/2021

HEAVY AND HIGHWAY CONSTRUCTION

	Rates	Fringes
LABORER		
COMPRESSED AIR		
Group 1.....	\$ 53.45	24.15
Group 2.....	\$ 50.98	24.15

Group 3.....	\$ 40.50	24.15
FREE AIR		
Group 1.....	\$ 44.05	24.15
Group 2.....	\$ 43.05	24.15
Group 3.....	\$ 40.50	24.15
LABORER		
Group 1.....	\$ 33.55	24.15
Group 2.....	\$ 33.80	24.15
Group 3.....	\$ 34.55	24.15
Group 4.....	\$ 27.05	24.15
Group 5.....	\$ 35.55	24.15
OPEN AIR CAISSON, UNDERPINNING WORK AND BORING CREW		
Bottom Man.....	\$ 39.55	24.15
Top Man & Laborer.....	\$ 38.60	24.15
TEST BORING		
Driller.....	\$ 40.00	24.15
Laborer.....	\$ 38.60	24.15

LABORER CLASSIFICATIONS

GROUP 1: Laborer; Carpenter tender; Cement finisher tender; Wrecking laborer; Asbestos removers [non-mechanical systems]; Plant laborer; Driller in quarries

GROUP 2: Adzeperson; Asphalt raker; Barcotype jumping tamper; Chain saw operators; Concrete and power buggy operator; Concrete saw operator; Demolition burner; Fence and guard rail erector; Highway stone spreader; Laser beam operator; Mechanical grinder operator; Mason tender; Mortar mixer; Pneumatic tool operator; Riprap and dry stonewall builder; Scaffold erector; Setter of metal forms for roadways; Wagon drill operator; Wood chipper operator; Pipelayer; Pipe trench bracer

GROUP 3: Air track drill operator; Hydraulic and similar powered drills; Brick paver; Block paver; Rammer and curb setter; Powderperson and blaster

GROUP 4: Flagger & signaler

GROUP 5: Toxic waste remover

LABORER - COMPRESSED AIR CLASSIFICATIONS

GROUP 1: Mucking machine operator, tunnel laborer, brake person, track person, miner, grout person, lock tender, gauge tender, miner: motor person & all others in compressed air

GROUP 2: Change house attendant, powder watchperson, top person on iron

GROUP 3: Hazardous waste work within the ""HOT"" zone

LABORER - FREE AIR CLASSIFICATIONS

GROUP 1: Grout person - pumps, brake person, track person, form mover & stripper (wood & steel), shaft laborer, laborer topside, outside motorperson, miner, conveyor operator, miner welder, heading motorperson, erecting

operator, mucking machine operator, nozzle person, rodperson, safety miner, shaft & tunnel, steel & rodperson, mole nipper, concrete worker, form erector (wood, steel and all accessories), cement finisher (this type of work only), top signal person, bottom person (when heading is 50' from shaft), burner, shield operator and TBM operator

GROUP 2: Change house attendant, powder watchperson

GROUP 3: Hazardous waste work within the ""HOT"" zone

PAIN0011-005 06/01/2021

	Rates	Fringes
PAINTER		
Brush and Roller.....	\$ 36.42	22.90
Epoxy, Tanks, Towers, Swing Stage & Structural Steel.....	\$ 38.42	22.90
Spray, Sand & Water Blasting.....	\$ 39.42	22.90
Taper.....	\$ 37.17	22.90
Wall Coverer.....	\$ 36.92	22.90

PAIN0011-006 06/01/2021

	Rates	Fringes
GLAZIER.....	\$ 39.98	22.90

FOOTNOTES:

SWING STAGE: \$1.00 per hour additional.

PAID HOLIDAYS: Labor Day & Christmas Day.

PAIN0011-011 06/01/2021

	Rates	Fringes
Painter (Bridge Work).....	\$ 54.00	22.90

PAIN0035-008 06/01/2011

	Rates	Fringes
Sign Painter.....	\$ 24.79	13.72

PLAS0040-001 06/03/2019

BUILDING CONSTRUCTION

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 36.00	27.15

FOOTNOTE: Cement Mason: Work on free swinging scaffolds under 3 planks width and which is 20 or more feet above ground and any offset structure: \$.30 per hour additional.

 PLAS0040-002 07/01/2019

HEAVY AND HIGHWAY CONSTRUCTION

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 32.85	22.20

PLAS0040-003 07/01/2019

	Rates	Fringes
PLASTERER.....	\$ 37.55	27.50

PLUM0051-002 08/30/2021

	Rates	Fringes
Plumbers and Pipefitters.....	\$ 46.49	31.40

ROOF0033-004 12/01/2021

	Rates	Fringes
ROOFER.....	\$ 40.40	29.06

SFRI0669-001 01/01/2022

	Rates	Fringes
SPRINKLER FITTER.....	\$ 47.55	27.14

SHEE0017-002 12/01/2020

	Rates	Fringes
Sheet Metal Worker.....	\$ 38.58	36.73

TEAM0251-001 05/01/2019

HEAVY AND HIGHWAY CONSTRUCTION

	Rates	Fringes
TRUCK DRIVER		
GROUP 1.....	\$ 27.96	26.8525+A+B+C
GROUP 2.....	\$ 27.61	26.8525+A+B+C
GROUP 3.....	\$ 27.66	26.8525+A+B+C
GROUP 4.....	\$ 27.71	26.8525+A+B+C
GROUP 5.....	\$ 27.81	26.8525+A+B+C
GROUP 6.....	\$ 28.21	26.8525+A+B+C
GROUP 7.....	\$ 28.41	26.8525+A+B+C
GROUP 8.....	\$ 27.91	26.8525+A+B+C
GROUP 9.....	\$ 28.16	26.8525+A+B+C
GROUP 10.....	\$ 27.96	26.8525+A+B+C

FOOTNOTES:

A. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, plus Presidents' Day, Columbus Day, Veteran's Day & V-J Day, providing the employee has worked at least one day in the

calendar week in which the holiday falls.

B. Employee who has been on the payroll for 1 year or more but less than 5 years and has worked 150 Days during the last year of employment shall receive 1 week's paid vacation; 5 to 10 years - 2 weeks' paid vacation; 10 or more years - 3 week's paid vacation.

C. Employees on the seniority list shall be paid a one hundred dollar (\$100.00) bonus for every four hundred (400) hours worked, up to a maximum of five hundred dollars (\$500.00)

All drivers working on a defined hazard material job site shall be paid a premium of \$2.00 per hour over applicable rate.

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Pick-up trucks, station wagons, & panel trucks

GROUP 2: Two-axle on low beds

GROUP 3: Two-axle dump truck

GROUP 4: Three-axle dump truck

GROUP 5: Four- and five-axle equipment

GROUP 6: Low-bed or boom trailer.

GROUP 7: Trailers when used on a double hook up (pulling 2 trailers)

GROUP 8: Special earth-moving equipment, under 35 tons

GROUP 9: Special earth-moving equipment, 35 tons or over

GROUP 10: Tractor trailer

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO

is available at
<https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an

interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISIO"

Division	Section Title	Pages
<p style="text-align: center;">SPECIFICATIONS GROUP <i>General Requirements Subgroup</i></p>		
DIVISION 01	- GENERAL REQUIREMENTS	
010000	GENERAL REQUIREMENTS	16
015639	TEMPORARY TREE AND PLANT PROTECTION	5
<p style="text-align: center;"><i>Facility Construction Subgroup</i></p>		
DIVISION 02	- EXISTING CONDITIONS	
024119	SELECTIVE DEMOLITION	6
DIVISION 04	- MASONRY	
044113	GRANITE	3
<p style="text-align: center;"><i>Site and Infrastructure Subgroup</i></p>		
DIVISION 31	- EARTHWORK	
312000	EARTH MOVING	7
312213	ROUGH GRADING	4
312500	EROSION AND SEDIMENTATION CONTROLS	4
313716.13	RUBBLE-STONE RIPRAP	3
DIVISION 32	- EXTERIOR IMPROVEMENTS	
321216	ASPHALT PAVING	6
321313	CONCRETE PAVING	8
321400	UNIT PAVING	4
321413	PRECAST CONCRETE UNIT PAVING	8
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SECTION 010000 - GENERAL REQUIREMENTS

PART 1 - GENERAL

1.1 All work done under this Contract shall also be in conformance with the Drawings and these Supplemental Technical Specifications.

A. SCOPE OF WORK

1. The general summary of work to be done under this contract consists of, but shall not be limited, to the following as shown in the Contract Documents:

B. WORK COVERED BY CONTRACT DOCUMENTS

C. The Contractor shall execute the scope of work indicated on Plans and Specifications to enhance the use and operations of the site as shown within the project limits.

D. Work shall be as specifically indicated, shown or described in the Drawings, Technical Specifications, and other Contract Documents.

E. PROJECT INFORMATION

1. OWNER

- a. City of Providence Parks Department Roger Williams Park Dalrymple Boathouse, 1000 Elmwood Avenue, Providence, RI 02907, Telephone: 401.680.7200
- b. Superintendent of Parks: Wendy Nilsson

2. OWNER'S REPRESENTATIVE

- a. Sam Greenwood - Landscape Architect - sgreenwood@providenceri.gov - 401.680.7299

1.2 PROJECT LOCATION

- A. Ascham St Park - 323 Hawkins St, Providence RI

PART 2 - PRODUCTS

2.1 CONTRACTOR USE OF PREMISES

A. The Contractor's use of premises shall be within the limits shown on the Drawings and as defined in the Standard Form of Agreement, for the performance of the Work.

1. The Contractor shall maintain vehicular access and utility service to the abutting properties at all times throughout the course of the construction.
2. The Contractor shall assume full responsibility for security of all materials and equipment on the site, including those of the subcontractors.



3. If directed by the Owner's Representative, the Contractor shall relocate or move any stored items that interfere with operations of the Owner.
4. The Contractor may elect to obtain (at no cost to the Owner) additional storage or work areas off-site if needed to perform the work.

2.2 OWNER OCCUPANCY REQUIREMENTS

- A. The Owner (City) anticipates that site inclusive of all on-site amenities beyond the Limit of Work will remain open throughout the course of construction.
- B. Contractor shall provide the Owner's Representative with a written plan describing the sequences and durations anticipated for the execution of the Work.

2.3 MOBILIZATION, SITE PREPARATION, & DEMOLITION

- A. THE WORK SPECIFIED IN THIS SECTION INCLUDES:
 1. Mobilization of all personnel and equipment;
 2. Preparing the construction site for construction operations;
 3. Materials to be removed and legally disposed of off site.
 4. When applicable, verifying and utilizing survey control points as shown on the Drawings
 5. Protecting existing site features to remain, such as fences, trees, shrubs and grassed areas outside the limit of work.
 6. Protecting underground and overhead utilities and other existing facilities from damage.
 7. Where applicable, provisions for site access and of traffic control.
 8. At cessation of site improvement operations: Site clean-up
 9. De-mobilization of all personnel and equipment.

2.4 CONSTRUCTION STAGING/STOCKPILE AREAS

- A. Staging areas within the Park is permitted as shown on the Plans with the prior consent of and coordination with the Owner.
- B. Restoration of the site to pre-existing condition shall be the sole responsibility of the Contractor.

2.5 MATERIALS AND EQUIPMENT:

- A. Materials to be Removed and Stockpiled.
 1. Materials directed to be removed and stockpiled shall be removed, transported to and stacked in a location directed by the Owner's Representative. All materials shall be neatly stacked as directed.
 2. If the Owner's Representative determines that any part of the materials identified to be stockpiled are unsuitable for re use on the site or by the Owner elsewhere, such materials shall be evaluated for legal disposal by Owner's Representative and Contractor.
- B. Signs: Conform to requirements of Temporary Facilities and Controls.



- C. Temporary Site Protection: Temporary chain-link fence, if so desired shall be furnished, installed and maintained at no additional cost to the Owner. At the completion of all work at the site, the Contractor shall remove all temporary fencing and restore the site to its original condition at no additional cost to the Owner.

2.6 TEMPORARY CONSTRUCTION FACILITIES AND UTILITIES

- A. Make arrangements with the Owner's Representative for storage of materials and equipment in designated locations at the construction site. If staged on site, materials shall be secured from vandalism and or theft.
- B. Plastic construction fence or snow fencing if installed shall be maintained in good condition. Provide barricades, barrels, fencing and/or other barriers around excavations and trenches as required for safety. Upon completion, temporary fencing shall be removed and the affected area restored existing condition.

2.7 SITE MAINTENANCE

- A. Control dust from Contractor operations in accordance with specified dust control measures.
- B. Maintain the Site during construction in a manner that will not obstruct use on neighborhood streets. Proceed with the work in an orderly manner, maintaining the construction site free of debris and unnecessary equipment or materials.
- C. Legally dispose of all debris, rubbish, hazardous materials, oil, and grease in accordance with local ordinances.
- D. Maintain safety and security of the construction site and any stockpiled or staged materials or equipment if left on site.

2.8 TRAFFIC CONTROL

- A. For all of his operations, the Contractor shall provide appropriate traffic control in accordance with, TEMPORARY FACILITIES AND CONTROLS. The purposes of the traffic control are 1) to ensure that operations in the project area are performed in a safe and orderly manner, and 2) to minimize the impact of truck and equipment traffic and noise on adjacent homes near the project area. The Contractor shall be responsible for obtaining any and all required permits and approvals.
- B. Police Details, if required by the City, shall be paid directly to and coordinated with Providence Public Safety by the Owner.

2.9 DEMOBILIZATION

- A. Contractor shall be responsible for site security and safety at all times. Upon substantial completion of the work, Contractor shall remove all excess materials, equipment, construction debris, temporary facilities and construction measures (fencing, signs, barriers, etc.) from the



project area, and shall leave the site in suitable condition for full occupancy and use by the Owner. The sedimentation and erosion controls installed as part of the Work may not necessarily be removed at this time (see below).

- B. The Owner's Representative shall be the sole judge of whether the site has been suitably cleaned.
- C. Upon suitable stabilization of all disturbed "erodible" areas (e.g. acceptable level of grass growth in loamed and seeded areas, mulch applied and stable in planting areas, etc.), contractor shall remove and legally dispose of all sedimentation and erosion control measures (silt fence, hay bales, catch basin inserts, etc.). See Section 024119 Selective Demolition and 329200 Turf and Grasses for directives and procedures.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS

- A. The construction site entrance shall be as indicated on the plans. The Owner will provide access to any locked gate. Any tracked debris from the site present on adjacent roadways shall be removed and the roads swept daily to remove any excess mud, dirt, or rock originating from the site. Trucks hauling material shall be covered and equipped with gates that prevent material from falling out. If present, catch basins within 100 feet of site entry and exit locations shall be protected with inlet sediment control devices and maintained for the duration of the work.
- B. Identify, clearly mark and protect all survey monuments, temporary bench marks as well as any adjacent contractors' work and facilities (if applicable). Repair or replacement shall be at Contractor's sole expense if damaged by Contractor.
- C. Protect existing culverts, sewers, and all other utilities including gas, telecommunications, electricity, and water. Repair or replace at Contractor's sole expense if damaged by Contractor.
- D. Utilize or install drum or sawhorse barricades or backfill all open excavations, holes, trenches, and depressions occurring at construction sites or occurring as part of this work.

3.2 CHANGE ORDER PROCEDURE

A. DESCRIPTION

- 1. The Contractor shall comply with this procedure in the process of giving notification of change and preparing and submitting a proposal for adjustment due to a desired, perceived, or actual change in the work. Changes in the work, or period of performance of the work, may be directed in writing by the Owner's Representative or may be requested by the Contractor. In either case, payment for work accomplished under a modification may not be made until a formal contract modification, incorporating the change into the contract, has been issued and executed. Therefore, it is incumbent upon the Contractor to comply fully with this procedure and to expedite the resolution of changes.



3.3 CHANGE SUBMITTALS

- A. When requested, the Contractor shall submit the following to the Owner's Representative in accordance with the Submittals procedures described in these specifications:
 - 1. Proposal cover letter on Contractor's letterhead;
 - 2. Detailed price proposal;
 - 3. Drawings or other explanatory data; and
 - 4. Time extension statement with justification if any time extension is requested.

3.4 COMPLIANCE

- A. The Contractor shall take such measures as needed to assure familiarity and compliance by its staff with these procedures. If change proposals are incomplete, unclear, or ambiguous or are not supported by adequate documentation, the data will be returned and the Contractor shall resubmit or supplement the proposal as requested by the Owner's Representative. Delay resulting from the Contractor's noncompliance with this procedure shall not in itself constitute the basis for an extension in the time of performance under the contract.

3.5 PROCESSING CHANGES INITIATED BY THE OWNER'S REPRESENTATIVE

- A. The Owner's Representative will initiate changes only in writing. The Owner will sign any Request for Proposal (RFP). This will establish an Extra Work Order (EWO) number, by which the change will be identified until such time as it may be incorporated into the contract by formal Change Order (CO).
- B. The Contractor may or may not be authorized to proceed with the changed work pending resolution of changes in the contract price or time of performance. If the work described in the RFP becomes critical to the timely performance of the Contractor's work, a written request for a Notice to Proceed must be forwarded to the Owner immediately. The Owner will issue any Notice to Proceed. This unilateral modification to the contract may be subject to further negotiation regarding price and time for completion.
- C. Payment for changed work, covered by an authorized modification, will not be made until a notice to proceed covering the changed work has been executed.
- D. The Contractor shall prepare and submit its proposal for change to include at a minimum:
 - 1. A cover letter referencing the EWO number and citing the attachments, if any, which constitute the Contractor's total proposal.
 - 2. A detailed price proposal showing labor, construction equipment, and material quantities and prices at the lowest practical level of each element of the work.
 - 3. Any drawings, sketches, catalog cuts, samples, certifications, or other data required to be submitted by the Owner's Representative that is required to fully document
 - 4. A statement of the proposed change in the time of completion of the contract, together with all required justification for such a change.
 - 5. A statement to the effect that there is "no change in price and/or time of completion of the work under this contract as a result of this proposed change", if that is the case.



- E. The Owner may accept the Contractor's proposal without negotiation. Alternatively, upon receipt of a proposal which is satisfactory in form, the Owner's Representative may require negotiation with the Contractor to arrive at a fair and equitable change in the contract price and time of completion. Upon agreement, a contract modification will be issued by the Owner for Contractor's execution.

3.6 PROCESSING CHANGES INITIATED BY THE CONTRACTOR

- A. Should the Contractor feel that a change to the work under the contract, or to the contract itself, is necessary or desirable, it shall propose such a change to the Owner's Representative. This proposed change shall include a clear and concise description of the proposed change, along with that information cited in above.
- B. Within a reasonable time, the Owner's Representative will review the Contractor's proposal and determine if the proposed change is in the Owner's best interest. If so, Contractor will be advised of this and a an EWO number will be assigned to Contractor's proposal.

3.7 EXECUTING CHANGED WORK

- A. The Contractor is cautioned not to proceed with the work described in a proposed change until it is authorized to do so in writing by the Owner's Representative.

