



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

# REQUEST FOR PROPOSALS

**Item Description: DESIGN/BUILD MINI-RAMP AT WOONASQUATUCKET ADVENTURE PARK**

**Procurement/MinuteTraq #: 43704**

**Date to be opened: 1/29/2024**

**Issuing Department: Department Of Parks**

## **QUESTIONS**

- Please direct questions related to the bidding process, how to fill out forms, and how to submit a bid (Pages 1-8) to the Purchasing Department.
  - Email: [purchasing@providenceri.gov](mailto:purchasing@providenceri.gov)
    - Please use the subject line “**Solicitation 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
  - Email: [gdiaz@providenceri.gov](mailto: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:
  - Name: Sam Greenwood
  - Title: Landscape Architect
  - Email Address: [sgreenwood@providenceri.gov](mailto:sgreenwood@providenceri.gov)

## **Pre-bid Conference**

There will be a Non-Mandatory Pre-Bid Conference

Date of Pre-Bid Conference: 1/18/2024 Time: 1:00pm

Other details: Meeting will be held Online, request link from [sgreenwood@providenceri.gov](mailto:sgreenwood@providenceri.gov)

[https://teams.microsoft.com/j/1/meetup-join/19%3ameeting\\_MDVmYTJlZGQtZWlyZS00ZjRhLTgxZjgtMzViN2QwZjIhNWl1%40thread.v2/0?context=%7b%22Tid%22%3a%22561baac9-45d8-4ace-90d5-f642ceb985af%22%2c%22Oid%22%3a%222e92a344-1822-4171-877f-23c5461d2f94%22%7d](https://teams.microsoft.com/j/1/meetup-join/19%3ameeting_MDVmYTJlZGQtZWlyZS00ZjRhLTgxZjgtMzViN2QwZjIhNWl1%40thread.v2/0?context=%7b%22Tid%22%3a%22561baac9-45d8-4ace-90d5-f642ceb985af%22%2c%22Oid%22%3a%222e92a344-1822-4171-877f-23c5461d2f94%22%7d)

Meeting ID: 284 290 604 113 Pass code: E4ukfG

## **Deadline for questions submissions:**

**Questions will be due Friday January 19 by 2PM**



**BOARD OF CONTRACT AND SUPPLY  
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**INSTRUCTIONS FOR SUBMISSION**

**Meeting Date: 1/29/2024**

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 Conference Room 305, on the 3<sup>rd</sup> 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 solicitation and bid are related and must include the company name and address on the envelope as well.** (On page 1).
- If required by the Department, please keep the original bid bond and check in only one of the envelopes.
- 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 solicitation. 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.



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**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/ 1<sup>st</sup> page (*see page 6 of this document*)
- Bid Form 2: Certification of Bidder as 2<sup>nd</sup> page (*see page 7 of this document*)
- Bid Form 3: Certificate Regarding Public Records (*see page 8 of this document*)
- Bid Form 4: Affidavit of City Vendor (*see pages 9 and 10 of this document*)
- Forms from the Minority and Women Business Enterprise Program: Based on Bidder Category. See forms and instructions enclosed (*pages 11-112*) 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**  
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**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.)



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**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. Any person signing a bid bond as an attorney-in-fact shall include with the bid bond an original, or a photocopy or facsimile of an original, power of attorney.
  - 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 **nighty (90) 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.



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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



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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



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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





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**BID FORM 4: Affidavit of City Vendor**

Per our Code of Ordinances [Sec. 21.-28.1 \(e\)](#), this form applies to a) the business, b) any political action committee whose name includes the name of the business, c) all persons holding ten (10) percent or greater equity interest or five thousand dollars (\$5,000.00) or greater cash value interest in the business at any time during the reporting period, d) all executive officers of the business entity, e) any spouse or dependent child of any individual identified in a) through d) above.

Executive officers who are not residents of the state of Rhode Island are exempted from this requirement.

Per [R.I.G.L. § 36-14-2](#), "Business" means a sole proprietorship, partnership, firm, corporation, holding company, joint stock company, receivership, trust, or any other entity recognized in law through which business for profit or not for profit is conducted.

Name of the person making this affidavit: \_\_\_\_\_

Position in the "Business" \_\_\_\_\_

Name of Entity \_\_\_\_\_

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

Phone number: \_\_\_\_\_

The number of persons or entities in your entity that are required to report under [Sec. 21.-28.1 \(e\)](#): \_\_\_\_\_

**Read the following paragraph and answer one of the options:**

Within the 12 month period preceding the date of this bid submission with the City of Providence, or with respect to the contracts that are not in writing within the 12 month period preceding the date of notification that the contract has reached the \$100,000 threshold, have you made campaign contributions within a calendar year to (please list all persons or entities required under [Sec. 21.-28.1 \(e\)](#)).

a. Members of the Providence City Council? ☐ Yes ☐ No

- If Yes, please complete the following:

Recipient(s) of the Contribution:

Contribution Date(s):

Contribution Amount(s):

b. Candidates for election or reelection to the Providence City Council? ☐ Yes ☐ No

- If Yes, please complete the following:

Recipient(s) of the Contribution:

Contribution Date(s):

Contribution Amount(s):



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c. The Mayor of Providence? ☐ Yes ☐ No

- If Yes, please complete the following:

Recipient(s) of the Contribution:

Contribution Date(s):

Contribution Amount(s):

d. Candidates for election or reelection to the office of Mayor of Providence? ☐ Yes ☐ No

- If Yes, please complete the following:

Recipient(s) of the Contribution:

Contribution Date(s):

Contribution Amount(s):

\_\_\_\_\_  
Signed under the pains and penalties of perjury.

\_\_\_\_\_  
Position



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**MBE/WBE Participation Plan**

**Please complete separate forms for each MBE/WBE subcontractor/supplier to be utilized on the solicitation.**

Bidder's Name:					
Bidder's Address:					
Point of Contact:					
Telephone:					
Email:					
Procurement #:					
Project Name:					
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? (Check all that apply).	<input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Neither MBE nor WBE				
<p>This form is intended to capture commitments between the prime contractor/vendor and MBE/WBE subcontractors and suppliers, including a description of the work to be performed and the percentage of the work as submitted to the prime contractor/vendor. Please note that all MBE/WBE subcontractors/suppliers must be certified by the Office of Diversity, Equity and Opportunity at the time of bid. The MBE/WBE Directory can be found <a href="#">here</a>. Please visit, the <a href="#">City's MBE/WBE page</a> for details of the program (e.g. instructions and requirements).</p> <ul style="list-style-type: none"><li><b>Nonprofit organizations are not required to complete the rest of this form.</b></li><li><b>Construction projects unable to identify subcontractors prior to bid submission (e.g. Design Build) are required to provide updates to the MBE/WBE Outreach Office</b></li></ul>					
Name of Subcontractor/Supplier:					
Type of RI Certification:	<input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Neither				
Address:					
Point of Contact:					
Telephone:					
Email:					
Detailed Description of Work to Be Performed by Subcontractor or Materials to be Supplied by Supplier Per the Scope of Work provided in the RFP					
Total Contract Value (\$):		Subcontract Value (\$):		Participation Rate (%):	
Anticipated Date of Performance:					
I certify under penalty of perjury that the forgoing statements are true and correct.					
<b>Prime Contractor/Vendor Signature</b>		<b>Title</b>		<b>Date</b>	
<b>Subcontractor/Supplier Signature</b>		<b>Title</b>		<b>Date</b>	

**\*If you did not meet the 20% MBE/WBE combined participation goal, submit a Waiver Request Form.**



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**MBE/WBE Waiver Request Form**

**Fill out this form only if you 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 [gdiaz@providenceri.gov](mailto:gdiaz@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. **In case a waiver is needed, City Department Directors should not** recommend a bidder for an award if this form is not included, absent or is not signed by the city of Providence MBE/WBE director.

Prime Bidder: \_\_\_\_\_ Contact Email and Phone \_\_\_\_\_  
Company Name, Address: \_\_\_\_\_ Trade \_\_\_\_\_  
Project /Item Description (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 Name	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 /  
or Duly Authorized Representative

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Date Signed

\_\_\_\_\_  
Signature of City of Providence  
MBE/WBE Outreach Director /  
or Duly Authorized Representative

\_\_\_\_\_  
Printed Name of City of Providence  
MBE/WBE Outreach Director

\_\_\_\_\_  
Date Signed



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## **BID PACKAGE SPECIFICATIONS**

### **Project Description:**

This is the second phase of converting the former mill site of Lincoln Lace & Braid from a brownfield to an Adventure Park with a wide range of outdoor activities for youths and adults. Phase I included the addition of a bike path, trails, pump track, parkour area & planting. The focus of Phase II is to create a new neighborhood entrance at Barbara St for improved access to the park along with a mini-ramp for bikers and skaters in the lower area (adjacent to the pump track and parkour area). The mini-ramp will require removal of the cap and the creation of a capped berm to redistribute the contaminated soils.