3.8 TERMINATIONS AND DELAYS

- A. Termination of Contract: If the Contractor or any of his/her subcontractors refuses or fails to prosecute the work with such diligence as will insure its completion within the time specified in these Contract Documents, or as modified, as provided for in these Contract Drawings, or violates any other Provisions of this Contract, the Local Public Agency, Local Public Agency, City, by written notice to the Contractor, may terminate the Contractor's right to proceed with the Work. Upon such termination, the City of Providence may take over the work and prosecute the same to completion, by contract or otherwise, and the Contractor and his/her sureties shall be liable to the City of Providence for any additional cost incurred by the City of Providence in its completion of the work and they shall also be liable to the City of Providence for liquidated damages for any delay in the completion of the work as provided below. work and they shall also be liable to the City of Providence for liquidated damages for any delay work. in the completion of the work as provided below. work. If the Contractor's right to proceed is so terminated, the Local Public Agency Local Public Agency City may take possession of and utilize in completing the work such materials, tools, equipment, and plants as may be on the site of the work and necessary thereof. Project work must commence 30 days after award of Contract or as mutually agreed upon by the Contractor and the Owner. The Contractor is required to submit a Work Schedule including all items included in the scope of work. The Work Schedule shall mirror the Schedule of Values which should be in chronological order. Both items are identified in the standard Pre-Bid and Pre-Construction Meeting Minutes as required. The work shall be continuous and the Contractor shall staff the project appropriately to meet the agreed upon work schedule. De- Mobilization from the project, prior to completion, must be agreed upon in writing by the Owner.



3.9 INSPECTION OF WORK

A. DESCRIPTION

1. Work included in this Section consists of periodic observation of construction of the project. The Contractor's work shall be monitored periodically by the Owner's Representative
2. The Owner's Representative presence on site or construction observation work is inspectional in nature and will not include supervision or direction of the actual work of the contractor.
3. In no event will the Owner's Representative be responsible or liable for the contractor's use or administration of personnel, machinery, staging, or other temporary or precautionary construction, safety precautions or procedures, or for compliance by the contractor with the provisions, terms, or specifications of the contract. Observation services provided by the Owner's Representative are solely for the benefit of the Owner.
4. The Contractor shall keep the Owner's Representative informed concerning the work status and projected work schedule through regular communications.
5. The Contractor shall not cover any work related to the required field visits until one of the following occurs:
 - a. The Contractor is authorized by the Owner's Representative to proceed after the field visit.
 - b. The field visit is re-scheduled by the Owner's Representative to a later construction event
 - c. The field visit is waived in writing by the Owner's Representative
6. The Contractor shall request a Final Inspection seven calendar days in advance of the planned completion date. After review of the Notice of Completion, the Owner's Representative may reject the Notice for cause or schedule the Final Inspection. The Owner's Representative will perform its Final Inspection on all phases of the work and develop a comprehensive punch list, which will be provided to the Contractor.
7. The Final Inspection will be scheduled when the punch list items discovered during the Final Inspection have been corrected. If discovered, the Owner's Representative may add new items to the punch list at this inspection.
8. The Contractor is advised that the Owner's Representative will not accept the work until the Owner's Representative determines Substantial Completion has been achieved. Therefore, to minimize its risk, the Contractor should schedule its work to be substantially complete in time to allow the Final Inspection and punch list work to occur in advance of the Project Close Out Date. Due to the construction time period and the anticipated weather conditions, substantially complete will be defined as the completion of construction for all item and the temporary stabilization of all disturbed areas, excluding planting and final seeding. Planting and final seeding is to occur during the time periods specified..
9. Nothing in this Section shall be construed to limit the Owner's Representative right to inspect the work at any time.

3.10 CONSTRUCTION SCHEDULES

A. DESCRIPTION



1. Work included in this Section consists of preparation, submittal, and updating of the project.

3.11 CONSTRUCTION SCHEDULE

- A. Submit the following to the Owner's Representative in accordance with the Submittals Section. Submittals are for the record or approval as indicated.
 1. The proposed construction schedule shall be submitted for approval within five (5) calendar days after receipt of Notice to Proceed.
 2. Submit contract Weekly Summary Reports to the Owner's Representative for the record at weekly site meeting at request by the Owner.
 3. Submit construction progress schedule including a two week look ahead as back up to progress invoices.
- B. The construction schedule shall show all work activities for completion of the work to be performed under this contract and will reflect Contractor's general sequential approach to the work. The construction schedule will be in a bar chart format. The minimum level of detail (number of activities) shall include the activities described in the Schedule of Values and the Scope of the Work. The construction schedule shall demonstrate completion of all work within the period of performance of the contract in a reasonable and achievable manner.

3.12 PERIODIC SCHEDULE UPDATES

- A. The Contractor shall support monthly payment requests with an approved construction schedule marked to indicate progress. Submit updated schedule as necessary.
- B. When in the opinion of the Owner's Representative changes in the work occur that significantly affect the schedule, the Contractor shall submit a revised construction schedule for approval. The revised construction schedule shall be submitted within 10 calendar days after it is requested by the Owner's Representative. The current approved construction schedule shall be used as a baseline for progress reporting.
- C. Acts of God: Claims for additional compensation for 'Acts of God' will be reviewed by the Owner. It is the Contractor's responsibility to secure the work site daily and failure to provide adequate provisions to do so may result in repairs to the site at the Contractor's expense. Documented 'Acts of God' such as the state issuing a 'State of Emergency' may result in the Owner's authorization to proceed repair funded by the Owner. No work shall proceed without written authorization by the Owner.

3.13 SUBMITTAL PROCEDURES

- A. DESCRIPTION
 1. This Specification Section covers the preparation and submission of all work plans, drawings, samples, manufacturer's literature and brochures, installation instructions, and operation and maintenance manuals as specified herein and in the various sections of these Specifications.



2. A Submittal Schedule shall be submitted for approval within five (5) calendar days after receipt of Notice to Proceed.

3.14 DRAWINGS

- A. The term "drawings" as used herein includes 'Shop Drawings' as required for fabrication, erection and installation, layout, and setting of proposed improvements; lists or schedules of materials and catalogues and brochures; performance and test data; and all other drawings and descriptive data pertaining to materials and methods of construction as may be required to show that the materials, equipment, or systems and the positions thereof conform to the requirements of the Contract Documents.
- B. Where specified and if so directed by the Owner's Representative provide shop drawings that are accompanied by design computations.
- C. Sheet sizes of drawings shall not exceed 24 in. by 36 in. The title block on all drawings shall bear the name of the Owner, the name of the project, and the project location.
- D. The Contractor's drawings shall be submitted electronically in PDF format to the Owner's Representative for review and approval.
- E. The Contractor shall maintain a complete set of construction drawings at the jobsite, clearly marked to reflect as-built conditions. Upon completion of the work, the Contractor shall submit these Record Drawings to the Owner's Representative.
- F. The Owner's Representative will review drawings and schedules only for conformance with the design of the Project and for compliance with the Contract Documents and Contract Drawings. The Contractor shall make any and all updates and corrections required by the Owner's Representative
- G. Drawings shall be reviewed and returned within ten (10) working days of receipt of drawings at jobsite. Drawings and all supporting data, catalogs, or similar information shall be prepared by the Contractor or his suppliers and subcontractors but shall be submitted as instruments of the Contractor.
- H. The Owner's Representative review of drawings will be of a general nature and shall not relieve the Contractor from responsibility for errors and omissions of any sort, for deviations from Drawings or Specifications, or for conflict with the work of others that may result from such deviations. The Owner's Representative review of drawings will not relieve the Contractor of responsibility to complete the work in accordance with the requirements of the Contract Documents.
- I. After Notice of Award, the Contractor shall submit a Submittal Schedule to the Owner's Representative. The Contractor's schedule shall be brought up to date from time to time to show the latest changes, omissions, and additions. The Schedule will be based on the Contractor's Construction Schedule and will show when the Contractor will submit the drawings and when he/she expects them to be returned so that construction activities shown on the Construction Schedule are not interrupted. There will be a minimum of three weeks between these two



activities. Specific methods and routines for handling drawing reviews shall be established in advance within the general framework of the Contract Documents.

- J. Work for which the Contractor's submittals are required shall not be started until the submittals have been reviewed and accepted in writing by the Owner or Landscape Architect. Owner or Landscape Architect. Owner or Landscape Architect. Owner's Representative. Any revision by the Contractor of a previously accepted submittal must be accepted in writing by the Owner's Representative before implementation.

3.15 SAMPLES

- A. The Contractor shall, at his or her expense, furnish the Owner's Representative with samples of the various materials as specified in these Specification and Drawings. Samples shall be delivered to the office of the Owner's Representative at the Contractor's expense.

3.16 PRODUCT DATA

- A. The Contractor shall submit to the Owner's Representative all required Material Safety Data Sheets (MSDS) and all Product Data Sheets and any other relevant product information for all items identified in the Technical Specifications and Drawings. All data shall be furnished by the Contractor in accordance with the approved schedule.

B. SUBMITTAL LOG

- 1. Contractor to provided the following information:
 - a. An I.D. number for each item
 - b. Specification Section, Paragraph Number and Line Item Number (ie. 321313 / 1.3 / A)
 - c. Item Name
 - d. Description of the Item
 - e. Date Submitted
 - f. Status: Approved / Approved As Noted / Rejected
 - g. Sub-Contractor (If any) providing the material
 - h. Comments

3.17 QUALITY CONTROL DESCRIPTION

- A. This Section provides the requirements for Contract quality control (QC) pertaining to the Work, including:
 - 1. QC of products and workmanship;
 - 2. Manufacturer's instructions; and
 - 3. Manufacturer's certificates and field services.



3.18 WORKMANSHIP

- A. The Contractor shall comply with industry standards of the region, except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.
- B. The Contractor shall provide suitably-qualified personnel to produce work of specified quality.
- C. The Contractor shall secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.
- D. The Contractor shall provide materials to match approved samples.

3.19 MANUFACTURER'S INSTRUCTIONS

- A. The Contractor shall require compliance with instructions in full detail, including each step in sequence. Should instructions conflict with the Contract Documents, the Contractor shall request clarification from the Owner's Representative before proceeding.

3.20 MANUFACTURER'S CERTIFICATES

- A. When required in individual Specifications sections, the Contractor shall submit manufacturer's certificates, in duplicate, certifying that products meet or exceed specified requirements.

3.21 TESTING LABORATORY SERVICES (NIC)

- A. Not Utilized in this Contract
- B. (Modify as Required)

3.22 MANUFACTURER'S FIELD SERVICES

- A. When required by the manufacturer or Owner's Representative, the Contractor shall have the manufacturer provide a qualified representative to observe field conditions, conditions of surfaces and installation, and quality of workmanship as applicable and to make written report of observations and recommendations to the Owner's Representative

3.23 AUTHORITY OF OWNER'S REPRESENTATIVE

- A. The Owner's Representative will decide all questions that may arise as to the quality and acceptability of materials furnished. All questions that may arise as to the interpretation of the Contract Drawing and Specifications shall be determined by the Owner's Representative.
- B. The Owner and Owner's Representative shall not be responsible for the Contractor's means, methods, techniques, sequences, or procedures of construction or the safety precautions and



programs incident thereto, and the Owner's Representative will not be responsible for the Contractor's failure to perform the work in accordance with the Contract Documents.

- C. The Owner's Representative will not be responsible for the acts or omissions of the Contractor or any subcontractors, of the agents or employees of any Contractor or subcontractor, or of any other persons at the site or otherwise performing any of the work.

3.24 COORDINATION OF DRAWINGS AND SPECIFICATIONS

- A. The Contractor shall take no advantage of any apparent error or omission in the Contract Drawings or Specifications. In the event the Contractor discovers such a discrepancy, error or omission, he shall immediately notify the Owner's Representative. After review and consultation with the Owner's Representative the Owner's Representative will issue clarifications, provide interpretations and make such corrections as may be deemed necessary for the Contractor to proceed with fulfilling the intent of the Contract Drawings and Specifications.
- B. When general reference is made on the Contract Drawings or within the Specifications to any cited Standard Specifications, it shall refer to the current edition of such Specifications or the latest revision thereof or interim Specifications adopted and in effect on the date of Effective Date of Agreement. In the event of a conflict between the Contract Drawings and the specifications, the Owner's Representative shall be notified to provide a clarification to the Contractor.

3.25 COOPERATION WITH UTILITIES

- A. The Contractor will notify all utility companies, all pipeline owners, or other parties affected and endeavor to have all necessary adjustments of the public or private utility fixtures, pipelines, and other appurtenances within or adjacent to the limits of construction made as soon as practical.
- B. Water lines, gas lines, wire lines, service connections, water and gas meter boxes, water and gas valve boxes, light standards, cableways, signals, and all other utility appurtenances within the limits of the proposed construction which are to be crossed, relocated or adjusted are to be moved by the Contractor or its designated agents, except as otherwise noted on the Contract Drawings. In the case of utility lines, the Contractor shall coordinate with the respective utilities for their removal and relocation.
- C. Attention is directed to the possible existence of underground facilities not known to the Owner's Representative or in a location different from that which is shown on the Contract Drawings. The Contractor shall take steps to ascertain the exact location of all underground facilities prior to doing work that may damage such facilities or interfere with their service.

3.26 INDEPENDENT TESTING AND INSPECTION (NIC)

- A. Not Applicable under this Contract



3.27 REQUIREMENTS

- A. The requirements for sampling and testing or inspection are specified in the Specifications and Drawings. The Contractor shall maintain a complete and up-to-date file of all quality control documentation at the jobsite.

3.28 MATERIAL AND EQUIPMENT

A. DESCRIPTION

- 1. This Specification Section includes the requirements for the transportation, handling, storage, and protection of materials and equipment as specified herein and in the various Sections of these Specifications. This Section also addresses the procedure for Contractor-proposed product substitutions.

3.29 MANUFACTURER REQUIREMENTS

- A. In general, the Contractor shall receive, handle, and store materials and equipment in accordance with manufacturer's recommendations and in a manner which will protect such items from damage or deterioration.
- B. GENERAL
- C. Products include the material, equipment, and systems used on this Project. Comply with the Specifications, Drawings and referenced standards as minimum requirements.

3.30 TRANSPORTATION AND HANDLING

- A. The Contractor shall receive, handle, and store materials and equipment supplied by him/her in a manner that will protect such items from damage or deterioration in accordance with procedures provided by product manufacturers and the Owner.
- B. Promptly inspect the shipments to assure that the products comply with requirements, the quantities are correct, and the products are undamaged.

3.31 STORAGE AND PROTECTION

- A. Materials and equipment shall be stored off the ground on blocking or pallets and shall be covered for protection from vandalism and weather damage.
- B. Materials and equipment shall be stored, tested, and cleaned prior to use, in accordance with the Specification and all specific manufacturers' requirements. Damaged or nonconforming items shall be removed immediately to a separated storage area for expeditious removal from site.
- C. The Contractor shall provide a secure outside storage area in the vicinity of the site.



3.32 SUBSTITUTIONS

- A. Substitutions will be considered only when a product becomes unavailable due to no fault of the Contractor or when deemed appropriate by the Owner's Representative
- B. Document each request with complete data substantiating the compliance of the proposed substitution with the Contract Documents.
- C. The requested substitution proposed constitutes a representation that the Contractor:
 - 1. Has investigated the proposed product and determined that it meets or exceeds, in all respects, the specified product.
 - 2. Will provide the same warranty for substitution as for the specified product.
 - 3. Will coordinate installation and make other changes which may be required for the Work to be complete in all respects.
 - 4. Waives claims for additional costs which may subsequently become apparent.
- D. Substitutions will be considered when they are indicated or implied on shop drawings or product data submittals without separate written request, or when acceptance will require substantial revision of the Contract Documents.
- E. The Owner's Representative will determine acceptability of the proposed substitution, and will notify the Contractor of acceptance or rejection in writing within a reasonable time. Only one request for the substitution will be considered for each product. When substitution is not accepted, the Contractor shall provide the specified product.

3.33 REJECTED MATERIALS AND DEFECTIVE WORK

- A. Materials furnished by the Contractor and rejected by the Owner's Representative as unsuitable or not in conformity with the specifications shall forthwith be removed from the job-site and work area by the Contractor, and shall not be made use of elsewhere in the work.
- B. Any errors, defects, or omissions in the execution of work or in the materials furnished by the Contractor, even though they may have been passed or overlooked or have appeared after the completion of the work, discovered at any time before the final payment is made hereunder, shall be forthwith rectified and made good by and at the expense of the Contractor and in a manner satisfactory to the Owner or Owner's Representative.
- C. The Contractor shall reimburse the Owner for any expense, losses or damages incurred in consequence of any defect error, omission or act of the Contractor or his employees, as determined by the Owner's Representative, occurring previous to the final payment.

3.34 PROJECT CLOSEOUT

- A. DESCRIPTION
 - 1. This Section specifies administrative and procedural requirements for the project closeout including, but not limited to:



- a. Project record document (As-Built drawings) submittal. Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark whichever drawing is most capable of showing conditions fully and accurately; where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.
 - b. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover of each set. Upon completion of work, submit record drawings to the Owner's Representative.
2. Record Specifications
 - a. Maintain one complete copy of the Project Manual, including addenda. Mark these documents to show substantial variations in actual Work performed in comparison with the Specifications and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation. Note related record drawing information and Product Data. Upon completion of the Work, submit record Specifications.
3. Test Results
 - a. Not Applicable this project
4. REMOVAL OF PROTECTION
 - a. Remove temporary protection and facilities installed for protection of the Work during construction. Fencing and erosion and sediment control measures and best management practices can be removed after permanent measures have been established.

3.35 WARRANTIES

A. DESCRIPTION

1. This Section specifies general administration and procedural requirements for warranties and bonds required by the Contract Documents, including manufacturers' standard warranties on products and special warranties.
 - a. Refer to the General Conditions for terms of the Contractor's special warranty of workmanship and materials;
 - b. General closeout requirements are included in Section "Project Closeout"; and
 - c. Specific requirements for warranties for the Work and products and installations that are specified to be warranted are included in the specifications and Drawings.
2. Disclaimers and Limitations
 - a. Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

B. DEFINITIONS

1. Standard Warranties



- a. Standard product warranties are pre-printed written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner.
2. Special Warranties
 - a. Special warranties are written required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the Owner.

C. WARRANTY REQUIREMENTS

1. Related Damages and Losses
 - a. When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for corrections of warranted Work.
2. Reinstatement of Warranty
 - a. When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
3. Replacement Cost
 - a. Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner's Representative has benefited from use of the Work through a portion of its anticipated useful service life.
4. Owner's Recourse
 - a. Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights and remedies.
5. Rejection of Warranties
 - a. The Owner's Representative reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents. The Owner's Representative reserves the right to refuse to accept Work for the Project where a special warranty, certification, or similar commitment is required on such Work or part of the Work, until evidence is presented that entities required to counter sign such commitments are willing to do so.
 - b. All warranties shall be submitted to the Owner in accordance with conditions of the Contract and the Submittals.

D. WARRANTY PERIOD

1. All warranties required by the Contract documents shall commence on the date of Final Acceptance.
2. Warranty period is one (1) year from date of Final Acceptance unless otherwise specified.

END OF SECTION 010000



SECTION 015639 - TEMPORARY TREE AND PLANT PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Requirements, 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.

1.3 DEFINITIONS

- A. (DBH): Diameter breast height; diameter of a trunk as measured by the average of the smallest and largest diameters at a height **54 inches** above the ground line for trees with caliper of **8 inches** or greater as measured at a height of **12 inches** above the ground.
- B. Plant-Protection Zone: Area surrounding individual trees, shrubs, or other vegetation to be protected during construction and indicated on Drawings.
- C. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction and indicated on Drawings .
- D. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.4 PRE- CONSTRUCTION MEETINGS

- A. Pre-construction Conference: Conduct conference 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 needed to make progress and avoid delays.
 - b. Arborist's responsibilities.
 - c. Coordination of Work and equipment movement with the locations of protection zones.
 - d. Trenching by hand or with air spade within protection zones.
 - e. Field quality control and maintenance.
 - f. Coordination by Parks Department City Forester and Forestry crews.