### **Definitions:**

**R&D:** Remove and Dispose, **R&S:** Remove & Stockpile, **F&I:** Furnish & Install

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

- Refine design of Mini-Ramp & submit drawings to Parks Department for review
- R&S existing trees & shrubs for transplant
- F&I tree protection fencing on trees to remain
- R&S 4" topsoil from cap to limits shown
- Sawcut, R&D ex. concrete paving to limits shown
- F&I Shotcrete mini-ramp w/ spine and roller
- F&I safety railings & handrails
- F&I berm on sides of ramp from stockpiled cap material
- F&I thermally modified oak bench
- F&I planting per plant schedule
- Transplant ex. stockpiled trees & shrubs
- Loam & hydroseed all disturbed areas with specified seed mix

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.

Base Bid Items and Unit prices are to be Completed prices to be added or deducted on the basis of quantities of work involved, for each item in place in the unit indicated.



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

\_\_\_\_\_ Dollars

(\$ \_\_\_\_\_), TOTAL BASE BID

**ALLOWANCE:** \$10,000.00

**BASE BID W/ ALLOWANCE:** \$ \_\_\_\_\_

**ADD/ALTERNATES:**

1. Add Alt #1 – Design & Build Pump-Track Interior Area - Per Lump Sum

\_\_\_\_\_ LS \$ \_\_\_\_\_

*price in writing*

2. Add Alt #2 – Furnish & Install DuMor Picnic Table #67-079-68-1TMR on ex. conc pad - Per Lump Sum

\_\_\_\_\_ LS \$ \_\_\_\_\_

*price in writing*

3. Add Alt #3 – Furnish & Install DuMor Picnic Table #67-079-6TMR on ex. conc pad - Per Lump Sum

\_\_\_\_\_ LS \$ \_\_\_\_\_

*price in writing*

4. Add Alt #4 – Furnish & Install DuMor Picnic Table #67-079-6TMR on ex. conc pad - Per Lump Sum

\_\_\_\_\_ LS \$ \_\_\_\_\_

*price in writing*

**UNIT PRICES – BASE BID:**

1. F&I Temporary Tree Protection, complete – Per Linear Foot

\_\_\_\_\_ LF \$ \_\_\_\_\_

*price in writing*

2. F&I Straw Wattle or Silt Sock Erosion Control, complete – Per Linear Foot

\_\_\_\_\_ LF \$ \_\_\_\_\_

*price in writing*

3. Sawcut Existing Concrete Pads – Per Linear Foot

\_\_\_\_\_ LF \$ \_\_\_\_\_

*price in writing*



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**4. R&D 4" Concrete Paving – Per Square Yard**

\_\_\_\_\_ SY \$ \_\_\_\_\_  
*price in writing*

**5. Remove, Stockpile, & Transplant Trees (see sheet L-5 for species & size)– Per Each**

\_\_\_\_\_ EA \$ \_\_\_\_\_  
*price in writing*

**6. Remove, Stockpile, & Transplant Shrubs - Per Each**

\_\_\_\_\_ EA \$ \_\_\_\_\_  
*price in writing*

**7. Remove & Stockpile Trash Receptacle - Per Each**

\_\_\_\_\_ EA \$ \_\_\_\_\_  
*price in writing*

**8. Excavate & Stockpile 4" Topsoil from Existing Cap. – Per Cubic Yard**

\_\_\_\_\_ CY \$ \_\_\_\_\_  
*price in writing*

**9. F&I Shotcrete Mini-Ramp with Roller & Spine, complete – Per Lump Sum**

\_\_\_\_\_ LS \$ \_\_\_\_\_  
*price in writing*

**10. F&I Cast-in-Place Concrete Stairs to Mini-Ramp – Per Square Foot**

\_\_\_\_\_ SF \$ \_\_\_\_\_  
*price in writing*

**11. F&I Steel Pipe Railings for Mini-Ramp & Stairs – Per Linear Foot**

\_\_\_\_\_ LF \$ \_\_\_\_\_  
*price in writing*

**12. F&I Common Borrow – Per Cubic Yard**

\_\_\_\_\_ CY \$ \_\_\_\_\_  
*price in writing*

**13. F&I Berms from Stockpiled Topsoil – Per Cubic Yard**

\_\_\_\_\_ CY \$ \_\_\_\_\_  
*price in writing*

**14. Trimming & Fine Grading – Per Square Yard**

\_\_\_\_\_ SY \$ \_\_\_\_\_  
*price in writing*



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**15. F&I 4" Poured Concrete Pads/Walks – Per Square Foot**

\_\_\_\_\_ **SF**      \$ \_\_\_\_\_  
*price in writing*

**16. F&I DuMor 6' Thermally Modified Red Oak Bench (#34), Surface Mount on ex. Conc pad – Per Each**

\_\_\_\_\_ **EA**      \$ \_\_\_\_\_  
*price in writing*

**17. Install 55 Gal Trash Receptacle from Stockpile – Per Each**

\_\_\_\_\_ **EA**      \$ \_\_\_\_\_  
*price in writing*

**18. Hydroseed all Mowed Areas with Ernst Seed Mix ERNMX186-1 – Per Square Foot**

\_\_\_\_\_ **SF**      \$ \_\_\_\_\_  
*price in writing*

**19. F&I Nyssa sylvatica – 2-2.5" Cal. – Per Each**

\_\_\_\_\_ **EA**      \$ \_\_\_\_\_  
*price in writing*

**20. F&I Aronia melanocarpa 'Lowscape Mound' – #3 Cont. – Per Each**

\_\_\_\_\_ **EA**      \$ \_\_\_\_\_  
*price in writing*

**21. F&I Ilex glabra 'Densa' – 24-30" B&B – Per Each**

\_\_\_\_\_ **EA**      \$ \_\_\_\_\_  
*price in writing*

**22. F&I Ilex verticillata 'Jim Dandy' – #3 Cont. – Per Each**

\_\_\_\_\_ **EA**      \$ \_\_\_\_\_  
*price in writing*

**23. F&I Ilex verticillata 'Red Sprite' – #3 Cont. – Per Each**

\_\_\_\_\_ **EA**      \$ \_\_\_\_\_  
*price in writing*

**24. F&I Carex appalachia – #1 Cont. – Per Each**

\_\_\_\_\_ **EA**      \$ \_\_\_\_\_  
*price in writing*

**25. F&I Carex pensylvanica – #1 Cont. – Per Each**

\_\_\_\_\_ **EA**      \$ \_\_\_\_\_  
*price in writing*





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**26. F&I Dennstaedia punctiloba – #1 Cont. – Per Each**

\_\_\_\_\_ **EA**      \$ \_\_\_\_\_  
*price in writing*

**27. F&I Sporobolus heterolepis – #1 Cont. – Per Each**

\_\_\_\_\_ **EA**      \$ \_\_\_\_\_  
*price in writing*

*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.*

**BIDDER:** \_\_\_\_\_



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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 (6 TOTAL SHEETS):**

<b>L-1</b>	<b>COVER SHEET</b>
<b>L-2</b>	<b>EXISTING CONDITIONS/DEMOLITION PLAN</b>
<b>L-3</b>	<b>GRADING PLAN</b>
<b>L-4</b>	<b>MATERIALS &amp; LAYOUT PLAN</b>
<b>L-5</b>	<b>PLANTING PLAN</b>
<b>L-6</b>	<b>MINI-RAMP &amp; CONSTRUCTION DETAILS</b>

**PREVAILING WAGE DECISION**

**COPY OF THE CONTRACT**

**TECHNICAL SPECIFICATION:**

- **010000**      **GENERAL REQUIREMENTS**
- **015639**      **TEMPORARY TREE AND PLANT PROTECTION**
- **024119**      **SELECTIVE DEMOLITION**
- **031000**      **CONCRETE FORMING & ACCESSORIES**
- **032000**      **CONCRETE REINFORCING**
- **033000**      **CAST-IN-PLACE CONCRETE**
- **033713**      **SHOTCRETE**
- **033900**      **CONCRETE CURING**
- **055213**      **PIPE & TUBE RAILINGS**
- **312000**      **EARTH MOVING**
- **312500**      **EROSION AND SEDIMENTATION CONTROLS**
- **319001**      **CONSTRUCTION ACCESS**
- **321313**      **CONCRETE PAVING**
- **323300**      **SITE FURNISHINGS**
- **329119**      **LANDSCAPE GRADING**
- **329200**      **TURF AND GRASSES**
- **329300**      **PLANTS**
- **329600**      **TRANSPLANTING**

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



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**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 the Purchasing Department, [purchasing@providenceri.gov](mailto:purchasing@providenceri.gov) and **Sam Greenwood, Landscape Architect, [sgreenwood@providenceri.gov](mailto:sgreenwood@providenceri.gov)** , no later than Friday, January 19, 2024.



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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.
- Certificate of Good Standing with the Rhode Island Secretary of State.
- UEI Number – Registration with SAM.gov for receipt of federal (ARPA, CDBG, etc) Funds
- Registrations can be made at <https://usfcr.com/sam-registration/>



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**SUPPLEMENTAL BID FORM**

To whom it may concern:

1. The undersigned, having familiarized (himself) (themselves) (itself) with the **Design/Build Mini-Ramp at Woonasquatucket Adventure Park** 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 3<sup>rd</sup> 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 **Design/Build Mini-Ramp at Woonasquatucket Adventure Park** 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.



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DATE \_\_\_\_\_, 20\_\_

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**



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**APPRENTICE REQUIREMENTS**

Attention of prospective bidders is called to the fact that this project is to be bid upon and executed under the City of Providence Code of Ordinances Chapter 21 Art. II Section 21-28.1 c(1) and (2) related to utilizing apprentices in the contract. This ordinance outlines requirements for utilizing not less than 15% of total hours worked by apprentices. The City may lower this percentage only if it determines in writing that compliance is not feasible or that it would be unduly cost prohibitive to the project. The attention of prospective bidders is also called to the fact that reporting the efforts undertaken and progress towards achieving the requirements in this ordinance is a condition for payment. Compliance reporting shall be submitted with any contract payment requisition, in a format to be specified by the City. This demonstration of compliance through such reports shall be a condition of the requisition for payment to be processed. Upon the contract being awarded to the successful bidder, a mandatory meeting will be scheduled to review the project requirements relative to apprenticeship requirements and the process and protocols by which these goals will be achieved. At this meeting, specific forms and procedures for the documentation and achievement of these requirements by the successful bidder will be provided, discussed and agreed upon for the execution of the contract.

**FIRST SOURCE REQUIREMENTS**

Attention of prospective bidders is called to the fact that this project is to be bid upon and executed under the City of Providence Code of Ordinances Chapter 21 Art. III 1/2 First Source Agreements Sec. 21-91 through 21-96. This ordinance outlines requirements for hiring Providence residents to work on this project. The City may waive this requirement only upon a determination in writing that qualified residents of Providence are not available for the project, pursuant to Sec. 21-94(e). The attention of prospective bidders is called to the fact that reporting the efforts undertaken and progress towards achieving the requirements in this ordinance is a condition for payment. Compliance reporting shall be submitted with any contract payment requisition, in a format to be specified by the City. This demonstration of compliance through such reports shall be a condition of the requisition for payment to be processed. Upon the contract being awarded to the successful bidder, a mandatory meeting will be scheduled to review the project requirements relative to the First Source Agreements and the process and protocols by which these goals will be achieved. At this meeting, specific forms and procedures for the documentation and achievement of these requirements by the successful bidder will be provided, discussed and agreed upon for the execution of the contract.



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**CITY OF PROVIDENCE STANDARD TERMS & CONDITIONS**

1. The terms “you” and “your” contained herein refer to the person or entity that is a party to the agreement with the City of Providence (“the City”) and to such person’s or entity’s employees, officers, and agents.
2. The Request For Proposals (“RFP”) and these Standard Terms and Conditions together constitute the entire agreement of the parties (“the Agreement”) with regard to any and all matters. By your submission of a bid proposal or response to the City’s RFP, you accept these Standard Terms & Conditions and agree that they supersede any conflicting provisions provided by bid or in any terms and conditions contained or linked within a bid and/or response. Changes in the terms and conditions of the Agreement, or the scope of work thereunder, may only be made by a writing signed by the parties.
3. You are an independent contractor and in no way does this Agreement render you an employee or agent of the City or entitle you to fringe benefits, workers’ compensation, pension obligations, retirement or any other employment benefits. The City shall not deduct federal or state income taxes, social security or Medicare withholdings, or any other taxes required to be deducted by an employer, and this is your responsibility to yourself and your employees and agents.
4. You shall not assign your rights and obligations under this Agreement without the prior written consent of the City. Any assignment without prior written consent of the City shall be voidable at the election of the City. The City retains the right to refuse any and all assignments in the City’s sole and absolute discretion.
5. Invoices submitted to the City shall be payable sixty (60) days from the time of receipt by the City. Invoices shall include support documentation necessary to evidence completion of the work being invoiced. The City may request any other reasonable documentation in support of an invoice. The time for payment shall not commence, and invoices shall not be processed for payment, until you provide reasonably sufficient support documentation. In no circumstances shall the City be obligated to pay or shall you be entitled to receive interest on any overdue invoice or payment. In no circumstances shall the City be obligated to pay any costs associated with your collection of an outstanding invoice.
6. For contracts involving construction, alteration, and/or repair work, the provisions of applicable state labor law concerning payment of prevailing wage rates (R.I. Gen. Laws §§ 37-13-1 et seq., as amended) and the City’s First Source Ordinance (Providence Code of Ordinances §§ 21-91 et seq., as amended) apply.
7. With regard to any issues, claims, or controversies that may arise under this Agreement, the City shall not be required to submit to dispute resolution or mandatory/binding arbitration. Nothing prevents the parties from mutually agreeing to settle any disputes using mediation or non-binding arbitration.
8. To the fullest extent permitted by law, you shall indemnify, defend, and hold harmless the City, its employees, officers, agents, and assigns from and against any and all claims, damages, losses, allegations, demands, actions, causes of action, suits, obligations, fines, penalties, judgments, liabilities, costs and expenses, including but not limited to attorneys’ fees, of any nature whatsoever arising out of, in connection with, or resulting from the performance of the work provided in the Agreement.
9. You shall maintain throughout the term of this Agreement the insurance coverage that is required by the RFP or, if none is required in the RFP, insurance coverage that is considered in your industry to be commercially reasonable, and you agree to name the City as an additional insured on your general liability policy and on any umbrella policy you carry.
10. The City shall not subject itself to any contractual limitations on liability. The City shall have the time permitted within the applicable statute of limitations, and no less, to bring or assert any and all causes of action, suits, claims or demands the City may have arising out of, in connection with, or resulting from the performance of the work provided in the Agreement, and in no event does the City agree to limit your liability to the price of the Agreement or any other monetary limit.
11. The City may terminate this Agreement upon five (5) days’ written notice to you if you fail to observe any of the terms and conditions of this Agreement, or if the City believes your ability to perform the





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terms and conditions of this Agreement has been materially impaired in any way, including but in no way limited to loss of insurance coverage, lapsing of a surety bond, if required, declaration of bankruptcy, or appointment of a receiver. In the event of termination by the City, you shall be entitled to just and equitable compensation for any satisfactory work completed and expenses incurred up to the date of termination.

12. Written notice hereunder shall be deemed to have been duly served if delivered in person to the individual or member of the firm or entity or to an officer of the entity for whom it was intended, or if delivered at or sent by registered or certified mail to the last business address known by the party providing notice.
13. In no event shall the Agreement automatically renew or be extended without a writing signed by the parties.
14. You agree that products produced or resulting from the performance of the Agreement are the sole property of the City and may not be used by you without the express written permission of the City.
15. For any Agreement involving the sharing or exchange of data involving potentially confidential and/or personal information, you shall comply with any and all state and/or federal laws or regulations applicable to confidential and/or personal information you receive from the City, including but not limited to the Rhode Island Identity Theft Protection Act, R.I. Gen. Laws § 11-49.3-1, during

the term of the Agreement. You shall implement and maintain appropriate physical, technical, and administrative security measures for the protection of, and to prevent access to, use, or disclosure of, confidential and/or personal information. In the event of a breach of such information, you shall notify the City of such breach immediately, but in no event later than twenty-four (24) hours after discovery of such breach.

16. The Agreement is governed by the laws of the State of Rhode Island. You expressly submit yourself to and agree that any and all actions arising out of, in connection with, or resulting from the performance of the Agreement or relationship between the parties shall occur solely in the venue and jurisdiction of the State of Rhode Island or the federal court located in Rhode Island.
17. The failure of the City to require performance of any provision shall not affect the City's right to require performance at any time thereafter, nor shall a waiver of any breach or default of this Agreement constitute a waiver of any subsequent breach or default or a waiver of the provision itself.
18. If any term or provision of this Agreement, or the application thereof to any person or circumstance shall, in any extent, be invalid or unenforceable, the remainder of this Agreement shall not be affected thereby, and each term and provision shall be valid and enforceable to the fullest extent permitted by law.



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**PREVAILING WAGE**

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, excepts 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 within 30 days of



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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 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



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

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 event 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, as 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 or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.  
(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,





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

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: RI20230001 09/01/2023

Superseded General Decision Number: RI20220001

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:	<ul style="list-style-type: none"> <li>. Executive Order 14026 generally applies to the contract.</li> <li>. The contractor must pay all covered workers at least \$16.20 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 2023.</li> </ul>
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:	<ul style="list-style-type: none"> <li>. Executive Order 13658 generally applies to the contract.</li> <li>. The contractor must pay all covered workers at least \$12.15 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 2023.</li> </ul>

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 <http://www.dol.gov/whd/govcontracts>.