1.5 ACTION SUBMITTALS

- A. Contractor shall arrange site visit with City Forester prior to mobilization to determine the scope of pruning by the Parks Department Forestry Division or Contractor as indicated on the drawings.

1.6 QUALITY ASSURANCE

- A. Arborist Qualifications: Licensed arborist in jurisdiction where Project is located .

1.7 FIELD CONDITIONS

- A. The following practices are prohibited within protection zones:
 - 1. Storage of construction materials, debris, or excavated material.
 - 2. Moving or parking vehicles or equipment.
 - 3. Foot traffic.
 - 4. Erection of sheds or structures.
 - 5. Impoundment of water.
 - 6. Excavation or other digging unless otherwise indicated.
 - 7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
- B. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones and organic mulch.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Backfill Soil: Stockpiled soil mixed with planting soil of suitable moisture content and granular texture for placing around tree; free of stones, roots, plants, sod, clods, clay lumps, pockets of coarse sand, concrete slurry, concrete layers or chunks, cement, plaster, building debris, and other extraneous materials harmful to plant growth.
 - 1. Mixture: Well-blended mix of two parts stockpiled soil to one part planting soil .
- B. Protection-Zone Fencing: Fencing fixed in position and meeting the following requirements:
 - 1. Plastic Protection-Zone Fencing: Plastic construction fencing constructed of high-density extruded and stretched polyethylene fabric with **2-inch** maximum opening in pattern and weighing a minimum of **0.4 lb/ft.**; remaining flexible from **minus 60 to plus 200 deg F**; inert to most chemicals and acids; minimum tensile yield strength of **2000 psi** and ultimate tensile strength of **2680 psi**; secured with plastic bands or galvanized-steel or stainless-steel wire ties; and supported by tubular or T-shape galvanized-steel posts spaced not more than **96 inches** apart.



- a. Height: 72 inches .
- b. Color: High-visibility orange, nonfading.

PART 3 - EXECUTION

3.1 PREPARATION

- A. 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.

3.2 PROTECTION ZONES

- A. Protection-Zone Fencing: Install protection-zone fencing along edges of protection zones before materials or equipment are brought on the site and construction operations begin in a manner that will prevent people from easily entering protected areas except by entrance gates. Construct fencing so as not to obstruct safe passage or visibility at vehicle intersections where fencing is located adjacent to pedestrian walkways or in close proximity to street intersections, drives, or other vehicular circulation.
- B. Protection-Zone Signage: Install protection-zone signage in visibly prominent locations in a manner approved by Owner's Representative. Install one sign on protection-zone fencing. Sign to read "Tree Protection Zone - Do not Disturb". Sign to be printed on 24"x 36" white panel with black lettering at a minimum of 3" height lettering .
- C. Maintain protection zones free of trash.
- D. Maintain protection-zone fencing in good condition as acceptable by Owner's Representative and remove when construction operations are complete and equipment has been removed from the site.
 - 1. Do not remove protection-zone fencing, even temporarily, to allow deliveries or equipment access through the protection zone.
 - 2. Temporary access is permitted subject to preapproval in writing by Owner's Representative if a root buffer effective against soil compaction is constructed as directed by Owner's Representative. Maintain root buffer so long as access is permitted.

3.3 EXCAVATION

- A. General: Excavate at edge of protection zones and for trenches indicated within protection zones according to requirements in Section 312000 "Earth Moving" unless otherwise indicated.
- B. Trenching within Protection Zones: Where utility trenches are required within protection zones, excavate under or around tree roots by hand or with air spade, or tunnel under the roots as directed by Owner's Representative. Do not cut main lateral tree roots or taproots larger than 2" without direction from Owner's Representative; cut only smaller roots that interfere with



installation of utilities. 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. If encountering large, main lateral roots, expose roots beyond excavation limits as required to bend and redirect them without breaking. If encountered immediately adjacent to location of new construction and redirection is not practical, cut roots approximately **3 inches** back from new construction and as required for root pruning.
- D. Do not allow exposed roots to dry out before placing permanent backfill. Provide temporary earth cover and wrap with dampened burlap. Water and maintain in a moist condition. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil or as directed by Owner's Representative.

3.4 ROOT PRUNING

- A. Prune tree roots that are affected by temporary and permanent construction. Prune roots as follows:
 - 1. Cut roots manually by digging a trench and cutting exposed roots with sharp pruning instruments; do not break, tear, chop, or slant the cuts. Do not use a backhoe or other equipment that rips, tears, or pulls roots.
 - 2. No roots larger than two (2) inches in diameter may be cut without permission of the City Forester. Cuts must be made with hand-pruner, handsaws, or chainsaws.
 - 3. Temporarily support and protect roots from damage until they are permanently redirected and covered with soil.
 - 4. Cover exposed roots with burlap and water regularly.
 - 5. Backfill as soon as possible according to requirements in Section 312000 "Earth Moving."
- B. Root Pruning within Protection Zone: Clear and excavate by hand or with air spade to the depth of the required excavation to minimize damage to tree root systems. If excavating by hand, use narrow-tine spading forks to comb soil to expose roots. Cleanly cut roots as close to excavation as possible.

3.5 REGRADING

- A. Lowering Grade: Where new finish grade is indicated below existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.
- B. Lowering Grade within Protection Zone: Where new finish grade is indicated below existing grade around trees, slope grade away from trees as recommended by Owner's Representative unless otherwise indicated.
 - 1. Root Pruning: Prune tree roots exposed by lowering the grade. Do not cut main lateral roots or taproots; cut only smaller roots. Cut roots as required for root pruning.



- C. Minor Fill within Protection Zone: Where existing grade is **2 inches** or less below elevation of finish grade, fill with backfill soil. Place backfill soil in a single uncompacted layer and hand grade to required finish elevations.

3.6 REPAIR AND REPLACEMENT

- A. General: Repair or replace trees, shrubs, and other vegetation indicated to remain or to be relocated that are damaged by construction operations, in a manner approved by Owner's Representative.
 - 1. Submit details of proposed pruning and repairs.
 - 2. Perform repairs of damaged trunks, branches, and roots within 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 determined by Owner's Representative. Replacement trees to be equal to the total diameter of mature tree by multiple equal diameter specimens.
- B. Trees: Remove and replace trees tha damaged during construction operations that Owner's Representative determines are incapable of restoring to normal growth pattern.
 - 1. Small Trees: Provide new trees of same size and species as those being replaced for each tree that measures 4" or smaller in caliper size.
 - 2. Large Trees: Provide multiple trees of 2-1/2" - 3" caliper size to equal total diameter of tree being replaced. .
 - a. Species: As determined by Owner's Representative.
 - 3. Plant and maintain new trees as specified in Section 329300 "Plants."
- C. Soil Aeration: Where directed by Owner's Representative, aerate surface soil compacted during construction. Aerate to loosen soil **10 feet** beyond drip line and no closer than 36" to tree trunk with air spade.

3.7 DISPOSAL OF SURPLUS AND WASTE MATERIALS

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

END OF SECTION 015639



SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:

- 1. Demolition and removal of selected site elements.

- B. Related Requirements:

- 1. Section 015639 "Temporary Tree and Plant Protection" for temporary protection of existing trees and plants that are affected by selective demolition.
 - 2. Section 017300 "Execution" for cutting and patching procedures.

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be salvaged or reinstalled.
- B. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage, prepare for reuse, and reinstall where indicated.
- C. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.
- D. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

1.4 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.
- B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
 - 1. Carefully salvage in a manner to prevent damage and promptly return to Owner.



1.5 PRE-CONSTRUCTION MEETINGS

- A. Predemolition Conference: Conduct conference at Project site .
 - 1. Inspect and discuss condition of construction to be selectively demolished.
 - 2. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 - 3. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
 - 4. Review areas where existing construction is to remain and requires protection.

1.6 INFORMATIONAL SUBMITTALS

- A. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property , for environmental protection , for dust control and , for noise control. Indicate proposed locations and construction of barriers.
- B. Schedule of Selective Demolition Activities: Indicate the following:
 - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site uses are uninterrupted.
 - 2. Interruption of utility services. Indicate how long utility services will be interrupted.
 - 3. Coordination for shutoff, capping, and continuation of utility services.
 - 4. Coordination of Owner's continuing use of portions of existing site and of Owner's partial use of completed Work.
- C. Predemolition Photographs or Video: Show existing conditions of adjoining construction, including finish surfaces, that might be misconstrued as damage caused by demolition operations. Comply with Section 013233 "Photographic Documentation." Submit before Work begins.
- D. Warranties: Documentation indicating that existing warranties are still in effect after completion of selective demolition.

1.7 FIELD CONDITIONS

- A. Owner will occupy portions of the site immediately adjacent to selective demolition area. Conduct selective demolition so Owner's use will not be disrupted.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
 - 1. Before selective demolition, Owner will remove the items specifically indicated on the drawings
- C. Notify Owner's Representative of discrepancies between existing conditions and Drawings before proceeding with selective demolition.



- D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
 - 1. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.
- E. Storage or sale of removed items or materials on-site is not permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1.8 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials and using approved contractors so as not to void existing warranties. Notify warrantor before proceeding.
- B. Notify Owner on completion of selective demolition, and obtain documentation verifying that existing system has been inspected and warranty remains in effect. Submit documentation at Project closeout.

1.9 COORDINATION

- A. Arrange selective demolition schedule so as not to interfere with Owner's use.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
 - 1. Contact Dig Safe-Provide Dig Safe number to Owner prior to mobilization.



- B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.
 - 1. Meet with Owner's Representative to identify local utilities prior to mobilization.
- C. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs. measured drawings .
 - 1. Comply with requirements specified in Section 013233 "Photographic Documentation."
 - 2. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations. Notify Owner of damaged items.
 - 3. Before selective demolition or removal of existing elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

3.2 PROTECTION

- A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 - 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of the site.
 - 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
 - 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
 - 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
 - 5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."
- B. Remove temporary barricades and protections where hazards no longer exist.

3.3 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
 - 1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
 - 2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.



3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
 4. Maintain adequate ventilation when using cutting torches.
 5. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 6. Dispose of demolished items and materials promptly and legally off site.
- B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- C. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Owner's Representative, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.

3.4 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- A. Concrete: Demolish in small sections. Using power-driven saw, cut concrete to a depth of at least **3/4 inch** at junctures with construction to remain. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete.
- B. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals using power-driven saw, and then remove concrete between saw cuts.
- C. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, and then remove masonry between saw cuts.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove demolition waste materials from Project site and dispose of legally.
1. Do not allow demolished materials to accumulate on-site.
 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- B. Burning: Do not burn demolished materials.

3.6 CLEANING

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



END OF SECTION 024119



SECTION 044113 - GRANITE

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Reclaimed granite components, including the following:

- 1. Stair treads.

1.2 RELATED SECTIONS

- A. Section 312000 – Earth Moving
- B. Section 312213 – Rough Grading
- C. Section 321413 – Precast Concrete Unit Paving
- D. Section 323253 – Stone Retaining Walls

1.3 QUALITY ASSURANCE

- A. Mock-Up: Install a mock-up using acceptable products and manufacturer approved installation methods.
 - 1. Remove and legally dispose of mock-up when no longer required.
 - 2. Incorporate mock-up into final construction upon Landscape Architect's approval.
- B. Obtain Owners's acceptance layout/pattern, and workmanship standard.
- C. Any piece of granite showing significant flaws upon receipt shall be referred to the design professional for determination as to whether it shall be rejected, patched, or redressed for use.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Store granite on timber or platforms at least 3 inches (76 mm) above the ground.
- B. Take care to prevent staining during storage.
- C. Prevent excessive mud, fluid concrete, or other deleterious materials from coming in contact with and affixing to stone materials.
- D. If storage is to be for a prolonged period, place polyethylene or other suitable plastic film between any wood and finished surfaces, and use also as an overall protective covering.



- E. Do not use salt for melting of ice formed on pieces, or for any purpose involving its contact with the granite.

PART 2 - PRODUCTS

2.1 GRANITE

- A. Granite shall be supplied by Providence Parks Department and is located in Roger Williams Park.
- B. Contractor is responsible for obtaining the stone from the Parks Department and delivering it to the project site.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Verify substrate is level, smooth, and capable of supporting stone imposed loads.
- C. Verify grades, contours and elevations of substrate are correct.
- D. If substrate preparation is the responsibility of another installer, notify Owner's Representative of unsatisfactory preparation before proceeding.

3.2 INSTALLATION

- A. Install in accordance with drawings and using skilled mechanics capable of proper handling of the setting of the stone and able to field cut where necessary with sharp and true edges.
- B. Set stone with joints uniform in appearance and stone edges and faces aligned to tolerances indicated.
- C. Clean surfaces that are dirty or stained. Scrub with fiber brushes, and then rinse with clear water.

3.3 PROTECTION

- A. Protect installed products until completion of project.



3.4 CLEANING

- A. Granite shall be shop cleaned at the time of delivery of any residual concrete or other materials adhered to the stone that would be visible after construction or would impair the setting and leveling of the stone.
- B. After installation and pointing or caulking are completed, carefully clean the granite, removing all dirt, excess mortar, weld splatter, stains, and/or other site incident defacements.
- C. Stainless steel wire brushes or wool may be used, but the use of other wire brushes or of acid or other solutions which may cause discoloration is expressly prohibited.

END OF SECTION 044113



SECTION 312000 - EARTH MOVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Requirements apply to this Section.

1.2 SUMMARY

- A. Section Includes:

1. Excavating and filling for rough grading the Site.
2. Preparing subgrades for slabs-on-grade, walks, pavements, planting, and turf.
3. Excavating and backfilling for buildings and structures.
4. Drainage course for concrete slabs-on-grade.
5. Subbase course for concrete pavements.
6. Subbase course and base course for asphalt paving.

- B. Related Requirements:

1. Section 312213 - Rough Grading
2. Section 323253 - Stone Retaining Walls
3. Section 329119 - Landscape Grading
4. Section 329200 "Turf and Grasses" for finish grading in turf and grass areas, including preparing and placing planting soil for turf areas.

1.3 DEFINITIONS

- A. Backfill: Soil material or controlled low-strength material used to fill an excavation.
 1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
 2. Final Backfill: Backfill placed over initial backfill to fill a trench.
- B. Base Course: Aggregate layer placed between the subbase course and hot-mix asphalt paving.
- C. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.
- D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.
- E. Drainage Course: Aggregate layer supporting the slab-on-grade that also minimizes upward capillary flow of pore water.



- F. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.
 - 1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Architect. Authorized additional excavation and replacement material will be paid for according to Contract provisions for unit prices .
 - 2. Bulk Excavation: Excavation more than 10 feet in width and more than 30 feet in length.
 - 3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Architect. Unauthorized excavation, as well as remedial work directed by Architect, shall be without additional compensation.
- G. Fill: Soil materials used to raise existing grades.
- H. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material 3/4 cu. yd. or more in volume that exceed a standard penetration resistance of 100 blows/2 inches when tested by a geotechnical testing agency, according to ASTM D1586.
- I. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- J. Subbase Course: Aggregate layer placed between the subgrade and base course for hot-mix asphalt pavement, or aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.
- K. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.
- L. Utilities: On-site underground pipes, conduits, ducts, and cables as well as underground services within buildings.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct preexcavation conference at Project site .
 - 1. Review methods and procedures related to earthmoving, including, but not limited to, the following:
 - a. Personnel and equipment needed to make progress and avoid delays.
 - b. Coordination of Work with utility locator service.
 - c. Coordination of Work and equipment movement with the locations of tree- and plant-protection zones.
 - d. Extent of excavation by hand or with air spade.
 - e. Field quality control.

1.5 FIELD CONDITIONS

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



1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- B. Utility Locator Service: Notify utility locator service "Dig Safe System" for area where Project is located before beginning earth-moving operations.
- C. Do not commence earth-moving operations until temporary site fencing and erosion- and sedimentation-control measures specified in 312500 - Erosion & Sedimentation Control are in place.
- D. Do not commence earth-moving operations until plant-protection measures specified in Section 015639 "Temporary Tree and Plant Protection" are in place.
- E. The following practices are prohibited within protection zones:
1. Storage of construction materials, debris, or excavated material.
 2. Parking vehicles or equipment.
 3. Foot traffic.
 4. Erection of sheds or structures.
 5. Impoundment of water.
 6. Excavation or other digging unless otherwise indicated.
 7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
- F. Do not direct vehicle or equipment exhaust towards protection zones.
- G. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- B. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; with at least 95 percent passing a 1-1/2-inch sieve and not more than 8 percent passing a No. 200 sieve.

2.2 GEOTEXTILES

- A. Subsurface Drainage Geotextile: Nonwoven needle-punched geotextile, manufactured for subsurface drainage applications, made from polyolefins or polyesters; with elongation greater



than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:

1. Survivability: Class 2; AASHTO M 288.
2. Survivability: As follows:
 - a. Grab Tensile Strength: 157 lbf; ASTM D4632.
 - b. Sewn Seam Strength: 142 lbf; ASTM D4632.
 - c. Tear Strength: 56 lbf; ASTM D4533.
 - d. Puncture Strength: 56 lbf; ASTM D4833.
3. Apparent Opening Size: No. 40 sieve, maximum; ASTM D4751.
4. Permittivity: 0.5 per second, minimum; ASTM D4491.
5. UV Stability: 50 percent after 500 hours' exposure; ASTM D4355.

2.3 ACCESSORIES

- A. Detectable Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep; colored as follows:
 1. Red: Electric.
 2. Yellow: Gas, oil, steam, and dangerous materials.
 3. Orange: Telephone and other communications.
 4. Blue: Water systems.
 5. Green: Sewer systems.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth-moving operations.
- B. Protect and maintain erosion and sedimentation controls during earth-moving operations.
- C. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

3.2 EXPLOSIVES

- A. Explosives: Do not use explosives.



3.3 EXCAVATION, GENERAL

- A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.
 - 1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.
- B. Classified Excavation: Excavate to subgrade elevations. Material to be excavated will be classified as earth and rock. Do not excavate rock until it has been classified and cross sectioned by Architect. The Contract Sum will be adjusted for rock excavation according to unit prices included in the Contract Documents. Changes in the Contract Time may be authorized for rock excavation.
 - 1. Earth excavation includes excavating pavements and obstructions visible on surface; underground structures, utilities, and other items indicated to be removed; and soil, boulders, and other materials not classified as rock or unauthorized excavation.

3.4 EXCAVATION FOR WALKS AND PAVEMENTS

- A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

3.5 SUBGRADE INSPECTION

- A. Notify Architect when excavations have reached required subgrade.
- B. If Architect determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
- C. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
- D. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Architect, without additional compensation.

3.6 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by Architect.
 - 1. Fill unauthorized excavations under other construction, pipe, or conduit as directed by Architect.



3.7 STORAGE OF SOIL MATERIALS

- A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 - 1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.8 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. Removing trash and debris.
- B. Place backfill on subgrades free of mud, frost, snow, or ice.

3.9 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.
- C. Place soil fill on subgrades free of mud, frost, snow, or ice.

3.10 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.