Modification Number	Publication Date
0	01/06/2023
1	01/13/2023
2	02/03/2023
3	03/17/2023
4	04/14/2023
5	05/12/2023
6	06/02/2023
7	06/16/2023
8	06/30/2023
9	08/25/2023
10	09/01/2023

ASBE0006-006 06/01/2023

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).....\$ 39.80 26.05

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

BRRI0003-001 06/01/2022

Rates	Fringes
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Bricklayer, Stonemason,  
 Pointer, Caulker & Cleaner.....\$ 46.86 29.14

BRRI0003-002 09/01/2022

Rates	Fringes
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Marble Setter, Terrazzo  
 Worker & Tile Setter.....\$ 46.54 30.34

BRRI0003-003 09/01/2022

Rates	Fringes
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Marble, Tile & Terrazzo  
 Finisher.....\$ 38.78 29.61



CARP0330-001 06/05/2023

	Rates	Fringes
CARPENTER (Includes Soft Floor Layer).....	\$ 42.78	30.00
Diver Tender.....	\$ 43.78	30.00
DIVER.....	\$ 55.93	30.00
Piledriver.....	\$ 41.53	29.35
WELDER.....	\$ 43.78	30.00

## 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.

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CARP1121-002 01/02/2023

	Rates	Fringes
MILLWRIGHT.....	\$ 41.54	30.73

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ELEC0099-002 06/01/2023

	Rates	Fringes
ELECTRICIAN.....	\$ 48.61	50.44%
Teledata System Installer.....	\$ 36.46	11.59%+15.31

## 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.

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ELEV0039-001 01/01/2023

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 59.36	37.335+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 or 6% basic hourly rate for 6 months to 5 years of service as vacation pay credit.

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 ENGI0057-001 06/01/2023

	Rates	Fringes
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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.....	\$ 45.55	29.45
GROUP 2.....	\$ 43.55	29.45
GROUP 3.....	\$ 39.17	29.45
GROUP 4.....	\$ 36.32	29.45
GROUP 5.....	\$ 42.60	29.45
GROUP 6.....	\$ 33.40	29.45
GROUP 7.....	\$ 27.40	29.45
GROUP 8.....	\$ 39.25	29.45
GROUP 9.....	\$ 43.17	29.45

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.

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ENGI0057-002 05/01/2023

	Rates	Fringes
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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.....	\$ 40.70	29.25
GROUP 2.....	\$ 33.40	29.25
GROUP 3.....	\$ 20.00	29.25
GROUP 4.....	\$ 33.98	29.25
GROUP 5.....	\$ 37.68	29.25
GROUP 6.....	\$ 37.68	29.25
GROUP 7.....	\$ 32.95	29.25
GROUP 8.....	\$ 32.33	29.25
GROUP 9.....	\$ 34.28	29.25

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, econobile, 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

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ENGI0057-003 06/01/2023

#### BUILDING CONSTRUCTION

	Rates	Fringes
Power Equipment Operator		
GROUP 1.....	\$ 44.82	29.90
GROUP 2.....	\$ 42.82	29.90
GROUP 3.....	\$ 42.60	29.90
GROUP 4.....	\$ 38.60	29.90
GROUP 5.....	\$ 35.75	29.90
GROUP 6.....	\$ 41.90	29.90
GROUP 7.....	\$ 41.47	29.90
GROUP 8.....	\$ 38.79	29.90

#### 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

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IRON0037-001 03/16/2023

	Rates	Fringes
IRONWORKER.....	\$ 39.50	32.08

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LAB00271-001 11/27/2022

## BUILDING CONSTRUCTION

	Rates	Fringes
LABORER		
GROUP 1.....	\$ 35.50	26.85
GROUP 2.....	\$ 35.75	26.85
GROUP 3.....	\$ 36.25	26.85
GROUP 4.....	\$ 36.50	26.85
GROUP 5.....	\$ 37.50	26.85

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

## 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

LAB00271-002 11/27/2022

## HEAVY AND HIGHWAY CONSTRUCTION

	Rates	Fringes
LABORER		
COMPRESSED AIR		
Group 1.....	\$ 55.40	24.15
Group 2.....	\$ 52.93	24.15
Group 3.....	\$ 42.45	24.15
FREE AIR		
Group 1.....	\$ 44.05	24.15
Free Air		
Group 1.....	\$ 46.00	24.15
FREE AIR		
Group 2.....	\$ 43.05	24.15
Free Air		
Group 2.....	\$ 45.00	24.15
FREE AIR		
Group 3.....	\$ 40.50	24.15
Free Air		
Group 3.....	\$ 42.45	24.15
LABORER		
Group 1.....	\$ 35.50	24.85
Group 2.....	\$ 35.75	24.85
Group 3.....	\$ 36.50	24.85
Group 4.....	\$ 29.00	24.85
Group 5.....	\$ 37.50	24.85
OPEN AIR CAISSON, UNDERPINNING WORK AND BORING CREW		
Bottom Man.....	\$ 41.50	24.15
Top Man & Laborer.....	\$ 35.60	24.15
TEST BORING		
Driller.....	\$ 41.95	24.15
Laborer.....	\$ 41.95	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

#### 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 06/01/2023

	Rates	Fringes
PAINTER		
Brush and Roller.....	\$ 37.62	22.85
Epoxy, Tanks, Towers, Swing Stage & Structural Steel.....	\$ 39.62	22.85
Spray, Sand & Water Blasting.....	\$ 40.62	22.85
Taper.....	\$ 38.37	22.85
Wall Coverer.....	\$ 38.12	22.85

-----  
PAIN0011-006 06/01/2022

	Rates	Fringes
GLAZIER.....	\$ 40.78	23.40

FOOTNOTES:

SWING STAGE: \$1.00 per hour additional.

PAID HOLIDAYS: Labor Day & Christmas Day.

-----  
PAIN0011-011 06/01/2023

	Rates	Fringes
Painter (Bridge Work).....	\$ 56.25	23.45

-----  
PAIN0035-008 06/01/2011

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

-----  
PLAS0040-001 06/05/2023

BUILDING CONSTRUCTION

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 42.77	29.63

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 07/01/2023

HEAVY AND HIGHWAY CONSTRUCTION

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 37.45	24.85

-----  
PLAS0040-003 06/05/2023

	Rates	Fringes
PLASTERER.....	\$ 42.77	29.63

-----  
\* PLUM0051-002 08/28/2023

	Rates	Fringes
Plumbers and Pipefitters.....	\$ 50.59	32.75

-----  
ROOF0033-004 08/01/2023

	Rates	Fringes
ROOFER.....	\$ 50.03	33.69

-----  
SFRI0669-001 04/01/2023

	Rates	Fringes
SPRINKLER FITTER.....	\$ 47.55	32.27

-----  
SHEE0017-002 12/01/2020

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

-----  
TEAM0251-001 05/01/2023

HEAVY AND HIGHWAY CONSTRUCTION

	Rates	Fringes
TRUCK DRIVER		
GROUP 1.....	\$ 29.71	34.602+A+B
GROUP 2.....	\$ 29.86	34.602+A+B
GROUP 3.....	\$ 29.91	34.602+A+B
GROUP 4.....	\$ 29.96	34.602+A+B
GROUP 5.....	\$ 30.06	34.602+A+B
GROUP 6.....	\$ 30.46	34.602+A+B
GROUP 7.....	\$ 30.66	34.602+A+B
GROUP 8.....	\$ 30.16	34.602+A+B
GROUP 9.....	\$ 30.41	34.602+A+B
GROUP 10.....	\$ 30.21	34.602+A+B

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)).

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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.

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#### 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"

## CONSTRUCTION AGREEMENT

This Construction Agreement (“Agreement”) is made and entered into as of this \_\_\_\_ day of \_\_\_\_\_ 2023 by and between the **City of Providence Board of Park Commissioners**, having an address of The Dalrymple Boathouse, Roger Williams Park, 1000 Elmwood Ave., Providence, RI (“City”) and **[Contractor Name]**, having an address of **[Contractor Address]** (“Contractor”).

### WITNESSETH:

WHEREAS, the **[Park Name]** is located at **[Park Address]**. The City plans to make improvements to the park under the **[RFP Name]** project (the “Project”), as detailed in the Request for Proposals (“RFP”) issued by the City on **[RFP Date]** (attached and incorporated by reference as Exhibit A); and

WHEREAS, the Contractor proposed to handle the Project, as detailed in a responsive bid opened on **[bid opening date]** (attached and incorporated by reference as Exhibit B); and

WHEREAS, the Board of Contract and Supply awarded the contract to the Contractor, pursuant to the Board’s Memorandum dated **[award letter date]** (attached and incorporated by reference as Exhibit C).