3.11 SUBBASE AND BASE COURSES UNDER PAVEMENTS AND WALKS

- A. Place base course on subgrades free of mud, frost, snow, or ice.
- B. On prepared subgrade, place base course under pavements and walks as follows:
 - 1. Install separation geotextile on prepared subgrade according to manufacturer's written instructions, overlapping sides and ends.



2. Place base course material under hot-mix asphalt pavement.
3. Shape base course to required crown elevations and cross-slope grades.
4. Place base course 6 inches or less in compacted thickness in a single layer.
5. Place 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.

3.12 PROTECTION

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

3.13 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Transport surplus satisfactory soil to designated storage areas on Owner's property. Stockpile or spread soil as directed by Architect.
 1. Remove waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION 312000



SECTION 312213 - ROUGH GRADING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Excavating topsoil.
2. Excavating subsoil.
3. Cutting, grading, filling, rough contouring, compacting, site for stonedust & chip-seal paths and concrete pads .

B. Related Sections:

1. Section 31200 - Earth Moving
2. Section 329119 - Landscape Grading: Finish grading with topsoil to contours.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. Topsoil Fill Type S4 :

1. Basis of Measurement: By Cubic Yard .
2. Basis of Payment: Includes excavating existing soil, supplying soil materials, stockpiling, scarifying substrate surface, placing where required, and compacting.

B. Subsoil Fill Type S2 :

1. Basis of Measurement: By the cubic yard.
2. Basis of Payment: Includes excavating existing subsoil, supplying subsoil materials, stockpiling, scarifying substrate surface, placing where required, and compacting.

1.3 REFERENCES

A. American Association of State Highway and Transportation Officials:

1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.

B. ASTM International:

1. ASTM C136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
2. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³).
3. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³).



1.4 SUBMITTALS

- A. Materials Source: Submit name of imported materials suppliers.

1.5 CLOSEOUT SUBMITTALS

- A. Section 01000 - General Requirements: Requirements for submittals.
- B. Project Record Documents: Accurately record actual locations of utilities remaining by horizontal dimensions, elevations or inverts, and slope gradients.

1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with RIDOT Standard Specifications for Road and Bridge Construction, latest edition.
- B. Maintain one copy of each document on site

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Topsoil: Type S4 as specified in Section 310513.
- B. Subsoil Fill: Type S2 as specified in Section 310513.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify survey bench mark and intended elevations for the Work are as indicated on Drawings.

3.2 PREPARATION

- A. Call Local Utility Line Information service at 1-888-DIG-SAFE not less than three (3) working days before performing Work.
 - 1. Request underground utilities to be located and marked within and surrounding construction areas.
- B. Identify required lines, levels, contours, and datum.
- C. Protect utilities indicated to remain from damage.



- D. Protect plant life, lawns, structures, and other features remaining as portion of final landscaping.
- E. Protect bench marks, survey control point, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

3.3 TOPSOIL EXCAVATION

- A. Excavate topsoil from areas to be further excavated, relandscaped, or regraded, in marked areas, without mixing with foreign materials for use in finish grading.
- B. Do not excavate wet topsoil.
- C. Stockpile in area designated on site to depth not exceeding 8 feet and protect from erosion. Stockpile material on impervious material and cover over with same material, until disposal.
- D. Remove excess topsoil not intended for reuse, from site.

3.4 SUBSOIL EXCAVATION

- A. Excavate subsoil from areas to be further excavated, relandscaped, or regraded. marked areas.
- B. Do not excavate wet subsoil .
- C. When excavating through roots, perform Work by hand and do not remove any roots over 2" in diameter.
- D. Stockpile excavated material in area designated on site in accordance with Section 310513 .
- E. Benching Slopes: Horizontally bench existing slopes greater than 1: 4 to key placed fill material to slope to provide firm bearing.
- F. Stability: Replace damaged or displaced subsoil as specified for fill.

3.5 FILLING

- A. Fill areas to contours and elevations with unfrozen materials.
- B. Place material in continuous layers as follows:
 - 1. Subsoil Fill: Maximum 8 inches compacted depth.
 - 2. Granular Fill: Maximum 6 inches compacted depth.
- C. Maintain optimum moisture content of fill materials to attain required compaction density.
- D. Make grade changes gradual. Blend slope into level areas.
- E. Repair or replace items indicated to remain damaged by excavation or filling.



- F. Install Work in accordance with RIDOT Standard Specifications for Road and Bridge Construction, latest edition.

3.6 TOLERANCES

- A. Section 014000 - Quality Requirements: Tolerances.
- B. Top Surface of Subgrade: Plus or minus 1/10 foot from required elevation.

3.7 SCHEDULES

- A. Subsoil Fill:
 - 1. Fill Type S2 : To subgrade elevation. 6" thick.
 - 2. Compact uniformly to minimum 95% percent of maximum density.
- B. Topsoil Fill:
 - 1. Fill Type S4 : To subgrade elevation. 6" thick.
 - 2. Compact uniformly to minimum 90 % percent of maximum density.

END OF SECTION 312213



SECTION 312500 - EROSION AND SEDIMENTATION CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

- A. Furnish all labor, materials, equipment and incidentals required and perform all installation, maintenance, removal and area cleanup related to erosion and sedimentation control work required to meet Federal, State, and local permit requirements and as shown on the Drawings and as specified herein. The work shall include, but not necessarily be limited to; installation of temporary access ways and staging areas, compost filter socks, catch basin sediment filters (silt sack), sediment removal and disposal, device maintenance, removal of temporary devices, and final cleanup.

1.2 REFERENCES

- A. EPA document titled: "Stormwater Management for Construction Activities — Developing Pollution Prevention Plans and Best Management Practices" document number EPA 832-R-92-005, dated 1992, or most recent edition. State, County Conservation Districts or local Conservation Commission standards can be substituted for the EPA standard if the State, County or Local Conservation Commission standards is equal to, or more detailed than, the EPA standard.
- B. State of Rhode Island Department of Transportation Standard Specifications for Road and Bridge Construction, Current Edition with latest addenda.

1.3 SUBMITTALS

- A. Submit, in accordance with Division 01 10 00 – General Requirements: Submittal Procedures ten (10) days after award of Contract, technical product literature for all commercial products to be used for erosion and sedimentation control.
- B. If a NPDES General Permit is required, Contractor shall, prior to the start of construction:
- C. Prepare and submit the EPA NPDES Notice of Intent to Discharge to the applicable EPA office in accordance with EPA regulations. Submit one copy of the permit to Owner's Representative for informational purposes only.
 - 1. Prepare and submit a Stormwater Pollution Prevention Plan (SWPPP) in accordance with the U.S. Environmental Protection Agency (EPA) National Pollution Discharge Elimination System (NPDES) General Permit for this work. Submit one copy of the permit to Owner's Representative for informational purposes only.



1.4 QUALITY ASSURANCE

- A. Be responsible for the timely installation and maintenance of all erosion and sedimentation control devices necessary to prevent the movement of sediment from the construction site to off-site areas or into the stream system via surface runoff or underground drainage systems. Measures in addition to those shown on the Drawings necessary to prevent the movement of sediment off site shall be installed, maintained, removed, and cleaned up at the expense of the Contractor. No additional charges to the Owner will be considered.
- B. Where Contractor's efforts to control erosion and sediment have been demonstrated to be ineffective or potentially ineffective in the opinion of the Owner's Representative, the Owner's Representative may order that additional measures be implemented and constructed at no additional cost to the Owner.
- C. Perform Work in accordance with requirements of Section 310513, Section 312213.
- D. Perform Work according to Municipality of Public Works standards.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. When work is performed outside of normal seeding window straw mulch shall be utilized on all newly graded areas to protect areas against washouts and erosion. Straw mulch shall be comprised of threshed straw of oats, wheat, barley, or rye that is free from noxious weeds, mold or other objectionable material. The straw mulch shall contain at least 50 percent by weight of material to be 10-in or longer. Straw shall be in an air-dry condition and suitable for placement with blower equipment.
- B. If newly seeded areas contain slopes greater than 4:1 install Jute Mesh/Netting for erosion control. Jute Mesh should conform to following specifications:
 - 1. Open Area: 70 - 75%
 - 2. Mesh size: 11mm x 18mm
 - 3. Water Absorption: >450% of fabric weight
 - 4. Thickness: 0.25 inch (6 mm)
 - 5. Recommended shear stress: 0.45 lbs./sq.ft. (22 N/sq.m)
 - 6. Recommended flow capacity: 6 fps (1.8 m/s)
- C. Compost Filter Sock
 - 1. Machine produced.
 - 2. Straw filled tubes of compacted straw of rice, wheat or barley.
 - 3. Compost filter sock to be certified as weed free.
 - 4. Netting for tubes to be seamless, high density polyethylene with ultra violet inhibitors.
 - 5. Roll length to be 10.0 feet to 25.0 feet.
 - 6. Weight per linear foot, 12-inch: 2.5 lbs. minimum 9-inch: 1.5 lbs. minimum



7. Stakes shall be wooden, 1 1/8-inch x 1 1/8-inch x 2.5 feet long, with lower ends tapered to facilitate driving into compacted soil. Rebar may be substituted for wooden stakes

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Sediment control devices shall be installed according to manufacturer's recommendations and as directed by the Owner's Representative.
- B. Staging areas and stabilized construction entrance shall be surfaced with a minimum depth of 6 inches of crushed stone (if so directed by the Owner's Representative). Stabilized construction entrances shall be installed as shown on the Plans.

3.2 MAINTENANCE AND INSPECTION

- A. Inspections
- B. Make a visual inspection of all erosion and sedimentation control devices once per week and promptly after every rainstorm. If such inspection reveals that additional measures are needed to prevent movement of sediment to offsite areas, promptly install additional devices as needed. Sediment controls in need of maintenance shall be repaired promptly.
- C. Device Maintenance
- D. Sediment Filters
 1. Catch basin sediment control devices shall be cleaned of sediment in a manner as recommended by the manufacturer and as directed by the Owner's Representative. Remove sediment from filter bag when saturated with sediment as directed by the Owner's Representative.

3.3 REMOVAL AND FINAL CLEANUP

- A. Once the site has been permanently stabilized against erosion, remove all sediment control devices and sediment. Dispose sediment and all waste materials in a proper manner.
- B. When sediment accumulation in sedimentation structures has reached a point one-third depth of sediment structure or device, remove and dispose of sediment.
- C. Do not damage structure or device during cleaning operations.
- D. Clean channels when depth of sediment reaches approximately one half channel depth.
- E. Clean channels when depth of sediment reaches approximately one half channel depth.



END OF SECTION 312500



SECTION 313716.13 - RUBBLE-STONE RIPRAP

PART 1 - GENERAL

1.1 SUMMARY

- A. Work includes furnishing and installing rubble-stone riprap on a slope to create a safe, climbable, slope stabilization treatment. Stone shall be installed to the lines and grades designated on the project's final construction drawings or as directed by the Landscape Architect.

1.2 PREINSTALLATION MEETINGS

- A. Convene minimum one week prior to commencing Work of this Section.

1.3 ACTION SUBMITTALS

- A. Work Samples: Submit photos of at least three (3) similar projects completed by the installer that will be working on this project.
- B. Product Data: Submit manufacturer information for liquid soil stabilizer
- C. Provide samples of the following:
- D. Stone: consisting of a minimum of 5 stones representative of the size and color gradation
- E. Processed gravel: 1 gallon container
- F. Stonedust: 1 gallon container

1.4 QUALITY ASSURANCE

- A. Furnish each aggregate material from single source throughout Work of this Section.

1.5 QUALIFICATIONS

- A. Contractor: Company specializing in manufacturing products specified in this Section with minimum of five years' experience.



PART 2 - PRODUCTS

2.1 MATERIALS

- A. Rubble Stone:
 - 1. Description:
- B. Rounded to slightly angular natural, minimally processed through crushing
- C. Solid and nonfriable.
 - 1. Type: Granite
 - 2. Size:
 - a. Minimum: 1 foot
 - b. Maximum: 2 1/2 feet

2.2 BASE MATERIAL

- A. Commonly available processed gravel aggregate, 3/4" or 1 1/2" minus is acceptable

2.3 BACKFILL AGGREGATE

- A. Commonly available processed gravel aggregate, 3/4" or 1 1/2" minus is acceptable and may vary based on joint size.
- B. Commonly available stonedust is typically suitable.

2.4 STABILIZER

- A. StaLok concentrate liquid soil stabilizer shall be applied to stonedust following manufacturer's instructions and at the specified rate

PART 3 - CONSTRUCTION

3.1 EXCAVATION

- A. Contractor shall excavate to the lines and grades shown on the project grading plans. Contractor shall take precautions to minimize over- excavation. Over- excavation shall be filled with compacted infill material, or as directed by the Landscape Architect, at the Contractor's expense.
- B. Contractor shall verify location of existing structures and utilities prior to excavation. Contractor shall ensure all surrounding structures are protected from the effects of slope excavation. Excavation support, if required, is the responsibility of the Contractor.



3.2 BASE

- A. The subgrade soil shall be compacted to 95% standard Proctor density and inspected by the Owner's Engineer prior to placement of base materials and stone.
- B. Place a non-woven geotextile fabric over substrate used to separate the subgrade from the gravel backfill

3.3 PREPARING TO BUILD

- A. The Contractor shall place rubble-stone in the location shown on the project plans.
- B. The Contractor shall place rubble-stone to the dimensions and grades shown on the project plans.

3.4 RUBBLE-STONE ON SLOPE

- A. PLACING STONE
 - 1. The underside of the stone shall be free of voids and well packed with footing material
 - 2. Stones shall be placed so they do not tip or shift when weight is applied to the top.
- B. Average Installed Thickness: As indicated on Drawings.
- C. Place stone into position and remove foreign material from surfaces.
- D. Do not place stone over frozen or spongy subgrade surfaces.

3.5 BACKFILL PLACEMENT

- A. At completion of rubble-stone slope construction, gravel backfill shall be placed and packed in joints up to the height shown in the construction drawings.
- B. At completion of gravel backfill placement, stonedust shall be placed and packed in joints up to the height shown in the construction drawings.
- C. StaLok concentrate liquid soil stabilizer shall be applied to stonedust following manufacturer's instructions and at the specified rate
- D. If final grading adjacent to the rubble-stone slope is not complete, temporary grading and drainage shall be provided to ensure water runoff is not directed at the rubble-stone slope nor allowed to collect or pond until final grading is completed.

END OF SECTION 313716.13



SECTION 321216 - ASPHALT PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Requirements apply to this Section.

1.2 SUMMARY

- A. Section Includes:

- 1. Hot-mix asphalt paving.

- B. Related Requirements:

- 1. Section 024119 "Selective Demolition" for demolition and removal of existing asphalt pavement.
 - 2. Section 312000 "Earth Moving" for subgrade preparation, fill material, separation geotextiles, unbound-aggregate subbase and base courses, and aggregate pavement shoulders.
 - 3. Section 321313 "Concrete Paving" for concrete pavement and for separate concrete curbs, gutters, and driveway aprons.
 - 4. Section 321373 "Concrete Paving Joint Sealants" for joint sealants and fillers at pavement terminations.
 - 5. Section 321400 "Unit Paving" for bituminous setting bed for pavers and for stone and precast concrete curbs.

1.3 UNIT PRICES

- A. Work of this Section is affected by square foot .

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site .

- 1. Review methods and procedures related to hot-mix asphalt paving including, but not limited to, the following:
 - a. Review proposed sources of paving materials, including capabilities and location of plant that will manufacture hot-mix asphalt.
 - b. Review requirements for protecting paving work, including restriction of traffic during installation period and for remainder of construction period.



1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include technical data and tested physical and performance properties.
 - 2. Job-Mix Designs: Certification, by authorities having jurisdiction, of approval of each job mix proposed for the Work.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For manufacturer .
- B. Material Certificates: For each paving material. Include statement that mixes containing recycled materials will perform equal to mixes produced from all new materials.
- C. Material Test Reports: For each paving material, by a qualified testing agency.

1.7 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A paving-mix manufacturer registered with and approved by authorities having jurisdiction or the DOT of state in which Project is located .
- B. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of of RIDOT Standards for Road & Bridge Construction for asphalt paving work.
 - 1. Measurement and payment provisions and safety program submittals included in standard specifications do not apply to this Section.

1.8 FIELD CONDITIONS

- A. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp, if rain is imminent or expected before time required for adequate cure, or if the following conditions are not met:
 - 1. Tack Coat: Minimum surface temperature of 60 deg F.
 - 2. Asphalt Base Course: Minimum surface temperature of 40 deg F and rising at time of placement.
 - 3. Asphalt Surface Course: Minimum surface temperature of 60 deg F at time of placement.

PART 2 - PRODUCTS

2.1 AGGREGATES

- A. General: Use materials and gradations that have performed satisfactorily in previous installations.



- B. Coarse Aggregate: ASTM D 692/D 692M, sound; angular crushed stone, crushed gravel, or cured, crushed blast-furnace slag.
- C. Fine Aggregate: ASTM D 1073 , sharp-edged natural sand or sand prepared from stone, gravel, cured blast-furnace slag, or combinations thereof.
 - 1. For hot-mix asphalt, limit natural sand to a maximum of 20 percent by weight of the total aggregate mass.
- D. Mineral Filler: ASTM D 242/D 242M , rock or slag dust, hydraulic cement, or other inert material.

2.2 ASPHALT MATERIALS

- A. Asphalt Binder: ASTM D 6373 binder designation PG 64-22 .
- B. Asphalt Cement: ASTM D 3381/D 3381M for viscosity-graded material ASTM D 946/D 946M for penetration-graded material.
- C. Cutback Prime Coat: ASTM D 2027/D 2027M, medium-curing cutback asphalt, MC-30 or MC-70 .
- D. Emulsified Asphalt Prime Coat: ASTM D 977 emulsified asphalt, or ASTM D 2397/D 2397M cationic emulsified asphalt, slow setting, diluted in water, of suitable grade and consistency for application.
- E. Tack Coat: ASTM D 977 emulsified asphalt, or ASTM D 2397/D 2397M or cationic emulsified asphalt, slow setting, diluted in water, of suitable grade and consistency for application.
- F. Fog Seal: ASTM D 977 or emulsified asphalt, or ASTM D 2397/D 2397M or cationic emulsified asphalt, slow setting, factory diluted in water, of suitable grade and consistency for application.
- G. Water: Potable.
- H. Undersealing Asphalt: ASTM D 3141/D 3141M; pumping consistency.

2.3 AUXILIARY MATERIALS

- A. Recycled Materials for Hot-Mix Asphalt Mixes: Reclaimed asphalt pavement; reclaimed, unbound-aggregate base material; and recycled tires asphalt shingles from sources and gradations that have performed satisfactorily in previous installations, equal to performance of required hot-mix asphalt paving produced from all new materials.



2.4 MIXES

- A. Hot-Mix Asphalt: Dense-graded, hot-laid, hot-mix asphalt plant mixes ; designed according to procedures in AI MS-2, "Asphalt Mix Design Methods"; and complying with the following requirements:
 - 1. Provide mixes with a history of satisfactory performance in geographical area where Project is located.
 - 2. Base Course: DG M.
 - 3. Surface Course: SMA .

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that subgrade is dry and in suitable condition to begin paving.
- B. Proceed with paving only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Protection: Provide protective materials, procedures, and worker training to prevent asphalt materials from spilling, coating, or building up on curbs, driveway aprons, manholes, and other surfaces adjacent to the Work.

3.3 REPAIRS

3.4 SURFACE PREPARATION

- A. Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving.
- B. Cutback Prime Coat: Apply uniformly over surface of compacted unbound-aggregate base course at a rate of 0.15 to 0.50 gal./sq. yd.. Apply enough material to penetrate and seal, but not flood, surface. Allow prime coat to cure.
 - 1. If prime coat is not entirely absorbed within 24 hours after application, spread sand over surface to blot excess asphalt. Use enough sand to prevent pickup under traffic. Remove loose sand by sweeping before pavement is placed and after volatiles have evaporated.
 - 2. Protect primed substrate from damage until ready to receive paving.

3.5 PLACING HOT-MIX ASPHALT

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

3.6 COMPACTION

- A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or with vibratory-plate compactors in areas inaccessible to rollers.
 - 1. Complete compaction before mix temperature cools to **185 deg F**.
- B. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.
- C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:
 - 1. Average Density: 92 percent of reference maximum theoretical density according to ASTM D 2041/D 2041M, but not less than 90 percent or greater than 96 percent.
- D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.
- E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.



- F. Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.
- G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.
- H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.7 INSTALLATION TOLERANCES

- A. Pavement Thickness: Compact each course to produce the thickness indicated within the following tolerances:
 - 1. Base 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 a surface smoothness within the following tolerances as determined by using a **10-foot** straightedge applied transversely or longitudinally to paved areas:
 - 1. Base Course: **1/4 inch**.
 - 2. Surface Course: **1/8 inch**.

3.8 SURFACE TREATMENTS

- A. Fog Seals: Apply fog seal at a rate of **0.10 to 0.15 gal./sq. yd.** to existing asphalt pavement and allow to cure. With fine sand, lightly dust areas receiving excess fog seal.

3.9 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
- B. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined according to ASTM D 3549/D 3549M.
- C. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.

3.10 WASTE HANDLING

- A. General: Handle asphalt-paving waste according to approved waste management plan required in Section 017419 "Construction Waste Management and Disposal."

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 Concrete Paving Including the Following:
 - 1. Pads for Tables & Trash Receptacles.
- B. Related Requirements:
 - 1. Section 033000 "Cast-in-Place Concrete" for general building applications of concrete.

1.3 DEFINITIONS

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

1.4 PREINSTALLATION MEETINGS

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Design Mixtures: For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified ready-mix concrete manufacturer .
- B. Material Certificates: For the following, from manufacturer:
 - 1. Cementitious materials.



2. Steel reinforcement and reinforcement accessories.
3. Admixtures.
4. Curing compounds.
5. Applied finish materials.
6. Bonding agent or epoxy adhesive.

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.

1.7 QUALITY ASSURANCE

A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities" (Quality Control Manual - Section 3, "Plant Certification Checklist").

1.8 PRECONSTRUCTION TESTING

1.9 FIELD CONDITIONS

A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

B. Cold-Weather Concrete Placement: Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing, or low temperatures. Comply with ACI 306.1 and the following:

1. When air temperature has fallen to or is expected to fall below **40 deg F**, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than **50 deg F** and not more than **80 deg F** at point of placement.
2. Do not use frozen materials or materials containing ice or snow.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in design mixtures.

C. Hot-Weather Concrete Placement: Comply with **ACI 301** and as follows when hot-weather conditions exist:

1. Cool ingredients before mixing to maintain concrete temperature below **90 deg F** at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated in total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.



PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

- A. ACI Publications: Comply with **ACI 301** unless otherwise indicated.

2.2 FORMS

- A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, and smooth exposed surfaces.
- 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 CONCRETE MATERIALS

- A. Cementitious Materials: Use the following cementitious materials, of same type, brand, and source throughout Project:
 - 1. Portland Cement: ASTM C 150/C 150M, gray portland cement Type I .
- B. Normal-Weight Aggregates: ASTM C 33/C 33M, Class 4M , uniformly graded. Provide aggregates from a single source with documented service-record data of at least 10 years' satisfactory service in similar paving applications and service conditions using similar aggregates and cementitious materials.
 - 1. Maximum Coarse-Aggregate Size: **3/4 inch** nominal.
 - 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- C. Chemical Admixtures: Admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.
 - 1. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
- D. Water: Potable and complying with ASTM C 94/C 94M.

2.4 CURING MATERIALS

- A. Absorptive Cover: AASHTO M 182, Class 3, burlap cloth made from jute or kenaf, weighing approximately **9 oz./sq. yd.** dry or cotton mats.
- B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- C. Water: Potable.



2.5 CONCRETE MIXTURES

- A. Prepare design mixtures, proportioned according to **ACI 301**, for each type and strength of normal-weight concrete, and as determined by either laboratory trial mixtures or field experience.
 - 1. Use a qualified independent testing agency for preparing and reporting proposed concrete design mixtures for the trial batch method.
 - 2. When automatic machine placement is used, determine design mixtures and obtain laboratory test results that comply with or exceed requirements.
- B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:
 - 1. Combined Fly Ash or Pozzolan, and Slag Cement: 40 percent, with fly ash or pozzolan not exceeding 22 percent.
- C. Add air-entraining admixture at manufacturer's prescribed rate to result in normal-weight concrete at point of placement having an air content as follows:
 - 1. Air Content: 5 percent plus or minus 1-1/2 percent for **3/4-inch** nominal maximum aggregate size.
- D. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.
- E. Chemical Admixtures: Use admixtures according to manufacturer's written instructions.
 - 1. Use in concrete as required for placement and workability.
- F. Synthetic Fiber: Uniformly disperse in concrete mixture at manufacturer's recommended rate, but not less than .
- G. Color Pigment: Add color pigment to concrete mixture according to manufacturer's written instructions and to result in hardened concrete color consistent with approved mockup.
- H. Concrete Mixtures: Normal-weight concrete.
 - 1. Compressive Strength (28 Days): **4000 psi** .
 - 2. Maximum W/C Ratio at Point of Placement: 0.45 .
 - 3. Slump Limit: **4 inches** , plus or minus **1 inch**.

2.6 CONCRETE MIXING

- A. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Mix concrete materials in appropriate drum-type batch machine mixer.
 - 1. For concrete batches of **1 cu. yd.** or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released.



2. For concrete batches larger than 1 cu. yd., increase mixing time by 15 seconds for each additional 1 cu. yd..
3. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixing time, quantity, and amount of water added.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine exposed subgrades and subbase surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.
- B. Proof-roll prepared subbase surface below concrete paving to identify soft pockets and areas of excess yielding.
 1. Completely proof-roll subbase in one direction and repeat in perpendicular direction. Limit vehicle speed to 3 mph.
 2. Proof-roll with a pneumatic-tired and loaded, 10-wheel, tandem-axle dump truck weighing not less than 15 tons.
 3. Correct subbase with soft spots and areas of pumping or rutting exceeding depth of 1/2 inch according to requirements in Section 312000 "Earth Moving."
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Remove loose material from compacted subbase surface immediately before placing concrete.

3.3 EDGE FORMS AND SCREED CONSTRUCTION

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

3.4 JOINTS

- A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.



- B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.
- C. Edging: After initial floating, tool edges of paving, and joints in concrete with an edging tool to a **1/4-inch** radius. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

3.5 CONCRETE PLACEMENT

- A. Before placing concrete, inspect and complete formwork installation and items to be embedded or cast-in.
- B. Remove snow, ice, or frost from subbase surface before placing concrete. Do not place concrete on frozen surfaces.
- C. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.
- D. Comply with **ACI 301** requirements for measuring, mixing, transporting, and placing concrete.
- E. Do not add water to concrete during delivery or at Project site. Do not add water to fresh concrete after testing.
- F. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
- G. Consolidate concrete according to **ACI 301** by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.
- H. Screed paving surface with a straightedge and strike off.
- I. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleedwater appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

3.6 FLOAT FINISHING

- A. General: Do not add water to concrete surfaces during finishing operations.
- B. Float Finish: Begin the second floating operation when bleedwater sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.



1. Medium-to-Coarse-Textured Broom Finish: Provide a coarse finish by striating float-finished concrete surface **1/16 to 1/8 inch** deep with a stiff-bristled broom, perpendicular to line of traffic.

3.7 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
- B. Comply with ACI 306.1 for cold-weather protection.
- C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching **0.2 lb/sq. ft. x h** before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete but before float finishing.
- D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
- E. Curing Methods: Cure concrete by moisture-retaining-cover curing curing compound or a combination of these as follows:
 1. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover, placed in widest practicable width, with sides and ends lapped at least **12 inches**, and sealed by waterproof tape or adhesive. Immediately repair any holes or tears occurring during installation or curing period, using cover material and waterproof tape.
 2. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating, and repair damage during curing period.

3.8 PAVING TOLERANCES

- A. Comply with tolerances in **ACI 117** and as follows:
 1. Elevation: **1/4 inch**.
 2. Thickness: Plus **3/8 inch**, minus **1/4 inch**.
 3. Surface: Gap below **10-feet-** long; unlevelled straightedge not to exceed **1/2 inch**.
 4. Joint Spacing: **3 inches**.
 5. Contraction Joint Depth: Plus **1/4 inch**, no minus.
 6. Joint Width: Plus **1/8 inch**, no minus.

3.9 REPAIR AND PROTECTION

- A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Architect.



- B. Drill test cores, where directed by Architect, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory paving areas with portland cement concrete bonded to paving with epoxy adhesive.
- C. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.
- D. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 321313



SECTION 321400 - UNIT PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Requirements, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Reclaimed Granite Curb
 - 2. Plastic edge restraints.
- B. Related Requirements:
 - 1. Section 31200 - Earth Moving for Subgrade preparation

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site .

1.4 ACTION SUBMITTALS

- A. Product Data: For the following:
 - 1. Mortar and grout materials.
 - 2. Granite curbs.
- B. Samples for Initial Selection: For each type of unit paver indicated .
 - 1. Granite curbs.

1.5 INFORMATIONAL SUBMITTALS

1.6 QUALITY ASSURANCE

- A. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.



1. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- B. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

1.8 FIELD CONDITIONS

- A. Cold-Weather Protection: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen subgrade or setting beds. Remove and replace unit paver work damaged by frost or freezing.
- B. Weather Limitations for Bituminous Setting Bed:
 1. Install bituminous setting bed only when ambient temperature is above 40 deg F and when base is dry.
- C. Weather Limitations for Mortar and Grout:
 1. Cold-Weather Requirements: Comply with cold-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.
 2. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6. Provide artificial shade and windbreaks and use cooled materials as required. Do not apply mortar to substrates with temperatures of 100 deg F and higher.
 - a. When ambient temperature exceeds 100 deg F, or when wind velocity exceeds 8 mph and ambient temperature exceeds 90 deg F, set pavers within 1 minute of spreading setting-bed mortar.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations: Obtain each type of unit paver, joint material, and setting material from single source with resources to provide materials and products of consistent quality in appearance and physical properties.

2.2 CURBS AND EDGE RESTRAINTS

- A. Granite Curb from Providence Parks Department Stockpile



- B. Size: +/-6"W x +/-18"T, length varies

2.3 AGGREGATE SETTING-BED MATERIALS

- A. Graded Aggregate for Subbase: Sound, crushed stone or gravel complying with ASTM D 448 for Size No. 57 .

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine surfaces indicated to receive unit paving, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Remove substances from concrete substrates that could impair mortar bond, including curing and sealing compounds, form oil, and laitance.
- B. Sweep concrete substrates to remove dirt, dust, debris, and loose particles.
- C. Proof-roll prepared subgrade according to requirements in Section 312000 "Earth Moving" to identify soft pockets and areas of excess yielding. Proceed with unit paver installation only after deficient subgrades have been corrected and are ready to receive base course for unit pavers.

3.3 INSTALLATION, GENERAL

- A. Cut granite to fit as needed with motor-driven masonry saw equipment to provide clean, sharp, unchipped edges. Cut units to provide pattern indicated and to fit adjoining work neatly. Use full units without cutting where possible. Hammer cutting is not acceptable.
- B. Tolerances: Do not exceed **1/8-inch** unit-to-unit offset from flush (lippage) or **1/8 inch in 10 feet** from level, or indicated slope, for finished surface of paving.
- C. Tolerances: Do not exceed **1/4 inch in 10 feet** from level, or indicated slope, for finished surface of paving.
- D. Expansion and Control Joints: Provide for sealant-filled joints at locations and of widths indicated. Provide compressible foam filler as backing for sealant-filled joints. Install joint filler before setting pavers. Sealant materials and installation are specified in Section 079200 "Joint Sealants."



3.4 AGGREGATE SETTING-BED APPLICATIONS

- A. Compact soil subgrade uniformly to at least 95 percent of ASTM D 698 laboratory density.
- B. Proof-roll prepared subgrade to identify soft pockets and areas of excess yielding. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.
- C. Place separation geotextile over prepared subgrade, overlapping ends and edges at least **12 inches**.
- D. Place aggregate base, compact by tamping with plate vibrator, and screed to depth indicated.
- E. Place leveling course and screed to a thickness of **1 to 1-1/2 inches**, taking care that moisture content remains constant and density is loose and uniform until pavers are set and compacted.
- F. Set pavers with a minimum joint width of **1/16 inch** and a maximum of **1/8 inch**, being careful not to disturb leveling base. If pavers have spacer bars, place pavers hand tight against spacer bars. Use string lines to keep straight lines.

3.5 REPAIRING, POINTING, AND CLEANING

- A. Remove and replace unit pavers that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Provide new units to match adjoining units and install in same manner as original units, with same joint treatment and with no evidence of replacement.
- B. Pointing: During tooling of joints, enlarge voids or holes and completely fill with grout. Point joints at sealant joints to provide a neat, uniform appearance, properly prepared for sealant application.
- C. Cleaning: Remove excess grout from exposed paver surfaces; wash and scrub clean.

END OF SECTION 321400



SECTION 321413 - PRECAST CONCRETE UNIT PAVING

PART 1 - PART 1 GENERAL

1.1 SUMMARY

A. Section includes the following:

1. Concrete Pavers
2. Joint Sand
3. Setting Bed Sand
4. Base Aggregate

1.2 RELATED SECTIONS

- A. Section 312000 – Earth Moving
- B. Section 321400 – Unit Paving

1.3 SUBMITTALS

A. Concrete Pavers:

1. Samples for verification: Three representative full-size samples of each paver type, thickness, color and finish that indicate the range of color variation and texture expected upon project completion.
2. Accepted samples become the standard of acceptance for the product produced.
3. Test results from an independent testing laboratory for compliance of concrete pavers with ASTM C 936.
4. Manufacturer's catalog product data, installation instructions, and material safety data sheets for the safe handling of the specified materials and products.

B. Joint and Setting Bed Sand:

1. Provide representative one pound samples in containers of Joint Sand materials.
2. Test results from an independent testing laboratory for sieve analysis per ASTM C
3. 136 conforming to the grading requirements of ASTM C 144.

C. Paving Installation Contractor:

1. Job references from a minimum of three projects similar in size and complexity. Provide Owner/Client/General Contractor names, postal address, phone, fax, and email address.



1.4 QUALITY ASSURANCE

- A. Utilize a Manufacturer having at least ten years of experience manufacturing concrete pavers on projects of similar nature or project size.
- B. B:Source Limitations:
 - 1. Obtain Concrete Pavers from one source location with the resources to provide products of consistent quality in appearance and physical properties.
 - 2. Obtain Joint and Setting Bed Sands from one source with the resources to provide materials and products of consistent quality in appearance and physical properties.
- C. Paving Contractor Qualifications:
 - 1. Utilize an installer having successfully completed concrete paver installation similar in design, material, and extent indicated on this project.
- D. Mockups:
 - 1. Install a 5 ft x 5 ft paver area per each paving pattern.
 - 2. Use this area to determine joint sizes, lines, laying pattern(s) and levelness. This area will serve as the standard by which the workmanship will be judged.
 - 3. Subject to acceptance by owner, mock-up may be retained as part of finished work.
 - 4. If mock-up is not retained, remove and dispose legally.

1.5 DELIVERY, STORAGE & HANDLING

- A. Deliver Concrete Pavers in manufacturer's original, unopened and undamaged container packaging with identification labels intact.
 - 1. Coordinate delivery and paving schedule to minimize interference with normal use of streets and sidewalks adjacent to paver installation.
 - 2. Deliver Concrete Pavers to the site in steel banded, plastic banded or plastic wrapped packaging capable of transfer by forklift or clamp lift.
 - 3. Unload Concrete Pavers at job site in such a manner that no damage occurs to the product or adjacent surfaces.
- B. Store and protect materials free from mud, dirt and other foreign materials.
- C. Prevent Joint and Setting Bed Sand from exposure to rainfall or removal by wind with secure, waterproof covering.

1.6 PROJECT/SITE CONDITIONS

- A. Environmental Requirements:
 - 1. Install Concrete Pavers only on unfrozen and dry Setting Bed Sand.
 - 2. Install Setting Bed Sand only on unfrozen and dry Base or Subbase Aggregate materials.
 - 3. Install Base or Subbase Aggregates only over unfrozen subgrade.



4. Install Setting Bed Sand or Concrete Pavers when no heavy rain or snowfall are forecast within 24 hours.

1.7 CONCRETE PAVER OVERAGE AND ATTIC STOCK

- A. Provide a minimum of 5% additional material for overage to be used during construction.
- B. Manufacture to supply maintenance and reinstatement manuals for Concrete Paver units.

1.8 CONCRETE PAVERS

- A. Basis-of-Design Product: The Concrete Paver shapes are based on:
 1. Unilock:
 - a. Hollandstone
 - b. As manufactured by: Unilock 35 Commerce Dr. Uxbridge, MA 01569
 - c. Contact: Ashley Allard-LaCroix - 508 278 4536 ext.4046
 2. Approved Equal
 - a. To obtain acceptance of unspecified products, submit written requests at least 7 days before the Bid Date.
- B. Product requirements:
 1. Concrete Paver Type 1: Holandstone
 - a. Finish: (Select finish type from below and insert here. Finish type will affect product pricing).
 - b. Standard – this is not a face mix finish.
 - c. Color: Charcoal
 - d. Edge: Chamfer,
 - e. Size: Manufacture the sizes indicated with a maximum tolerance of plus or minus 1/16 inch for length and width. Maximum height tolerance of plus or minus 1/8 inch..
 - f. 7.875" X 3.875" X 2.375".
- C. Provide pavers meeting the minimum material and physical properties set forth in ASTM C 936, Standard Specification for Interlocking Concrete Paving Units. Efflorescence is not a cause for rejection.
 1. Average compressive strength 8000 psi (55MPa) with no individual unit under 7,200 psi (50 MPa).
 2. Average absorption of 5% with no unit greater than 7% when tested according to ASTM C 140.
 3. Conforming to ASTM C 1645 when tested for freeze-thaw requirements.
 4. Height tolerances +/- 3.2 mm (1/8 in).
- D. Accept only pigments in concrete pavers conforming to ASTM C 979. Note: ACI Report No. 212.3R provides guidance on the use of pigments.
- E. Maximum allowable breakage of product is 5%.



1.9 JOINT SAND

A. Provide natural Joint Sand as follows:

1. Washed, clean, non-plastic, free from deleterious or foreign matter, symmetrically shaped, natural or manufactured from crushed rock.
2. Do not use limestone screenings, stone dust, or sand for the Joint Sand material that does not conform to the grading requirements of ASTM C 33.
3. Utilize sands that are as hard as practically available where concrete pavers are subject to vehicular traffic.