NOW, THEREFORE, in consideration of the mutual covenants and agreements contained in this Agreement, the Parties agree as follows:

1. **SELECTION.** The City hereby selects the Contractor to provide construction services outlined in its **[bid opening date]** submission.
2. **TERM.** The term of this agreement shall be from and after the date of execution through completion of the Project, which shall be not later than **[completion date]**.
3. **TERMS OF PAYMENT.** The total amount of the awarded contract is **[contract amount]**. The City shall make a good-faith effort to pay the Contractor within sixty (60) days of receipt of a pay requisition for work completed and accepted, less retainage.
4. **COMPENSATION.** The Contractor shall be paid according to the breakdown contained in its bid package.
5. **MERGER AND INTEGRATION.** The procurement documents prepared and issued for purposes of this Project, including the RFP, the bid submitted by Contractor, and any other documents referenced in or attached to this Agreement, are hereby incorporated in and form a part of this Agreement; provided, however, that to the extent those documents differ or contradict the terms of this Agreement, this Agreement shall control.

6. **INDEMNIFICATION AND LIABILITY.** The Contractor is alone responsible for the safety, efficiency, and adequacy of the construction and for any damage which may result from improper construction, maintenance, or operation. The Contractor shall indemnify, defend, and hold harmless the City, and its employees, representatives, agents, successors and assigns (the "City Indemnified Parties") from and against any and all demands, claims, suits, cause or cause of action, whether at law or in equity, costs, expenses and attorneys' fees and any liability whatsoever to anyone for any bodily injury or property damage resulting from or arising out of the willful misconduct or negligent acts or omissions of the Contractor and/or its employees, representatives, subcontractors, and agents in the performance of this Agreement.
7. **RETAINAGE:** The City shall retain 5% of all pay requests paid during the Project. When the City and/or its representatives deem the Project as "Substantially Complete," or 85% of the work has been completed, the retainage may be reduced to 2.5% for the work completed. The final payment will be released when all the work has been completed, inspected, and approved by the City's representative and all closeout documents, warranties and as-built plans have been received and approved by the City.
8. **INSURANCE.** The Contractor is required to carry liability insurance in the amount of not less than one million dollars (\$1,000,000) per million dollars (\$2,000,000) general aggregate and shall furnish an insurance certificate naming the City of Providence, and the Commissioners, and the Providence Public Buildings Authority as named insureds on a primary but non-contributing basis for C
9. **BINDING EFFECT.** This Agreement and all the covenants and conditions herein contained shall inure to the benefit of and bind the heirs, successors and assigns of the parties. Neuter pronouns shall be read as masculine or feminine, and words in the singular person as plural, if the nature or number of the parties require.
10. **GOVERNING LAW.** This Agreement is entered into pursuant to and shall be governed by and construed in accordance with the laws of the State of Rhode Island.
11. **NATURE OF RELATIONSHIP.** Nothing in this Agreement shall create a partnership, joint venture, trust or other fiduciary relationship between the Contractor and the City.
12. **AMENDMENTS AND SUPPLEMENTS.** The Contractor and the City may amend, modify, supplement, or waive any provisions of this Agreement in such manner as may be agreed upon by the Parties in a written instrument executed by both Parties.

Skolnik, Suzannah  
2023-07-05 16:47:00

Skolnik, Suzannah  
2023-07-05 16:41:00

The PPBA should be listed here only if it is listed on the Notice to Proceed.

13. MBE/WBE. The parties acknowledge that the City sets an MBE goal of 10% and a WBE goal of 10%, and the Contractor will make good faith efforts to comply with these goals.
14. TERMINATION. The City may terminate this Agreement at any time upon ninety (90) days prior written notice. This Agreement may be terminated by either party if the other party materially breaches any provision of this Agreement and fails to cure the material breach within 30 days after receiving notice thereof from the non-breaching party. Without limiting the City's right to terminate this Agreement, the City may suspend the Contractor's right to access the Project upon any actual, threatened, or suspected breach of this Agreement.
15. COUNTERPARTS. This Agreement may be executed in multiple counterparts, each of which shall constitute an original, but all of which shall constitute one document.

IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed as of the date first above written.

CITY OF PROVIDENCE:

By: \_\_\_\_\_  
Brett P. Smiley, Mayor

Approved as to form and correctness:

\_\_\_\_\_  
Jeff Dana, City Solicitor

CONTRACTOR:

By: \_\_\_\_\_  
[Contractor name and title]

EXHIBIT A: RFP

EXHIBIT B: Bid

EXHIBIT C: Board of Contract and Supply Memorandum dated [award letter date]

EXHIBIT D: ARPA Amendment



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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

### 1.2 PROJECT LOCATION

- A. Glenbridge Ave & Barbara 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 conditions.

## 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. 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. 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.
- B. Related Requirements:
  - 1. Section 024119 - Selective Demolition

#### 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, groups of 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 defined by a circle concentric with each tree with a radius 1.5 times the diameter of the drip line unless otherwise indicated .
- 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. Product Data: For each type of product.

## 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. Organic Mulch: Free from deleterious materials and suitable as a top dressing for 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. - no orange or dyed mulch.
- C. 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.
  - 2. Tree Trunk Protection: 2"x3" or 2"x4" softwood lumber wrapped around tree with wire ties or strapping

## 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.
- B. Tree-Protection Zones: Mulch areas inside tree-protection zones and other areas indicated. Do not exceed indicated thickness of mulch.
  - 1. Apply **2-inch** uniform thickness of organic mulch unless otherwise indicated. Do not place mulch within **6 inches** of tree trunks.

### 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. Maintain protection zones free of trash.
- C. 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. 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.
- C. 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. Raising Grade: Where new finish grade is indicated above existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.
- D. Minor Fill within Protection Zone: Where existing grade is **2 inches** or less below elevation of finish grade, fill with 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. Excess Mulch: Rake mulched area within protection zones, being careful not to injure roots. Rake to loosen and remove mulch that exceeds a 2-inch <insert dimension> uniform thickness to remain.
- D. 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 Requirements, 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.

#### 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's Representative 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. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
  3. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."
- B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
1. Strengthen or add new supports when required during progress of selective demolition.
- C. 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.

### 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. Bituminous 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.
- D. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, and then break up and remove.

### 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 031000 - CONCRETE FORMING AND ACCESSORIES

### PART 1 - PART 1 - GENERAL

#### 1.1 DESCRIPTION:

- A. Provide formwork and accessories for construction of cast-in-place concrete work.

#### 1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 032000-Concrete Reinforcement
- B. Section 033000-Cast-in-Place Concrete
- C. Section 033713-Shotcrete
- D. Section 055213-Pipe & Tube Railings

#### 1.3 QUALITY ASSURANCE:

- A. Design Criteria: Conform to ACI 347, Chapter I.
- B. Allowable Tolerances: Conform to ACI 347, 2.4.

#### 1.4 STORAGE OF MATERIALS:

- A. Store materials on and under protective sheeting.

#### 1.5 COORDINATION:

- A. Notify responsible trades of schedules of concrete pours to allow time for installation and coordination.

### PART 2 - PART 2 - PRODUCTS

#### 2.1 MATERIALS:

- A. Forms:



1. Flatwork: Nominal 2" thick No. 2 Common Southern Yellow Pine or steel forms.
- B. Form Oil: Non staining, paraffin-base oil having a specific gravity of between 0.8 and 0.9.
- C. Form Ties: Bolts, rods, or patented devices having tensile strength of 3000 lbs., adjustable length, free of lugs which would leave a hole larger than 5/8" diameter and having a full one-inch depth of break-back.

### PART 3 - PART 3 - EXECUTION

#### 3.1 CONSTRUCTION AND ERECTION:

- A. Construct forms in accordance with ACI 347.
- B. Build forms to shapes, lines and dimensions of detailed members of concrete construction. Set to line and grade, brace and secure to withstand placing of concrete and maintain their shape and position.
- C. Construct forms with care to produce concrete surfaces without unsightly or objectionable form marks in exposed concrete surfaces.
- D. Thoroughly clean surfaces of form material and remove nails before reuse. Do not reuse damaged or worn forms. Coat contact surfaces of forms with non-staining form oil prior to placing metal reinforcement.
- E. Immediately before placing concrete, clean forms of chips, sawdust, and debris. Immediately after removal of forms, remove form ties, wires, and defects and patch.

#### 3.2 INSERTS AND ACCESSORIES:

- A. Make provisions for required installation of accessories, bolts, hangers, sleeves, anchor slots and inserts cast in concrete. Obtain suitable templates or instructions for installation of items. Place expansion joints where detailed and required.

#### 3.3 REMOVAL OF FORMS AND SHORING:

- A. Remove forms and shores in accordance with ACI 347.

#### 3.4 CLEANUP:

- A. Remove debris and trash.