1.10 SETTING BED SAND

A. Provide Setting Bed Sand as follows:

1. Washed, clean, non-plastic, free from deleterious or foreign matter, symmetrically shaped, natural or manufactured from crushed rock.
2. Do not use limestone screenings, stone dust, or sand material that does not conform to the grading requirements of ASTM C 33.
3. Do not use mason sand or sand conforming to ASTM C 144.
4. Utilize sands that are as hard as practically available where concrete pavers are subject to vehicular traffic.

1.11 BASE AGGREGATE

A. Provide Base Aggregate materials conforming to ASTM D 2940 and as indicated in the drawings and section 312000

1.12 EDGE RESTRAINTS

A. Concrete Edge Restraint as indicated.

B. Plastic and Metal Edge Restraints:

1. Pave Tech
 - a. Material Type: Plastic
 - b. Model No.: Pave Edge Rigid, Pave Edge Flexible, Pave Edge Industrial
2. Snap Edge
 - a. Material Type: Plastic
 - b. Model No.: One Piece Edging, 96 inches

1.13 EXAMINATION

A. Examine areas indicated to receive paving for compliance with requirements for installation tolerances and other conditions affecting performance for the following items before placing the Concrete Pavers.



1. Verify that subgrade preparation, compacted density and elevations conform to specified requirements.
2. Verify that the Base Aggregate materials, thickness, compacted density, surface tolerances and elevations conform to specified requirements.
3. Provide written density test results for soil subgrade, Base Aggregate materials to the Owner, General Contractor and paver installation subcontractor.
4. Verify location, type, and elevations of edge restraints, concrete curbing, concrete collars around utility structures, and drainage inlets.

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

1. Beginning of Bedding Sand and Concrete Paver installation signifies acceptance of Base and edge restraints.

1.14 PREPARATION

- A. Verify that the subgrade soil is free from standing water.
- B. Stockpile Setting Bed Sand, Joint Sand, Base Aggregate materials such that they are free from standing water, uniformly graded, free of any organic material or sediment, debris, and ready for placement.
- C. Remove any excess thickness of soil applied over the excavated soil subgrade to trap sediment from adjacent construction activities before placing the Aggregate materials.
- D. Keep area where pavement is to be constructed free from sediment during entire job. Remove and replace all Joint Sand, Setting Bed Sand, Base Aggregate materials contaminated with sediment with clean materials.
- E. Complete all subdrainage of underground services within the pavement area in conjunction with subgrade preparation and before the commencement of Base Aggregate construction.
- F. Prevent to damage underdrain pipes, overflow pipes, observation wells, or inlets and other drainage appurtenances during installation. Report all damage immediately.
- G. Compact soil subgrade uniformly to at least 95 percent of Standard Proctor Density per ASTM D 698 for pedestrian areas. Compact soil subgrade uniformly to at least 98 percent Modified Proctor per ASTM D 1557 for vehicular areas. Stabilization of the subgrade and/or base material may be necessary with weak or saturated subgrade soils.
- H. Backfill all service trenches within the pavement area to the sub- grade level with approved material placed in uniform lifts not exceeding 4 in. (100 mm) loose thickness. Compact each lift to at least 100 percent Standard Proctor Density as specified in ASTM D 698.
- I. Trim the subgrade to within 0 to ½ in. (0 to 13mm) of the specified grades. Do not deviate the surface of the prepared subgrade by more than 3/8 in. (10mm) from the bottom edge of a 39 in. (1m) straight edge laid in any direction.
- J. Do not proceed with further pavement construction, under any circumstances, until the subgrade has been inspected by the Architect/Engineer.



1.15 INSTALLATION

A. EDGE RESTRAINTS

1. Provide plastic or metal edge restraints as indicated. (Delete if not being used).
 - a. Provide plastic or metal edge restraints along the perimeter of all paving as indicated and supported on a minimum of 6 inches (150 mm) of Base Aggregate.
 - b. Provide 10" spiral galvanized or stainless steel spike to fasten plastic edge restraint at 24 inches on center for straight sections and 12 inches on center for curved sections.

B. BASE AGGREGATE

1. Provide the Base Aggregate material in uniform lifts not exceeding 6 in. (150 mm) over the compacted or Subgrade material and compact to at least 100 percent Standard Proctor Density as per ASTM D 698.
2. Compact the Base Aggregate material with at least two passes in the vibratory mode then at least two in the static mode with a minimum 10 ton vibratory roller until there is no visible movement. Do not crush aggregate with the roller.
3. Tolerance: Do not exceed the specified surface grade of the compacted Base Aggregate material more than $\pm 3/8$ in. (10 mm) over a 10 ft. (3 m) long straightedge laid in any direction.
4. Compact and grade the upper surface of the base sufficiently to prevent infiltration of the bedding sand into the base both during construction and throughout its service life. Blend segregated areas of the granular base by the application of crushed fines that have been watered and compacted into the surface.

C. SETTING BED SAND

1. Provide, spread and screed Setting Bed Sand evenly over the compacted Base Aggregate course.
 - a. Protect screeded Setting Bed Sand from being disturbed by either pedestrian or vehicular traffic.
 - b. Screed only the area which can be covered by pavers in one day.
 - c. Do not use Setting Bed Sand material to fill depressions in the base surface.
2. Keep moisture content constant and density loose and constant until Concrete Pavers are set and compacted.
3. Screed Setting Bed Sand using either an approved mechanical spreader (e.g.: an asphalt paver) or by the use of screed rails and boards. Maintain in a loose condition slightly ahead of the paving units and fully protect against incidental compaction following screeding. Loosen compacted sand by rain or screeded sand left overnight before further paving units are placed.
4. Inspect the Setting Bed Sand course prior to commencing the placement of the Concrete Pavers. Acceptance of the Setting Bed Sand occurs with the initiation of Concrete Paver placement.

D. CONCRETE PAVERS

1. Replace Concrete Pavers with chips, cracks, voids, discolorations, and other defects that might be visible in finished work.



2. Mix Concrete Pavers from a minimum of three (3) bundles simultaneously drawing the paver vertically rather than horizontally, as they are placed, to produce uniform blend of colors and textures. (Color variation occurs with all concrete products. This phenomenon is influenced by a variety of factors, e.g. moisture content, curing conditions, different aggregates and, most commonly, from different production runs. By installing from a minimum of three (3) bundles simultaneously, variation in color is dispersed and blended throughout the project).
3. Exercise care in handling face mix concrete pavers to prevent surfaces from contacting backs or edges of other units.
4. Provide Concrete Pavers using laying pattern as indicated. Adjust laying pattern at pavement edges such that cutting of edge pavers is minimized. Cut all pavers exposed to vehicular tires no smaller than one-third of a whole paver.
5. Use string lines or chalk lines on Setting Bed Sand to hold all pattern lines true.
6. Set paver surface elevation a minimum of 3 mm (1/8 inch) to a maximum of 6 mm (1/4 inch) above adjacent drainage inlets, concrete collars or channels (provided the change in slope does not impede or alter the drainage or direction of flow).
7. Place units hand tight against spacer bars. Adjust horizontal placement of laid pavers to align straight.
 - a. When installation is performed with mechanical equipment, use only unit pavers with spacer bars on sides of each unit.
8. Provide space between paver units of 1/32 in. (1 mm) wide to achieve straight bond lines.
9. Prevent joint (bond) lines from shifting more than $\pm 1/2$ in. (± 13 mm) over 50 ft. (15 m) from string lines.
 - a. m) from string lines.
10. Fill gaps between units or at edges of the paved area that exceed 3/8 inch (10 mm) with pieces cut to fit from full-size unit pavers.
11. Cut Concrete Pavers with motor-driven masonry saw equipment to provide clean, sharp, unchipped edges. Cut units to provide pattern indicated and to fit adjoining work neatly. Use full units without cutting where possible. Hammer cutting is not acceptable.
12. Prevent all traffic on installed Concrete Pavers until Joint Sand has been vibrated into joints. Keep skid steer and forklift equipment off newly laid Concrete Pavers that have not received initial compaction and Joint Sand material.
13. Vibrate Concrete Pavers into leveling course with a low-amplitude plate vibrator capable of a to 5000-lbf (22-kN) compaction force at 80 to 90 Hz. Perform at least three passes across paving with vibrator. Vibrate under the following conditions:
 - a. After edge pavers are installed and there is a completed surface or before surface is exposed to rain.
14. Compact installed Concrete Pavers to within 6 feet (2 meters) of the laying face before ending each day's work. Cover Concrete Pavers that have not been compacted and leveling course on which pavers have not been placed, with nonstaining plastic sheets to prevent Setting Bed Sand from becoming disturbed.
15. Protect face mix Concrete Paver surface from scuffing during compaction by utilizing a urethane pad.
16. Remove any cracked or structurally damaged Concrete Pavers and replace with new units prior to installing Joint Sand material.

E. JOINT SAND

1. Provide, spread and sweep dry Joint Sand into joints immediately after vibrating pavers into Setting Bed Sand course until full. Vibrate pavers and add Joint Sand material until



joints are completely filled, then remove excess material. This will require at least 4 passes with a plate compactor.

2. Leave all work to within 3 ft. (1 m) of the laying face fully compacted with sand-filled joints at the completion of each day.
3. Remove excess Joint Sand broom clean from surface when installation is complete.

1.16 FIELD QUALITY CONTROL

- A. Verify final elevations for conformance to the drawings after sweeping the surface clean.

1. Prevent final Concrete Paver finished grade elevations from deviating more than
 - a. $\pm 3/8$ in. (± 10 mm) under a 10 ft (3 m) straightedge or indicated slope, for finished surface of paving.

- B. Lippage: Paver-to-Paver Lippage:

1. No greater than 3 mm (1/8 inch) difference in height between adjacent pavers.

1.17 REPAIRING, CLEANING AND SEALING

- A. Remove and replace unit pavers that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Provide new units to match adjoining units and install in same manner as original units, with same joint treatment and with no evidence of replacement.

- B. Cleaning: Remove excess dirt, debris, stains, grit, etc. from exposed paver surfaces; wash and scrub clean.

1. Clean Concrete Pavers in accordance with the manufacturer's written recommendations.

1.18 PROTECTION

END OF SECTION 321413



SECTION 321816.13 - PLAYGROUND PROTECTIVE SURFACING

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. Organic loose-fill surfacing.
 - 2. Slide Wear Mat

1.3 DEFINITIONS

- A. Definitions in ASTM F 2223 apply to Work of this Section.
- B. Critical Height: Standard measure of shock attenuation according to ASTM F 2223; same as "critical fall height" in ASTM F 1292. According to ASTM F 1292, this approximates "the maximum fall height from which a life-threatening head injury would not be expected to occur."
- C. SBR: Styrene-butadiene rubber.
- D. Unitary Surfacing: A protective surfacing of one or more material components bound together to form a continuous surface; same as "unitary system" in ASTM F 2223.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Manufacturer's Information:
 - 1. The Contractor shall provide the manufacturer's information for playground protective surfacing to the City's Representative
 - 2. Within ten days of award of Contract, the subcontractor shall submit for City's Representative's approval a complete list of manufacturer's names of all materials and equipment proposed for the project.
- C. Samples for Verification: For each type of protective surfacing and exposed finish.
 - 1. Include Samples of accessories to verify color and finish selection.
 - 2. Loose-Fill Surfacing: Minimum 1 quart.



3. Drainage/Separation Geotextile: Minimum **12 by 12 inches**.

- D. Product Schedule: For protective surfacing.

1.5 INFORMATIONAL SUBMITTALS

- A. Material Certificates: For each type of loose-fill surfacing.
- B. Sample Warranty: For manufacturer's special warranty.
- C. Operating Instructions and Maintenance Manual:
 1. After approval of the above list, the Subcontractor shall submit for City's Representative's approval complete detailed manufacturer's data.
 2. For maintenance purposes, the Contractor shall provide manufacturer's maintenance bulletins, including the name, address and telephone number of the manufacturer's representative.
 3. Errors, omissions and coordination of manufacturer's information shall be the sole responsibility of the Contractor whether or not it is approved
 4. In the event that any specified manufacturer's number has been superseded by a new number since the writing of this specification, the new manufacturer's number shall be immediately submitted to the City's Representative's for approval. It shall be the responsibility of the Contractor to notify the City's Representative of any superseded manufacturer's numbers mentioned in these specifications.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.
- B. The installation shall comply with all laws applying to construction in effect in Providence, RI and with regulations of any other governmental body or agency having jurisdiction.

1.7 DRAWINGS

- A. The Contractor shall refer to the drawings, and other plans and details for a full comprehension of the extent and detail of the work to be performed. These drawings are intended to be supplementary to the specifications, and any work indicated, mentioned or implied in either is to be constructed as specified by both
- B. All work shown on the Drawings is intended to be approximately correct to the scale of the drawings but figured dimensions and detailed drawings are diagrammatic and are not intended to show every detail of construction or the exact location of equipment. Where building construction makes it advisable or necessary to change the location of equipment, the Contractor shall perform such work without cost to the City on written request of the City's Representative. Any doubt as to the intended location of equipment shall be resolved by the City's Representative before proceeding with the installation.



- C. In any discrepancy between requirements of any Section, between notes on the drawings, between drawings, between details in the specifications, or between drawings and specifications, that which is in the best interest of the City shall apply.

1.8 WARRANTY

- A. Special Warranty: Manufacturer and Installer agree to repair or replace components of protective surfacing that fail in materials or workmanship within specified warranty period.
1. Failures include, but are not limited to, the following:
 - a. Reduction in impact attenuation as measured by reduction of critical fall height.
 - b. Deterioration of protective surfacing and other materials beyond normal weathering.
 - c. Faulty or inadequate design of equipment provided.
 - d. Improper installation.
 - e. Defective workmanship and materials.
 2. Warranty Period:
 - a. Engineered Wood Fiber Mulch: 1 year from date of Substantial Completion.
 - b. Slide Wear Mat: 5 years from date of Substantial Completion

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations: Obtain protective surfacing materials from single source from single manufacturer.
1. Provide geosynthetic accessories of each type from source recommended by manufacturer of protective surfacing materials.

2.2 PERFORMANCE REQUIREMENTS

- A. Impact Attenuation: Critical fall height tested according to ASTM F 1292.

2.3 ORGANIC LOOSE-FILL SURFACING

- A. Engineered Wood Fiber: ASTM F 2075; containing no bark, leaves, twigs, or foreign or toxic materials.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Fibar Group LLC (The).
 - b. GameTime; a PlayCore Company.
 - c. Supreme Forest Products, Inc.
 - d. Approved Equal



2. Critical Height: As indicated on Drawings .
3. Uncompressed Material Depth: Not less than as indicated on Drawings (12") .

2.4 GEOSYNTHETIC ACCESSORIES

- A. Drainage/Separation Geotextile: Nonwoven, needle-punched geotextile, manufactured for drainage applications and made from polyolefins or polyesters; with the following minimum properties:
 1. Weight: 4 oz./sq. yd. ; ASTM D 5261.
 2. Water Flow Rate: 100 gpm/sq. ft. according to ASTM D 4491.

2.5 PLAYGROUND SURFACING WEAR MAT

- A. All materials, devices, and equipment, unless specifically excepted, shall be new
- B. Contractor shall utilize the products listed or approved equal.
 1. Woodcarpet® Foam Mat manufactured by Zeager Bros., Inc., 4000 East Harrisburg Pike, Middletown, Pennsylvania 17057. Toll Free (800) 346-8524.
 2. Approved Equal
- C. Playground Surfacing Wear Mat: WOODCARPET® FOAM MAT
 1. Composition: Closed-cell, cross-linked, polyethylene foam.
 2. Recycled content: 100% pre-consumer recovered foam.
 3. Top surface: Covered with layer of heavy duty vinyl.
 4. Drain holes: 3/8 diameter holes, one per square foot
 5. Size including flaps: 44" x 44" (slide exit)
 6. Finished size: 32" x 32" (slide exit)
 7. Thickness/weight: 1.13" thick = 1.1 pounds per square foot.
 8. Impact, ASTM F1292: 1.13 in. thick mat meets criteria up to 3 feet
 9. IPEMA Certification: 1.13" thick mat over 11" of engineered wood fiber mulch rated to 12ft. fall protection
 10. Custom mat vinyl specifications:
 - a. Color : Tan
 - b. Thickness: .075" or 75 mil. +/- .005
 - c. Material : 100% polyvinyl - Asbestos and Lead free
 - d. Technical data: ASTM F1913 Type 1; Grade 1; Flammability - GM 9070P - DNI (did not ignite); Tensile, PSI : 2900 / D-638; Brittle point : -20C / -4F; Chemical resistance: ASTM F925 - No change; Flexibility : ASTM F-137 - PASS; Abrasion resistance: ASTM D3389 - Net weight loss after 1,000 revolutions: .32% - PASS



2.6 MANUFACTURER'S QUALIFICATIONS

- A. The Contractor shall submit manufacturer's product data, including warranty, maintenance and installation instructions, ASTM F 1292 test results, IPEMA certificate of compliance, and samples. To obtain a certificate, visit www.ipema.org, product # WMFL11W
- B. Manufacturer Qualifications
 - 1. Member of International Play Equipment Manufacturer's Association (IPEMA)
 - 2. Total Liability Insurance Coverage: \$11,000,000
 - 3. Sales Representatives certified by National Playground Safety Institute (NPSI)
- C. Warranties of Manufacture of Playground Surface:
 - 1. Not less than 5 years

2.7 DELIVERY, STORAGE AND PROTECTION

- A. The Contractor shall be responsible for the work and equipment until finally inspected, tested and accepted. Carefully store materials and equipment which are not immediately installed after delivery to the site.
- B. Each Subcontractor shall protect work and material of other trades from damage that might be caused by that Subcontractor's work or workers and shall make good a damage thus caused.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for subgrade elevations, slope, and drainage and for other conditions affecting performance of the Work.
 - 1. Verify that substrates are sound and without high spots, ridges, holes, and depressions.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Prepare substrates to receive surfacing products according to protective surfacing manufacturer's written instructions.



3.3 INSTALLATION OF GEOSYNTHETIC ACCESSORIES

- A. Install geosynthetic accessories before edging and according to playground surface system manufacturer's and geosynthetic manufacturer's written instructions and in a manner that cannot become a tripping hazard.
 - 1. Drainage/Separation Geotextile: Completely cover area beneath protective surfacing, overlapping geotextile sides and edges a minimum of 8 inches with manufacturer's standard treatment for seams.

3.4 INSTALLATION OF LOOSE-FILL SURFACING

- A. Apply components of loose-fill surfacing according to manufacturer's written instructions to produce a uniform surface.
- B. Loose Fill: Place loose-fill materials to required depth after installation of playground equipment support posts and foundations. Include manufacturer's recommended amount of additional material to offset natural compaction over time.
- C. Wear Mats: Coordinate installation of mats and mat anchoring system with placing and compacting loose fill.
- D. Grading: Uniformly grade loose fill to an even surface free from irregularities.
- E. Compaction: After initial grading, mechanically compact loose fill before finish grading.
- F. Finish Grading: Hand rake to a uniformly smooth finished surface and to required elevations.

3.5 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to perform tests.
- B. Playground protective surfacing will be considered defective if it does not pass tests.

END OF SECTION 321816.13



SECTION 323116.10 - ORNAMENTAL WELDED WIRE FENCES AND GATES

PART 1 - GENERAL:

1.1 SECTION INCLUDES

- A. Decorative welded wire fencing, gates, and accessories.

1.2 RELATED SECTIONS

- A. Section 312000 - Earthmoving

1.3 SYSTEM DESCRIPTION

- A. The manufacturer shall supply a total ornamental welded wire fence system of the style, strength, size, and color defined herein. The system shall include all components as required, and shall be fabricated, coated, and assembled in the United States.

1.4 QUALITY ASSURANCE

- A. The contractor shall provide laborers and supervisors who are familiar with the type of construction involved, and the materials and techniques specified.
- B. Manufacturer of fence system must have ten (10) years of documented experience in manufacturing the products specified in this section.

1.5 REFERENCES

- A. ASTM A525 - Specification for General Requirements for Steel Sheet, Zinc-coated (Galvanized) by the Hot-Dip Process
- B. ASTM A641 – Specification for Zinc-Coated (Galvanized) Carbon Steel Wire
- C. ASTM A185 – Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.
- D. ASTM B117 – Practice for Operating Salt Spray (Fog) Apparatus
- E. ASTM D2247 – Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity

1.6 SUBMITTALS

- A. Manufacturer's submittal package shall be provided prior to installation.



- B. Changes in specification may not be made after the bid date.
- C. Samples of assembled materials, components, hardware, accessories, and/or colors, if requested.

1.7 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Upon receipt, materials should be checked for damage that may have occurred in shipping to the job site.
- B. Each package shall bear the name of the manufacturer.
- C. Store products in manufacturer's unopened packaging.
- D. Store materials in a secure and dry area to protect against damage, weather, vandalism, and theft.
- E. Transport, handle and store products with care to protect against damage before installation.

PART 2 - PRODUCTS:

2.1 MANUFACTURER

- A. The fencing system shall be Patriot Ornamental Wire Fence as manufactured by Jerith Manufacturing LLC., 14400 McNulty Road, Philadelphia, PA 19154. Telephone: 800-344-2242; Fax: 215-676-9756; email: sales@jerith.com.
- B. Substitutions: Approved equal permitted.
- C. Nominal fence height shall be 48 inches. Fences taller than 72" shall be made by stacking two same height panels on top of each other.
- D. Color shall be Black.

2.2 MATERIALS

- A. Structural Components: All posts and rails used in the fence system shall be manufactured from coil steel having a minimum yield strength of 55,000 psi. The steel shall be galvanized to meet the requirements of ASTM A525 with a zinc coating weight of 0.60-1.0 ounces per square foot.
- B. Infill: Section infill wires shall be steel with a minimum yield strength of 50,000 psi. The steel shall be galvanized to meet the designation of "regular coating" in accordance with requirements of ASTM A641.



2.3 FINISH

- A. Pretreatment: A five stage non-chrome pretreatment shall be applied. The final stage shall be a dry-in-place activator which produces a uniform chemical conversion coating for superior adhesion.
- B. Coating: Fence materials shall be coated with a TGIC polyester powder-coat finish system. Epoxy powder coatings, baked enamel or acrylic paint finishes are not acceptable. The finish shall have a cured film thickness of at least 2.0 mils.
- C. Tests: The cured finish shall meet the following requirements:
 - 1. Humidity resistance of 1,000 hours using ASTM D2247.
 - 2. Salt-spray resistance of 1,000 hours using ASTM B117.
 - 3. Outdoor weathering shall show no adhesion loss, checking or crazing, with only slight fade and chalk when exposed for 3 years in Florida facing south at a 45 degree angle.

2.4 FABRICATION

- A. Fence Sections shall be manufactured with 1" square x 18 gauge (.049") tubing welded every 12" to the top and bottom of welded wire panels. Welded wire panels shall be comprised of 4 (.225") gauge (Washburn & Moen Standard) vertical wires and 6 (.192") gauge horizontal wires. 4 gauge vertical wires shall be placed 3½" on center. 6 gauge vertical wires shall be placed 1¾" on center. Horizontal wires shall be 6 gauge and spaced to provide style differences but no further apart than would allow substantial rigidity of vertical wires. Horizontal and vertical wires shall be assembled by automatic machines or other suitable mechanical means that will ensure accurate spacing and alignment of all members of the finished fabric. The wires shall be connected at every intersection by electric resistance welding in accordance with all requirements in ASTM A185. Sections shall be capable of supporting a 550 lb. load applied vertically at midspan and a concentrated load of 225 lbs. applied horizontally at midspan without permanent deformation.
- B. Posts shall be 2½" square x 11 (.125") gauge steel tubing. Posts shall be spaced 70" apart from inside face to inside face. Steel rail ends shall be screwed to terminal posts to receive the 1" square top and bottom rails. The rails shall be secured to the rail ends by stainless steel screws. Steel caps shall be provided with all posts.
- C. Residential and light commercial grade gates shall be assembled using gate uprights with 1" outside cross-section dimensions having 7/8" tubes welded to them. A Fence Section shall then be cut to size and secured to two uprights using stainless steel screws. A 1" x .125" diagonal brace shall be provided, cut to length, cold galvanized, touched up, and screwed into position from the top hinge side to the bottom latch side of the gate. All gates shall support a 300 lb. vertical load on the latch side of the gate without collapsing.
- D. Heavy duty grade gate frames shall consist of 2" square x .125" wall gate uprights and 1.5" x 1.5" x .125" U-channels for top and bottom members welded at each connection with a 1" x .125" wall diagonal brace welded into place. Infill of matching Fence Section shall be welded into frame.



2.5 WARRANTY

- A. The entire fence system shall have a written 8 Year Warranty against rust and defects in workmanship and materials. In addition, the finish shall be warranted not to crack, chip, peel, or blister for the same period.

PART 3 - EXECUTION:

3.1 PREPARATION

- A. Verify areas to receive fencing are completed to final grades and elevations.
- B. Ensure property lines and legal boundaries are clearly established.
- C. Remove any surface irregularities which may cause interference with the installation of the fence.

3.2 FENCE INSTALLATION

- A. Install fence in accordance with the manufacturer's instructions.
- B. Excavate post holes to proper depth to suit local conditions for stability and support of the fence system without disturbing the underlying materials. Excavate deeper as required for adequate support in soft and loose soils.
- C. Set fence posts in concrete footers at 70" spacing from inside of post to inside of post. Note that this fence must be stepped for installations on a slope. It can not follow the grade.
- D. Center and align posts in holes to required depth. Place concrete around posts and tamp for consolidation. After tamping, check alignment of posts, and make necessary corrections before the concrete hardens.
- E. Insert rail ends into horizontal rails and fasten in place to the posts.
- F. Installing Fence on Slope: Step fence panels down the slope as indicated on the drawings so that fence tops remain level.

3.3 GATE INSTALLATION

- A. No gates on this project.

3.4 ACCESSORIES

- A. Install post caps and other accessories to complete fence.



3.5 CLEANING

- A. Contractor shall clean site of debris and excess materials. Post hole excavations shall be scattered uniformly away from posts.
- B. If necessary, clean fence system with mild household detergent and clean water. Excess concrete must be removed from posts and other fencing material before it hardens.

END OF SECTION 323116.10



SECTION 323253 - STONE RETAINING WALLS

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. Work includes furnishing and installing dry boulder retaining wall to be installed to the lines and grades designated on the project's final construction drawings or as directed by the Landscape Architect.
- B. Related Requirements:
 - 1. Section 312000 "Earth Moving" for excavation for boulder retaining walls.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site

1.4 ACTION SUBMITTALS

- A. Work Samples: Submit photos of at least three (3) similar projects completed by the installer that will be working on this project.
- B. Boulder Samples: Submit photos & measurements of a minimum of five (5) boulders that will be used.
- C. Work Documentation: Contractor shall submit detailed photographic or video documentation of the project from start to completion. This report is to verify correct building techniques.
 - 1. Document to include the following points:
 - 2. Prepared sub grade
 - 3. First Course Placement
 - 4. Second Course Placement
 - 5. Completed Wall with Backfill

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store and handle stone to prevent deterioration or damage due to contaminants, breaking, chipping, or other causes.



PART 2 - MATERIALS

2.1 BOULDERS

- A. Boulders for the wall shall be sized appropriately per the details for a single-course and double-course wall. The size ranges are as follows:
 - 1. Boulders for first course: 24-36" Height x 24-30" Depth x 36-48" Width/Length
 - 2. Boulders for second course: ±18" Height x 24-30" Depth x 36-48" Width/Length

2.2 FOOTING MATERIAL

- A. Drainage aggregate shall be clean angular stone, allowing water to freely pass through.
- B. Material must be stable and firm when compacted.
- C. Commonly available crushed stone aggregate in the size range of $\frac{3}{4}$ " to $1\frac{1}{2}$ " is required.
- D. In areas where the ground freezes water must easily pass through the footing material and have a place to drain to well away from the wall.

2.3 BACKFILL AGGREGATE

- A. Drainage aggregate shall be clean angular stone, that allows water to freely pass through.
- B. Material must be stable and firm when compacted.
- C. Aggregate size must be large enough that water will not "wash" it through the wall.
- D. Commonly available crushed stone aggregate in the size range of $\frac{3}{4}$ " to $1\frac{1}{2}$ " is typically suitable.

PART 3 - PART 3 – CONSTRUCTION

3.1 EXCAVATION

- A. A. Contractor shall excavate to the lines and grades shown on the project grading plans. Contractor shall take precautions to minimize over--- excavation. Over---excavation shall be filled with compacted infill material, or as directed by the Landscape Architect, at the Contractor's expense.
- B. B. Contractor shall verify location of existing structures and utilities prior to excavation. Contractor shall ensure all surrounding structures are protected from the effects of wall excavation. Excavation support, if required, is the responsibility of the Contractor.



3.2 FOOTING

- A. The subgrade soil shall be proof rolled and compacted to 95% standard Proctor density and inspected by the Owner's Engineer prior to placement of footing material.
- B. The footing material shall be placed to the depth and width called for in the construction documents. It shall be proof rolled and compacted to 95% standard Proctor density and inspected by the Owner's Engineer prior to placement of Foundation Stones.

3.3 PREPARING TO BUILD

- A. The Contractor shall build the wall in the location shown on the project plans.
- B. The Contractor shall build the wall to the dimensions and grades shown on the project plans.
- C. The exterior face of the wall shall have no bulges or hollows greater than 3" from adjacent stone

3.4 BUILDING THE WALL

A. FIRST COURSE

- 1. All stones shall be placed with their depth into the wall structure (perpendicular to the face of the wall).
- 2. Stones should be set level at the base.
- 3. To the greatest extent possible, stones of the same height should be placed next to each other to form an even horizontal course.
- 4. The underside of the stone shall be free of voids and well packed with footing material

B. SECOND COURSE

- 1. Shall be placed so they cover the full width of the top of the first course boulder
- 2. Second Course should be placed so the vertical joints between the stones are not over vertical joints in the course below.
- 3. Second Course stones shall be placed so they do not tip or shift when weight is applied to the top.
- 4. Second Course stones should be set so the top of the stones are roughly even (+/-2")
- 5. Second Course stones should be set level (from the front to the back of the wall).

3.5 BACKFILL PLACEMENT

- A. A. Only hand---operated compaction equipment shall be allowed within 3 feet of the back of the wall. Compaction within the 3 feet behind the wall shall be achieved by at least three (3) passes of a lightweight mechanical tamper, plate, or roller.
- B. At completion of wall construction, backfill shall be placed up to the height shown in the construction drawings. If final grading adjacent to the wall is not placed immediately after wall completion, temporary grading and drainage shall be provided to ensure water runoff is not



directed at the wall nor allowed to collect or pond behind the wall until final grading adjacent to the wall is completed.

- C. A non-woven geotextile should be used to separate the drainage aggregate from the backfill and other soil.

END OF SECTION 323253



SECTION 323343 - SITE SEATING AND TABLES

PART 1 - PART 1 – GENERAL

1.1 DESCRIPTION

- A. Examine all other sections of the Specifications for requirements which affect the work of this Section, whether or not such requirements are particularly mentioned herein.
- B. Coordinate the work of this section with the related work of other trades and cooperate with such trades to assure the steady progress of all work of this Contract.

1.2 SCOPE

- A. The work covered by this Specification consists of furnishing all labor, materials, equipment, supplies, etc. and the performance of all operations necessary for the installation of site seating and tables, as indicated on the Contract Documents.
- B. Without limiting the scope of work, the following is included in this project:
- C. Installation of 2 tables and associated seating; one table will provide seating configuration to provide ADA wheelchair accessibility

1.3 SUBMITTALS

- A. Manufacturer's Information:
 - 1. The Contractor shall provide the manufacturer's product information for site tables and seating to the City's Representative.
 - 2. Within ten days of award of Contract, the subcontractor shall submit for City's Representative's approval a complete list of manufacturer's names of all materials and equipment proposed for the project.
- B. Operating Instructions and Maintenance Manual:
- C. After approval of the above list, the Subcontractor shall submit for City's Representative's approval complete detailed manufacturer's data.
- D. For maintenance purposes, the Contractor shall provide manufacturer's maintenance bulletins, including the name, address and telephone number of the manufacturer's representative.
- E. Errors, omissions and coordination of manufacturer's information shall be the sole responsibility of the Contractor whether or not it is approved.
- F. In the event that any specified manufacturer's number has been superseded by a new number since the writing of this specification, the new manufacturer's number shall be immediately



submitted to the City's Representative's for approval. It shall be the responsibility of the Contractor to notify the City's Representative of any superseded manufacturer's numbers mentioned in these specifications.

1.4 QUALITY ASSURANCE

A. Applicable Standards, Permits and Codes:

1. The installation shall comply with all laws applying to construction in effect in Providence, RI and with regulations of any other governmental body or agency having jurisdiction.

1.5 EXAMINATION OF SITE AND CONTRACT DOCUMENTS

- A. Before submitting prices or beginning work, thoroughly examine the site and Contract Documents.
- B. No claim for extra compensation will be recognized if difficulties are encountered which an examination of site conditions and Contract Documents prior to executing the Contract would have revealed.

1.6 DRAWINGS

- A. The Contractor shall refer to the drawings, and other plans and details for a full comprehension of the extent and detail of the work to be performed. These drawings are intended to be supplementary to the specifications, and any work indicated, mentioned or implied in either is to be constructed as specified by both.
- B. All work shown on the Drawings is intended to be approximately correct to the scale of the drawings but figured dimensions and detailed drawings are diagrammatic and are not intended to show every detail of construction or the exact location of equipment. Where building construction makes it advisable or necessary to change the location of equipment, the Contractor shall perform such work without cost to the City on written request of the City's Representative. Any doubt as to the intended location of equipment shall be resolved by the City's Representative before proceeding with the installation.
- C. In any discrepancy between requirements of any Section, between notes on the drawings, between drawings, between details in the specifications, or between drawings and specifications, that which is in the best interest of the City shall apply.

1.7 GUARANTEE

A. Contractor's guarantee for items furnished covers and includes:

1. Faulty or inadequate design of equipment provided.
2. Improper installation.
3. Defective workmanship and materials.



1.8 SCHEDULING

- A. The Contractor shall schedule his work in accordance with Contract Requirements.

PART 2 - PART 2 – PRODUCTS

2.1 GENERAL REQUIREMENTS

- A. All materials, devices, and equipment, unless specifically excepted, shall be new.
- B. Contractor shall utilize the products listed or approved equal.
 - 1. Site Table: Rumba Table, round 4ft3in wide, Item number PAR1011-0301 manufactured by KOMPAN INC. 605 W Howard Ln - Suite 101 Austin, TX 78753 – US Phone: 1 (800) 426-9788 USSales@KOMPAN.COM
 - 2. Site Seating: Rumba Bench, curved 90 degrees, Item number PAR 1006-0301 manufactured by KOMPAN INC. 605 W Howard Ln - Suite 101 Austin, TX 78753 – US Phone: 1 (800) 426-9788 USSales@KOMPAN.COM

2.2 DELIVERY, STORAGE, AND PROTECTION

- A. The Contractor shall be responsible for the work and equipment until finally inspected, tested and accepted. Carefully store materials and equipment which are not immediately installed after delivery to the site.
- B. Each Subcontractor shall protect work and material of other trades from damage that might be caused by that Subcontractor's work or workers and shall make good a damage thus caused.

PART 3 - PART 3 – EXECUTION

3.1 GENERAL

- A. The Contractor shall locate and install site tables and seating, complete including concrete pavement, in locations identified on the drawings, in accordance with manufacturer's written instructions, and in accordance with approved shop drawings. The placement and height relationship shall be approved by the City's Representative.
- B. The Contractor shall use stainless steel anchors, supports, fasteners and other attachments shown, specified or necessary to secure work in place in accordance with the very best practices. The Contractor shall shim and adjust fixtures as required for to achieve a operable safe condition.
- C. Work installed by the Contractor which interferes with or modifies the design as shown on the Contract Drawings shall be changed as directed by the City's Representative, and all costs incidental to such changes shall be paid by the Contractor.



- D. In any and all cases of discrepancy in figures, plans or specifications the matter shall be immediately submitted to the City's Representative for decision.

3.2 SITE VISITS

- A. The Contractor will be required to visit the site as the work progresses and to carefully investigate the structural and finished conditions affecting all details of the work and shall arrange such work required to meet such conditions.

3.3 EXAMINATION AND APPROVAL OF WORK

- A. No work shall be covered before examination and approval by the City's Representative and by all inspectors and authorities having jurisdiction. Replace any imperfect or condemned work with work conforming to requirements and satisfactory to the City's Representative, without extra cost to the City. If work is covered before due inspection and approval, the Contractor shall pay all costs of reinstating the work.

3.4 CLEAN UP AND REPAIR

- A. At the completion of the work, the project area shall be left clean. Any damage caused to work of other trades shall be repaired at the expense of the Contractor.

3.5 GUARANTEE

- A. Attention is directed to provisions of the General Conditions regarding guarantees and warranties for work under this Contract.
- B. Upon receipt of notice from the City of failure of any part of the systems or equipment during the guarantee period, the affected part or parts shall be replaced by the Contractor.
- C. The Subcontractor shall furnish, before the final payment is made, a written guarantee covering the above requirements.

END OF SECTION 323343



SECTION 329119 - LANDSCAPE GRADING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Final grade topsoil for finish landscaping.

B. Related Sections:

1. Section 312213 - Rough Grading: Site contouring.
2. 329113 - Soil Preparation
3. 329200 - Turf and Grasses

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. Topsoil:

1. Basis of Measurement: By Cubic Yard (CY) .
2. Basis of Payment: Includes excavating existing topsoil, supplying topsoil materials, stockpiling, preparing and scarifying substrate surface, placing where required, and rolling.

1.3 SUBMITTALS

- A. Section 013300 - Submittal Procedures: Submittal procedures
- B. Samples: Submit, in air-tight containers, 1 cup sample of loam to testing laboratory.
- C. Materials Source: Submit name of imported materials source.

1.4 QUALITY ASSURANCE

- A. Furnish each topsoil material from single source throughout the Work.
- B. Perform Work in accordance with RIDOT Standard Specifications for Road & Bridge Construction, latest edition .



PART 2 - PRODUCTS

2.1 MATERIAL

- A. Topsoil: Fill Type S2 as specified in Section 329300.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 013000 - Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify substrate base has been contoured and compacted.

3.2 PREPARATION

- A. Protect landscaping and other features remaining as final Work.
- B. Protect existing structures, sidewalks, utilities, paving, and curbs.