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END OF SECTION 031000



## SECTION 032000 - CONCRETE REINFORCING

### PART 1 - PART 1 - GENERAL

#### 1.1 DESCRIPTION:

- A. Provide steel reinforcement for cast-in-place concrete.

#### 1.2 RELATED WORK SPECIFIED ELSEWHERE:

- A. Section 031000-Concrete Formwork
- B. Section 033000-Cast-in-Place Concrete
- C. Section 033713-Shotcrete
- D. Section 055213-Pipe & Tube Railings

#### 1.3 DELIVERY AND STORAGE:

- A. Stack reinforcing steel in tiers. Mark each length, size, shape and location. Maintain reinforcement free of dirt, mud, paint or rust.

#### 1.4 REFERENCE STANDARDS:

- A. American Concrete Institute (ACI):
  - 1. ACI 315, Manual of Standard Practice for Detailing Reinforced Concrete Structures.
  - 2. ACI 318, Building Code Requirements for Reinforced Concrete.
- B. American Society for Testing and Materials (ASTM - latest editions):
  - 1. ASTM A233, Mild Steel Arc Welding Electrodes.
  - 2. ASTM A615, Deformed Billet-Steel Bars for Concrete Reinforcement.
  - 3. ASTM A706, Low-Alloy Steel Deformed Bars for Concrete Reinforcement.
- C. Concrete Reinforcing Steel Institute (CRSI): Manual of Standard Practice, latest edition.
- D. American Welding Society (AWS): Reinforcing Steel Welding Code, D12.1, including latest revisions.



1.5 SUBMITTALS:

- A. Shop Drawings: Indicate complete reinforcing method for each concrete member including materials, sizes, bends, dimensions, stirrup spacing, and placing details not shown on drawings.

PART 2 - PART 2 - PRODUCTS

2.1 MATERIALS:

- A. Steel Reinforcement: Deformed billet steel, ASTM A615, Grade 60. Minimum 75% Recycled Product.
- B. Welded Steel Reinforcement: Deformed low-alloy steel, ASTM A706, carbon content not exceeding 0.30% and manganese content not exceeding 0.60%. Identify and tag with manufacturer's heat identification number.

2.2 FABRICATION:

- A. Fabricate to sizes, shapes, and lengths detailed in accordance with requirements of ACI 318 and ACI 315.

PART 3 - PART 3 - EXECUTION

3.1 INSTALLATION:

- A. Accurately place reinforcing steel in accordance with drawings. Thoroughly clean reinforcement of any coating which would reduce bonding. Do not heat, cut, or bend bars without Landscape Architect/Engineer's approval. Do not splice reinforcement at points of maximum stress. Stagger splices in adjacent bars and provide a minimum overlap of 30-bar diameters at splices unless specifically noted otherwise on Drawings.
- B. Securely saddle tie intersections with No. 18 ga. black annealed wire. Rigidly secure reinforcement in place. Provide concrete coverage as shown on Drawings.

3.2 WELDING REINFORCEMENT:

- A. Weld deformed steel reinforcement bars in strict accordance with AWS 12.1, using recommended pre-heat temperature and electrode for type of steel being welded.
- B. Do not weld steel reinforcement bars without proper heat identification of bars.



3.3 CLEANUP:

- A. Remove debris and trash resulting from specified work.

END OF SECTION 032000



## SECTION 033000 - CAST-IN-PLACE CONCRETE

### PART 1 - PART 1 – GENERAL

#### 1.1 RELATED INFORMATION

- A. 031000-Concrete Formwork
- B. 032000-Concrete Reinforcement
- C. 033713-Shotcrete
- D. Section 055213-Pipe & Tube Railings

#### 1.2 SUBMITTALS:

##### A. Design of Concrete Mixes:

1. Contractor shall be responsible for and pay for design of concrete mixes. Design of concrete mixes shall be performed by a Testing Laboratory selected by Contractor. Design methods to be in accordance with ACI 318.
2. Make three trial mixes using aggregate proposed.
3. Make advance tests of trial mixes with proposed materials. Test four cylinders in accordance with ASTM C-39 at 7 days and 28 days. Do not place concrete on project until laboratory reports and breaks of confirmation cylinders indicate that proposed mixes will develop required strengths.
4. Check mix design and revise, if necessary, wherever changes are made in aggregate or in surface water content of aggregate or workability of concrete. Slump shall be the minimum to produce workable mix. Laboratory shall prescribe minimum quantity of water.
5. If Portland Cement reducers or other additives are used, submit control mix design without reducers or additives as well as mix exactly proposed to be used. Submit recommendations for retarder and shrinkage compensation of slab on grade.
6. Sample of Workmanship: Provide onsite, minimum 48"x48" sample (not part of finished project) for flatwork.
7. Forward two copies of design mix to Skate Park Landscape Architect/Engineer for approval.



1.3 COORDINATION:

- A. Notify responsible trades of schedules of concrete pours so as to allow adequate time for installation of work and inspection prior to pour. Obtain all materials and other miscellaneous steel items to be cast into concrete. Verify all measurements and layout to avoid any delay.

1.4 QUALITY ASSURANCE

- A. Concrete Testing
  - 1. Prepare samples by each application crew using the equipment, materials and mix proportions proposed for the Project.
- B. Acceptance: Final acceptance of the cast-in-place concrete will be based upon Skate Park Architect's approval.
- C. Regulatory Requirements: Meet requirements of applicable laws, codes, and regulations required by authorities having jurisdiction over Work.
- D. Contractor Samples:
  - 1. Samples shall be completed to the satisfaction of the aggregates, texture, color, and finishes to Landscape Architect. These samples will become the standard of quality by which future paving samples and work will be judged.
  - 2. Samples to remain on-site and be protected during the course of construction, as a means to compare work in progress.
- E. Concrete Manufacturer Qualifications: Manufacturer of ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.
- F. Contractor Experience: Provide evidence to indicate successful experience in providing cast-in-place concrete work for skate parks similar in scope to that specified herein and can demonstrate successful experience through past project documentation and references.
- G. Required Experience: Contractor or Subcontractor must have completed (3) public concrete skate park facilities in the last 5 years. Parks must be open and in good operating condition for at least one year.
- H. Evidence of Experience: Contractor or Subcontractor shall submit to Skate Park Architect satisfactory documentation of the aforementioned experience and qualification. If a Contractor cannot provide this information or if it is unverifiable, work under this Section and any other related Section cannot be completed by Contractor. This submission must contain the Project Name & Location, Owner's Name & Contact Information, Architect Name & Contact Information, Project Size, Contract Value, Completion Date, and Supervisor and/or Key Personnel responsible for this experience for each of the qualifying projects.





- I. Safety and Performance Guidelines: Comply with all safety and performance requirements and all applicable references as specified in the ASTM F2480 Standard Guide for In-ground Skate Parks.

1.5 REFERENCE STANDARDS:

- A. ACI 211.1 - Recommended Practice for Selecting Proportions for Normal-Weight Concrete.
- B. ACI 211.3 - Recommended Practice for Selecting Proportions for Lightweight Concrete.
- C. ACI 301 - Specifications for Structural Concrete for Buildings.
- D. ACI 305 - Recommended Practice for Hot Weather Concreting.
- E. ACI 306 - Recommended Practice for Cold Weather Concreting.
- F. ACI 318 - Building Code Requirements for Reinforced Concrete.
- G. ASTM - Concrete Aggregates.
- H. ASTM - Ready-Mixed Concrete.
- I. ASTM C143 - Test for Slump of Portland Cement Concrete.
- J. ASTM C150 - Portland Cement.
- K. ASTM C260 - Air-Entraining Admixtures for Concrete.
- L. ASTM C494 - Chemical Admixtures for Concrete.
- M. ASTM C618 - Fly Ash and Raw or Calcined Natural Pozzalans for Use in Portland Cement Concrete.

1.6 JOB CONDITIONS:

- A. Environmental Conditions: Submit plan to monitor wind velocity, relative humidity, temperature, and concrete temperature in order to maintain specified maximum rate of evaporation.
- B. Coordination:
  1. Coordinate schedules of concrete pours to allow adequate time for installation of other related work.
  2. Verify that anchor bolts and other embedded steel items to be cast into concrete are properly placed.



3. Coordinate size and location of mechanical and electrical equipment concrete pads.
4. Coordinate earthwork requirements with placement requirements.
5. Coordinate with form-work and finishes sections to provide finish floor levelness and flatness as specified herein. Slope to drains at grades and percent slope shown on contract documents.