3.3 SUBSTRATE PREPARATION

- A. Eliminate uneven areas and low spots.
- B. Remove debris, loose roots, branches, stones, in excess of 1/2 [1] [2] <_____> inch in size. Remove contaminated subsoil.
- C. Scarify surface to depth of 3 [6] <_____> inches where topsoil is scheduled. Scarify in areas where equipment used for hauling and spreading topsoil has compacted subsoil.

3.4 PLACING TOPSOIL

- A. Place topsoil in areas where seeding, is required. to thickness as scheduled. Place topsoil during dry weather.
- B. Fine grade topsoil to eliminate rough or low areas. Maintain profiles and contour of subgrade.
- C. Remove roots, weeds, rocks, and foreign material while spreading.
- D. Manually spread topsoil close to plant material, and path to prevent damage.
- E. Roll placed topsoil.
- F. Remove surplus subsoil and topsoil from site.



- G. Leave stockpile area and site clean and raked, ready to receive landscaping.

3.5 TOLERANCES

- A. Section 014000 - Quality Requirements: Tolerances.
- B. Top of Topsoil: Plus or minus 1/2 < _____ > inch.

3.6 PROTECTION OF INSTALLED WORK

- A. Section 017000 - Execution and Closeout Requirements: Requirements for protecting finished Work.
- B. Prohibit construction traffic over topsoil.

3.7 SCHEDULES

- A. Compacted topsoil thicknesses:
 - 1. Seeded Grass: 6 inches.

END OF SECTION 329119



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.
- B. Related Requirements:
 - 1. Section 329300 "Plants" for trees, shrubs, ground covers, and other plants as well as border edgings and mow strips.

1.3 DEFINITIONS

- A. Finish Grade: Elevation of finished surface of planting soil.
- B. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. They also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.
- C. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. Pests include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.
- D. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth. See Section 329113 "Soil Preparation" and drawing designations for planting soils.
- E. Subgrade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site .



1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For landscape Installer.
- B. Product Certificates: For fertilizers, from manufacturer.

1.6 CLOSEOUT SUBMITTALS

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

1.7 QUALITY ASSURANCE

- A. 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 National Association of Landscape Professionals or AmericanHort.
 - 2. Experience: Five years' experience in turf installation 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 Professionals:
 - a. Landscape Industry Certified Technician - Exterior.
 - b. Landscape Industry Certified Lawn Care Manager.
 - c. Landscape Industry Certified Lawn Care 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. Accompany each delivery of bulk materials with appropriate certificates.

1.9 FIELD CONDITIONS

- A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of Substantial Completion .



1. Spring Planting: April 15 - May 15 .
- B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 SEED MIXES

- A. See Detail Sheet L4.0 for seed mix

2.2 FERTILIZERS

- A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:
 1. Composition: fertilizer to have a ratio of 18 Nitrogen (N) - 24 Phosphorous (P) - 12 Potassium (K)
- B. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:
 1. Composition: fertilizer to have a ratio of 18 Nitrogen (N) - 24 Phosphorous (P) - 12 Potassium (K)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas to be planted for compliance with requirements and other conditions affecting installation and performance of the Work.
 1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
 2. Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
 3. Uniformly moisten excessively dry soil that is not workable or which is dusty.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.



- C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Architect and replace with new planting soil.

3.2 PREPARATION

- A. Protect structures; utilities; sidewalks; pavements; and other facilities, trees, shrubs, and plantings from damage caused by planting operations.
 - 1. Protect adjacent and adjoining areas from hydroseeding and hydromulching overspray.
 - 2. Protect grade stakes set by others until directed to remove them.

3.3 TURF AREA PREPARATION

- A. General: Prepare planting area for soil placement and mix planting soil according to Section 329113 "Soil Preparation."
- B. Placing Planting Soil: Place and mix planting soil in place over exposed subgrade .
- C. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- D. Before planting, obtain Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.4 HYDROSEEDING

- A. Hydroseeding: Mix specified seed, fertilizer , and fiber mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.
 - 1. Mix slurry with fiber-mulch manufacturer's recommended tackifier.
 - 2. Spray-apply slurry uniformly to all areas to be seeded in a one-step process. Apply slurry at a rate so that mulch component is deposited at not less than **1500-lb/acre** dry weight, and seed component is deposited at not less than the specified seed-sowing rate.

3.5 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. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.
 - 1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
 - 2. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement.



3. Apply treatments as required to keep turf and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.
- 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. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
 2. Water turf with fine spray at a minimum rate of **1 inch** per week unless rainfall precipitation is adequate.
- C. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than one-third of grass height. Remove no more than one-third of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain the following grass height:
 1. Mow to a height of **1-1/2 to 2 inches** .

3.6 SATISFACTORY TURF

- A. Use specified materials to reestablish turf that does not comply with requirements, and continue maintenance until turf is satisfactory.

3.7 PESTICIDE APPLICATION

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

3.8 CLEANUP AND PROTECTION

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



3.9 MAINTENANCE SERVICE

END OF SECTION 329200



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. Plants.
 - 2. Tree stabilization.

- 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 329200 "Turf and Grasses" for turf (lawn) and meadow planting, hydroseeding, and erosion-control materials.

1.3 UNIT PRICES

- A. Work of this Section is affected by unit prices specified in Section 012200 "Unit Prices."
- B. Unit prices apply to authorized work covered by quantity allowances.
- C. Unit prices apply to additions to and deletions from the Work as authorized by Change Orders.

1.4 DEFINITIONS

- A. Backfill: The earth used to replace or the act of replacing earth in an excavation.
- B. Balled and Burlapped Stock: Plants dug with firm, natural balls of earth in which they were grown, with a ball size not less than diameter and depth recommended by ANSI Z60.1 for type and size of plant required; wrapped with burlap, tied, rigidly supported, and drum laced with twine with the root flare visible at the surface of the ball as recommended by ANSI Z60.1.
- C. Balled and Potted Stock: Plants dug with firm, natural balls of earth in which they are grown and placed, unbroken, in a container. Ball size is not less than diameter and depth recommended by ANSI Z60.1 for type and size of plant required.



- D. Container-Grown Stock: Healthy, vigorous, well-rooted plants grown in a container, with a well-established root system reaching sides of container and maintaining a firm ball when removed from container. Container shall be rigid enough to hold ball shape and protect root mass during shipping and be sized according to ANSI Z60.1 for type and size of plant required.
- E. Finish Grade: Elevation of finished surface of planting soil.
- F. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. They also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant. Some sources classify herbicides separately from pesticides.
- G. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. Pests include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.
- H. Planting Area: Areas to be planted.
- I. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth. See Section 329113 "Soil Preparation" for drawing designations for planting soils.
- J. Plant; Plants; Plant Material: These terms refer to vegetation in general, including trees, shrubs, vines, ground covers, ornamental grasses, bulbs, corms, tubers, or herbaceous vegetation.
- K. 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.
- L. Stem Girdling Roots: Roots that encircle the stems (trunks) of trees below the soil surface.
- M. Subgrade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.

1.5 COORDINATION

- A. Coordination with Turf Areas (Lawns): Plant trees, shrubs, and other plants after finish grades are established and before planting turf areas unless otherwise indicated.
 - 1. When planting trees, shrubs, and other plants after planting turf areas, protect turf areas, and promptly repair damage caused by planting operations.

1.6 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site .



1.7 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Plant Materials: Include quantities, sizes, quality, and sources for plant materials.
2. Plant Photographs: Include color photographs in digital format of each required species and size of plant material as it will be furnished to Project. Take photographs from an angle depicting true size and condition of the typical plant to be furnished. Include a scale rod or other measuring device in each photograph. For species where more than 5 plants are required, include a minimum of three photographs showing the average plant, the best quality plant, and the worst quality plant to be furnished. Identify each photograph with the full scientific name of the plant, plant size, and name of the growing nursery.

1.8 INFORMATIONAL SUBMITTALS

- ### A. Qualification Data: For landscape Installer. Include list of similar projects completed by Installer demonstrating Installer's capabilities and experience. Include project names, addresses, and year completed, and include names and addresses of owners' contact persons.
- ### B. Product Certificates: For each type of manufactured product, from manufacturer, and complying with the following:
1. Manufacturer's certified analysis of standard products.
 2. Analysis of other materials by a recognized laboratory made according to methods established by the Association of Official Analytical Chemists, where applicable.
- ### C. Sample Warranty: For special warranty.

1.9 CLOSEOUT SUBMITTALS

1.10 QUALITY ASSURANCE

- ### A. 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 Professional Landcare Network or the American Nursery and Landscape Association.
 2. Experience: Five years' experience in landscape installation 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 Professional Landcare Network:
 - a. Landscape Industry Certified Technician - Exterior.
 - b. Landscape Industry Certified Interior.
 - c. Landscape Industry Certified Horticultural Technician.
 5. Pesticide Applicator: State licensed, commercial.



- B. Provide quality, size, genus, species, and variety of plants indicated, complying with applicable requirements in ANSI Z60.1.
 - 1. Selection of plants purchased under allowances is made by Architect, who tags plants at their place of growth before they are prepared for transplanting.
- C. 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. Take height measurements from or near the top of the root flare for field-grown stock and container-grown stock. Measure main body of tree or shrub for height and spread; do not measure branches or roots tip to tip. Take caliper measurements **6 inches** above the root flare for trees up to **4-inch** caliper size, and **12 inches** above the root flare for larger sizes.
 - 2. Other Plants: Measure with stems, petioles, and foliage in their normal position.
- D. Plant Material Observation: Architect may observe plant material either at place of growth or at site before planting for compliance with requirements for genus, species, variety, cultivar, size, and quality. Architect may also observe trees and shrubs further for size and condition of balls and root systems, pests, disease symptoms, injuries, and latent defects and may reject unsatisfactory or defective material at any time during progress of work. Remove rejected trees or shrubs immediately from Project site.
 - 1. Notify Architect of sources of planting materials seven days in advance of delivery to site.

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 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. Accompany each delivery of bulk materials with appropriate certificates.
- C. Do not prune trees and shrubs before delivery. Protect bark, branches, and root systems from sun scald, drying, wind burn, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of plants during shipping and delivery. Do not drop plants during delivery and handling.
- D. Handle planting stock by root ball.



- E. 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.
- F. Deliver plants after preparations for planting have been completed, and install immediately. If planting is delayed more than six hours after delivery, set plants and trees in their appropriate aspect (sun, filtered sun, or shade), protect from weather and mechanical damage, and keep roots moist.
 - 1. Set balled stock on ground and cover ball with soil, peat moss, sawdust, or other acceptable material.
 - 2. Do not remove container-grown stock from containers before time of planting.
 - 3. Water root systems of plants stored on-site deeply and thoroughly with a fine-mist spray. Water as often as necessary to maintain root systems in a moist, but not overly wet condition.

1.12 FIELD CONDITIONS

- A. Field Measurements: Verify actual grade elevations, service and utility locations, irrigation system components, and dimensions of plantings and construction contiguous with new plantings by field measurements before proceeding with planting work.
- B. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with maintenance periods to provide required maintenance from date of Substantial Completion.
 - 1. Spring Planting: March 21 - June 15 .
 - 2. Fall Planting: September 15 - December 1 .
- C. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions and warranty requirements.

1.13 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: From date of planting completion Substantial Completion .
 - a. Trees, Shrubs, Vines, and Ornamental Grasses: 12 months.
 - 3. Include the following remedial actions as a minimum:



- a. Immediately remove dead plants and replace unless required to plant in the succeeding planting season.
- b. Replace plants that are more than 25 percent dead or in an unhealthy condition at end of warranty period.
- c. A limit of one replacement of each plant is required except for losses or replacements due to failure to comply with requirements.
- d. Provide extended warranty for period equal to original warranty period, for replaced plant material.

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 indicated in Plant List, Plant Schedule, or Plant Legend indicated on Drawings and complying with ANSI Z60.1; and with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully branched, healthy, vigorous stock, densely foliated when in leaf and free of disease, pests, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.
 1. 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.
 2. 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. Provide plants of sizes, grades, and ball or container sizes complying with ANSI Z60.1 for types and form of plants required. Plants of a larger size may be used if acceptable to Architect, with a proportionate increase in size of roots or balls.
- C. 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. Root flare shall be visible before planting.

2.2 MULCHES

- A. Organic Mulch: Free from deleterious materials and suitable as a top dressing of trees and shrubs, consisting of one of the following:
 1. Type: Ground or shredded bark .
 2. Size Range: **3 inches** maximum, **1/2 inch** minimum .
 3. Color: Natural.
- B. Compost Mulch: Well-composted, stable, and weed-free organic matter, pH of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through a **1-inch** sieve; soluble-salt content of 2 to 5 dS/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:



1. Organic Matter Content: 50 to 60 <Insert number range> percent of dry weight.

2.3 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.

2.4 MISCELLANEOUS PRODUCTS

- A. Mycorrhizal Fungi: Dry, granular inoculant containing at least 5300 spores per lb of vesicular-arbuscular mycorrhizal fungi and 95 million spores per lb of ectomycorrhizal fungi, 33 percent hydrogel, and a maximum of 5.5 percent inert material.

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities and turf areas and existing plants from damage caused by planting operations.
- B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.



3.3 PLANTING AREA ESTABLISHMENT

- A. General: Prepare planting area for soil placement and mix planting soil according to Section 329113 "Soil Preparation."
- B. Placing Planting Soil: Place manufactured planting soil over exposed subgrade .
- C. Before planting, obtain Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.
- D. Application of Mycorrhizal Fungi: At time directed by Architect, broadcast dry product uniformly over prepared soil at application rate according to manufacturer's written recommendations .

3.4 EXCAVATION FOR TREES AND SHRUBS

- A. Planting Pits and Trenches: Excavate circular planting pits.
 - 1. Excavate planting pits with sides sloping inward at a 45-degree angle. Excavations with vertical sides are unacceptable. Trim perimeter of bottom leaving center area of bottom raised slightly to support root ball and assist in drainage away from center. Do not further disturb base. Ensure that root ball will sit on undisturbed base soil to prevent settling. Scarify sides of planting pit smeared or smoothed during excavation.
 - 2. Excavate approximately three times as wide as ball diameter for balled and burlapped container-grown stock.
 - 3. Do not excavate deeper than depth of the root ball, measured from the root flare to the bottom of the root ball.
 - 4. If area under the plant was initially dug too deep, add soil to raise it to the correct level and thoroughly tamp the added soil to prevent settling.
 - 5. Maintain angles of repose of adjacent materials to ensure stability. Do not excavate subgrades of adjacent paving, structures, hardscapes, or other new or existing improvements.
 - 6. Maintain supervision of excavations during working hours.
 - 7. Keep excavations covered or otherwise protected after working hours .
 - 8. If drain tile is indicated on Drawings or required under planting areas, excavate to top of porous backfill over tile.
- B. Backfill Soil: Subsoil and topsoil removed from excavations may be used as backfill soil unless otherwise indicated.
- C. Obstructions: Notify Architect 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 with free-draining material.
- D. Drainage: Notify Architect if subsoil conditions evidence unexpected water seepage or retention in tree or shrub planting pits.

- E. Fill excavations with water and allow to percolate away before positioning trees and shrubs.

3.5 TREE, SHRUB, AND VINE PLANTING

- A. Inspection: At time of planting, verify that root flare is visible at top of root ball according to ANSI Z60.1. If root flare is not visible, remove soil in a level manner from the root ball to where the top-most root emerges from the trunk. After soil removal to expose the root flare, verify that root ball still meets size requirements.
- B. Roots: Remove stem girdling roots and kinked roots. Remove injured roots by cutting cleanly; do not break.
- C. Balled and Burlapped Stock: Set each plant plumb and in center of planting pit or trench with root flare **1 inch** above adjacent finish grades.
 - 1. Backfill: Planting soil (excavated soil mixed with compost) **<Insert drawing designation> . [For trees, use excavated soil for backfill.]**
 - 2. After placing some backfill around root ball to stabilize plant, carefully cut and remove burlap, rope, and wire baskets from tops of root balls and from sides, but do not remove from under root balls. Remove pallets, if any, before setting. Do not use planting stock if root ball is cracked or broken before or during planting operation.
 - 3. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
 - 4. Place planting tablets equally distributed around each planting pit when pit is approximately one-half filled. Place tablets beside the root ball about **1 inch** from root tips; do not place tablets in bottom of the hole.
 - a. Quantity: Three for each caliper inch of plant .
 - 5. Continue backfilling process. Water again after placing and tamping final layer of soil.
- D. Balled and Potted and Container-Grown Stock: Set each plant plumb and in center of planting pit or trench with root flare **1 inch** above adjacent finish grades.
 - 1. Backfill: Planting soil (excavated soil with compost) .
 - 2. Carefully remove root ball from container without damaging root ball or plant.
 - 3. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
 - 4. Place planting tablets equally distributed around each planting pit when pit is approximately one-half filled. Place tablets beside the root ball about **1 inch** from root tips; do not place tablets in bottom of the hole.
 - a. Quantity: Two per plant .
 - 5. Continue backfilling process. Water again after placing and tamping final layer of soil.
- E. Slopes: When planting on slopes, set the plant so the root flare on the uphill side is flush with the surrounding soil on the slope; the edge of the root ball on the downhill side will be above the surrounding soil. Apply enough soil to cover the downhill side of the root ball.



3.6 TREE, SHRUB, AND VINE PRUNING

- A. Remove only dead, dying, or broken branches. Do not prune for shape.
- B. Do not apply pruning paint to wounds.

3.7 TREE STABILIZATION

- A. Trunk Stabilization by Staking and Guying: Install trunk stabilization as follows unless otherwise indicated on Drawings. Stake and guy trees more than **14 feet** in height and more than **3 inches** in caliper unless otherwise indicated.
 - 1. Site-Fabricated, Staking-and-Guying Method: Install no fewer than three guys spaced equally around tree.
 - a. Securely attach guys to stakes min 7' long, driven to min 3' into grade. Adjust spacing to avoid penetrating root balls or root masses. . Adjust spacing to avoid penetrating root balls or root masses. Provide
 - b. Support trees with bands of flexible ties at contact points with tree trunk and tie/attach to stake . Allow enough slack to avoid rigid restraint of tree.
 - 2. Proprietary Staking and Guying Device: Install staking and guying system sized and positioned as recommended by manufacturer unless otherwise indicated and according to manufacturer's written instructions.

3.8 PLANTING AREA MULCHING

- A. Mulch backfilled surfaces of planting areas and other areas indicated.
 - 1. Trees in Turf Areas: Apply organic mulch ring of **3-inch** average thickness, with **12-inch 36-inch** radius around trunks or stems. Do not place mulch within **3 inches** of trunks or stems.
 - 2. Organic Mulch in Planting Areas: Apply **3-inch** average thickness of organic mulch and over whole surface of planting area, and finish level with adjacent finish grades. Do not place mulch within **3 inches** of trunks or stems.

3.9 PLANT MAINTENANCE

- A. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, adjusting and repairing tree-stabilization devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings.
- B. Fill in, as necessary, soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.
- C. Apply treatments as required to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use integrated pest management practices when possible to minimize use of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.



3.10 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 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 Architect.
- B. Remove and replace trees that are more than 25 percent dead or in an unhealthy condition before the end of the corrections period or are damaged during construction operations that Architect determines are incapable of restoring to normal growth pattern.
 - 1. Provide new trees of same size as those being replaced for each tree of **4 inches** <Insert dimension> or smaller in caliper size.
 - 2. Species of Replacement Trees: Same species being replaced unless otherwise directed by owner.

3.11 CLEANING AND PROTECTION

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

END OF SECTION 329300