## PART 2 - PART 2 – PRODUCTS

### 2.1 MATERIALS:

- A. Portland Cement: ASTM C-150, Type II.
- B. Fine Aggregate: Clean, hard, durable, uncoated natural sand, free from silt, loam or clay, meeting requirements of ASTM C-33.
- C. Coarse Aggregate: Class II-Hard durable, un-coated crushed meeting requirements of ASTM C-33. Unless otherwise noted in aggregate size 3/4" minimum, No. 5, 56 or 57.
- D. Water: Potable.
- E. Admixture: Cement-dispersing, water-reducing compound, ASTM C-494, Type A, as made by Master Builders, Sika, or Gifford-Hill Co., or equal. Depending upon weather conditions at time of placing, ASTM C-494, Type D (water-retarding) or Type E (water-reducing, accelerating) may be used if approved by Owner's representative.

### 2.2 PROPORTIONS AND MIXING:

- A. Proportions and Design: In accordance with approved mix design.
  1. Min. All. Comp. Strength (28 days):
  2. 4000 PSI
- B. Admixture: No admixtures without approval. Introduce admixtures in quantities and according to methods recommended by admixture manufacturer. Add air-entraining agent to concrete as scheduled.
- C. Slump: Not to exceed 3 1/2"
- D. Mixing: Ready mixed concrete in accordance with ASTM C-94. Do not transport or use concrete after 1-1/2 hours have elapsed from time of initial mixing. Supplier of transit-mixed concrete shall have a plant of sufficient capacity, and adequate transportation facilities to assure continuous delivery at required rate, to provide continuous concrete placement throughout a pour.



- E. Grout and Dry Pack: Non-Shrink, Non-Metallic: U.S. Grout Corp. "Five Star Grout" ASTM C-877, C-191, and C-109, 5,000 PSI.

## 2.3 CURING MATERIALS:

- A. Water: Domestic Quality, clear and potable with no chemical content.
- B. Sheet Material: ASTM C171. Moisture loss maximum .055 g/ cm sq. Color: White.
- C. Curing Compounds: Cure/ Seal: Curecrete Ashford Formula or equal.

## PART 3 - PART 3 – EXECUTION

### 3.1 INSPECTION:

- A. Inspect subgrade, forms, reinforcing steel, pipes, conduits, sleeves, hangers, anchors, inserts, and other work required to be built into concrete and report any discrepancies. Notify City's Representative at least 5 working days in advance of scheduled pour.
- B. Correct unsatisfactory work prior to pouring concrete.
- C. Remove rubbish from formwork immediately prior to placing concrete.

### 3.2 INSTALLATION:

- A. Placing Concrete:
  - 1. Convey and place concrete allowing no separation of ingredients in accordance with ACI 304 and as specified below.
  - 2. Maximum height of concrete free fall: five-feet.
  - 3. Regulate rate of placement to maintain plasticity and flow into position.
  - 4. Deposit concrete continuously until panel or section is completed.
  - 5. Place concrete in horizontal layers 18" maximum thickness.
- B. Consolidation:
  - 1. Use mechanical vibrating equipment for consolidation.
  - 2. Vertically insert and remove hand-held vibrators at 18" o.c. for 10 to 15 seconds.
  - 3. Do not use vibrators to transport concrete in forms.
  - 4. Provide vibrators with minimum speed of 8000 RPM and with amplitude to consolidate effectively.
  - 5. Thoroughly consolidate concrete and work around reinforcement, embedded items and into corners of forms. Thoroughly consolidate layers of concrete with previous layers.



C. Construction Joints:

1. Unless otherwise shown on Drawings, each footing, wall, beam, and slab shall be considered as a single unit of operation and shall be monolithic in construction.
2. Where construction joints are absolutely unavoidable, locate joints at or near quarter points of spans where approved by City's Representative and/or shown on plan.
3. Saw Cut joints, Expansion Joints and Key Joints as detailed in contract documents.

D. Expansion Joint Fillers:

1. Refer to Drawings for Expansion Joint locations and details.
2. Finish joint material flush with concrete surface.
3. Finish:
  - a. Smooth Trowel. (See sample requirements under submittals).
4. Cracking:
  - a. Cracking from inadequate curing is not allowed. Sawcut joints and construction joints are shown on drawings. Contractor may, with approval of City's Representative, recommend and detail other joints required to prevent cracking.

3.3 CLEAN UP:

- A. Clean all debris, excess concrete and miscellaneous material associated with work.

END OF SECTION 033000



## SECTION 033713 - SHOTCRETE

### PART 1 - PART 1 – GENERAL

#### 1.1 SCOPE

- A. Provide sprayed-on concrete (concrete conveyed into place by air pressure through a
- B. flexible tube or gun with controlled nozzle) referred to herein as shotcrete, complete as shown and as specified by skate park specialty contractor.

#### 1.2 RELATED INFORMATION

- A. 031000-Concrete Formwork
- B. 032000-Concrete Reinforcement
- C. 033000-Cast-In-Place Concrete
- D. Section 055213-Pipe & Tube Railings

#### 1.3 QUALITY ASSURANCE

- A. Standards: Comply with the requirements of the current edition of the following codes and standards, except as herein modified:
- B. IBC-International Building Code
- C. American Concrete Institute (ACI): 506, Chapter 13, Wet Method. Chapter 5, Shotcrete Crew.
- D. American Society for Testing Materials (ASTM):
  - 1. Concrete Testing:
    - a. Prepare test specimens by each application crew using the equipment, materials and mix proportions proposed for the Project. Owner's Representative shall observe preparation of test panels noting placement of shotcrete by applications crew.
    - b. Test panel shall be at least 48 in. x 48 in. with the same reinforcement as in the structure. (Specimens shall be 6 in. thick. A Testing Agency shall take at least three (3) cores from the specimen and test them in accordance with ASTM C42).
  - 2. Secure production samples of materials at plants and stockpiles during construction and test for compliance with Specifications.



3. Test strength of the shotcrete as work progresses as follows:
  - a. Cut cores from the structure and test in accordance with ASTM C42. A set of three (3) cores shall be taken not less than once each shift nor less than one for each 50 cubic yards of shotcrete placed through the nozzle. Cores shall be soaked in water for a minimum of 40 hours before testing.
  - b. When the length of a core is less than twice the diameter, apply the correction factors given in ASTM C42 to obtain the compressive strength of individual cores. The average compressive strength of three cores taken from the structure, representing a shift or 50 cubic yards of shotcrete, must equal or exceed 0.85fc with no individual core less than 0.75fc.

- E. Acceptance: Final acceptance of the shotcrete will be based upon the results obtained from cores. Use of data obtained from impact devices will not be permitted for final acceptance of the shotcrete. However, these data may be useful for determining uniformity of the shotcrete.

#### 1.4 QUALITY ASSURANCE

- A. Concrete Testing: Prepare samples by each application crew using the equipment, materials and mix proportions proposed for the Project.
- B. Acceptance: Final acceptance of the shotcrete will be based upon Skate Park Architect's approval.
- C. Regulatory Requirements: Meet requirements of applicable laws, codes, and regulations required by authorities having jurisdiction over Work.
- D. Contractor Samples:
  1. Contractor shall prepare a sample for each slab type indicated on Drawings, prior to installation.
  2. Samples shall be completed to the satisfaction of the aggregates, texture, color, and finishes to Skate Park Architect.
  3. These samples will become the standard of quality by which future paving samples and work will be judged.
  4. Samples to remain on-site and be protected during the course of construction, as a means to compare work in progress.
- E. Concrete Manufacturer Qualifications: Manufacturer of ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.
- F. Contractor Experience: Provide evidence to indicate successful experience in providing cast-in-place concrete work for skate parks similar in scope to that specified herein and can demonstrate successful experience through past project documentation and references.



- G. Required Experience: Contractor or Subcontractor must have completed (3) public concrete skate park facilities in the last 5 years. Parks must be open and in good operating condition for at least one year.
- H. Evidence of Experience: Contractor or Subcontractor shall submit to Skate Park Architect satisfactory documentation of the aforementioned experience and qualification. If a Contractor cannot provide this information or if it is unverifiable, work under this Section and any other related Section cannot be completed by Contractor. This submission must contain the Project Name & Location, Owner's Name & Contact Information, Architect Name & Contact Information, Project Size, Contract Value, Completion Date, and Supervisor and/or Key Personnel responsible for this experience for each of the qualifying projects.
- I. Safety and Performance Guidelines: Comply with all safety and performance requirements and all applicable references as specified in the ASTM F2480 Standard Guide for In-ground Skate Parks.
- J. ACI Requirements: Meet all requirements of ACI 506, Chapter 13, Wet Method and Chapter 5, Shotcrete Crew.

#### 1.5 SUBMITTALS

- A. Manufacturer's Data: Current printed specifications with application and installation instruction for proprietary materials including concrete admixtures.
- B. Shop Drawings: Section and plan views showing all proposed construction joints.
- C. Mix Design: Concrete mix proportions.
- D. Concrete Samples: Representative samples of materials for materials testing, mix proportion testing, and finish. Provide on site, minimum (1) 48"x48" sample (not part of finished project) of shotcrete transition (7.5' Radius).

#### 1.6 DELIVERY, HANDLING, AND STORAGE

- A. Properly deliver and handle materials to prevent contamination, segregation or damage to materials.
- B. Store cement in weather tight enclosures to protect against dampness and contamination.
- C. Prevent segregation and contamination of aggregates by proper arrangement and use of stockpiles.
- D. Store admixtures properly to prevent contamination, evaporation, or other damage.





## PART 2 - PART 2 - PRODUCTS

### 2.1 CONCRETE MATERIALS

- A. Portland Cement: ASTM C150, Type I or II, one brand only.
- B. Fly Ash: ASTM C618
- C. Normal Weight Aggregates: ASTM C33 and as herein specified.
  - 1. Batch fine coarse aggregates separately to avoid segregation.
  - 2. Aggregates shall be free from clay, mud, loam, or other deleterious substances.
  - 3. Dune sand, bank run sand, and manufactured sand are not acceptable for fine aggregate.
  - 4. Coarse aggregate shall be clean, uncoated, heavy media processed aggregate of crushed stone or river washed aggregate.

### 2.2 ACCESSORIES

- A. Water: Fresh, clean, potable, and free of deleterious acids, mixing, and curing water, as available from Owner. Transport as required.
- B. Admixtures: Use only accepted admixtures meeting the following requirements:
  - 1. Chemical Admixtures: ASTM C494
  - 2. Air-entraining Admixtures: ASTM C260
- C. Expansion Joints: See Cast-In-Place Concrete - Section 033000.

### 2.3 PROPORTIONING AND DESIGN OF CONCRETE MIXES

- A. Mix: Prepare design mix to achieve an in-place 28 day compressive strength of 4,000 pounds per square inch. Maximum aggregate size shall not exceed 3/8 inch. Unit weight of in-place shotcrete shall be 494 pounds per cubic yard. Use an independent Testing Agency acceptable to the Owner's Representative to prepare and report the proposed mix design.
- B. Test Data: Submit for acceptance proportioning and test data from prior experience if available. If data from prior experience are not available or accepted, make and have tested specimens from three or more different mix proportions in accordance with pre-construction testing requirements of this Specification.
- C. Strength: Selected mix proportions on the basis of compressive strength tests of specimens shall be cut from the shotcreted test panels not earlier than 5 days after shotcreting. For mix acceptance purposes, average core strengths shall be least equal to  $f_c$  for cores with L/D of 2.0. For cores with L/D between 1.0 and 2.0, use correction factors given in ASTM C42.





- D. Review: Mix design shall be reviewed for acceptance by Owner's Representative.

## 2.4 CONCRETE APPLICATION EQUIPMENT

### A. For Wet Mix Shotcrete:

1. Mixing Equipment: Capable of thoroughly mixing aggregate, cement and water in sufficient quantity to maintain continuous placement.
2. Ready-mixed Concrete: ASTM C94, except that it may be delivered to the site in the dry state if the equipment is capable of adding the water and mixing it satisfactorily with the dry ingredients.
3. Air Supply: Clean air adequate for maintaining sufficient nozzle velocity for parts of work, and for simultaneous operation of blow pipe for cleaning away rebound.
4. Delivery Equipment: Capable of discharging aggregate-cement-water mixture accurately, uniformly, and continuously through delivery hose.

## PART 3 - PART 3 -EXECUTION

### 3.1 INSPECTION

- A. Examination: Examine concrete formwork and verify that it is true to line and dimension, adequately braced against vibration, and constructed to permit escape of air and rebound but to prevent mortar leakage during shotcreting. Correct deficiencies.
- B. Inspection: Inspect reinforcement steel and items to be embedded in concrete. Correct any deviations from the accepted shop drawings.
- C. Notification: Notify other trades involved in ample time to permit the proper installation of their work. Cooperate in setting such work.
- D. Existing Surfaces: Examine existing concrete surfaces for unsound material. Correct deficiencies.

### 3.2 PREPARATION FOR INSTALLATION OF CONCRETE

- A. Forms: Use a form-coating material on removable forms to prevent absorption of moisture and to prevent absorption of moisture and to prevent bond with shotcrete.



### 3.3 CONCRETE BATCHING AND MIXING

- A. Proportions: Mix proportions shall be controlled by weight batching. Contractor's Testing Laboratory shall maintain quality control records during shotcrete production and make those records available to Owner's Representative.

### 3.4 CONCRETE PLACEMENT

- A. Placement: Use suitable delivery equipment and procedures that will result in shotcrete in place meeting the requirements of this Specification. Determine operating procedures for placement in, extended distances, and around any obstructions where placement velocities and mix consistency must be adjusted.
- B. Placement Techniques: Do not place shotcrete if drying or stiffening of the mix takes place at any time prior to delivery to the nozzle.
  - 1. Control thickness, method of support, air pressure, and/or water content of shotcrete to preclude sagging or sloughing off. Discontinue shotcreting or provide suitable means to screen the nozzle stream if wind or air currents cause separation of the nozzle stream during placement.
  - 2. Hold nozzle as perpendicular to surface as work will permit, to secure maximum compaction with minimum rebound.
  - 3. In shotcreting walls, begin application at bottom. Ensure work does not sag.
  - 4. Layering:
    - a. Build up layers by making several passes of nozzle over work area.
    - b. Broom or scarify the surface of freshly placed shotcrete to which, after hardening, additional layers of shotcrete are to be bonded. Dampen surface just prior to application of succeeding layers.
    - c. Allow each layer of shotcrete to take initial set before applying succeeding layers.
    - d. Use radial templates to insure exact radii from flat bottom of skate park, deck and coping. Template shall be fabricated from steel or 3/4" Plywood. Contractor to submit shop drawing for all templates to be used on the project.
  - 5. Placement Around Reinforcement:
    - a. Hold the nozzle at such distance and angle to place materials behind reinforcement before any material is allowed to accumulate on its face. In the dry-mix process, additional water may be added to the mix when encasing reinforcement to facilitate a smooth flow of material behind the bars.
    - b. Test to ascertain if any void or sand pockets have developed around or behind reinforcement by probing with an awl or other pointed tool after the shotcrete has achieved its initial set, by removal of randomly selected bars, or coring or other suitable standards.



### 3.5 REMOVAL OF SURFACE DEFECTS IN CONCRETE

- A. General: Remove and replace shotcrete which lacks uniformity, exhibits segregation honeycombing, or lamination, or which contains any dry patches, slugs, voids, or pockets. Remove defective areas.
- B. Sounding: Sound work with hammer for voids. Remove and replace damaged in-place shotcrete.

### 3.6 CONCRETE FINISH

- A. Form Finish: Smooth form finish shall consist of a smooth, hard, uniform texture with a minimum of seams.
- B. Unformed Finish: Float finish on unformed face of wall shall consist of a smooth, hard, uniform surface of smooth steel trowel. level to a tolerance of 1/10 inch in 10 feet when tested with a 10-foot steel straightedge placed on the surface horizontally, and vertically with radial template with the appropriate radii.

### 3.7 CONCRETE JOINTS

- A. Cleaning: The entire joint shall be thoroughly cleaned and wetted prior to the application of additional shotcrete.
- B. Reinforcement: Make joints perpendicular to the main reinforcement. Continue reinforcement across joints.

### 3.8 STEEL COPING

- A. Steel coping for skatepark shall be no higher than 3/8 inch and no less than 1/4 inch from concrete surface.
- B. Steel coping shall be level.

### 3.9 CONCRETE CURING AND PROTECTION

- A. Initial Curing: Immediately after finishing, keep shotcrete continuously moist for at least 24 hours. Use one of the following materials or methods:
  - 1. Ponding or continuous sprinkling.
  - 2. Cover and keep continuously wet.



- B. Final Curing: Provide additional curing immediately following the initial curing and before the shotcrete has dried. Use one of the following materials or methods:
1. Continue the method used in initial curing.
  2. Materials conforming to "Specifications for Sheet Materials for Curing Concrete", (ASTM C 171).
- C. Duration of Curing: Continue for the first 7 days after shotcreting or until specified strength is obtained. During the curing period, maintain shotcrete above 40 degrees and in a moist condition. Prevent rapid drying at the end of the curing period.

END OF SECTION 033713



## SECTION 033900 - CONCRETE CURING

### PART 1 - PART 1 - GENERAL

#### 1.1 DESCRIPTION

- A. Provide curing material for cast-in-place concrete flatwork, and shotcrete walls (radial and angled) for the Action Sports Facility.

#### 1.2 RELATED WORK

- A. Section 031100: Concrete Formwork
- B. Section 033000: Cast-In-Place Concrete
- C. Section 033713: Shotcrete

#### 1.3 DELIVERY AND STORAGE

- A. Deliver materials in original sealed containers with seal and labels intact. Store in dry place. Use materials out of original containers only.

### PART 2 - PRODUCTS

#### 2.1 MATERIALS

- A. Plastic Protector: Cover concrete with polyethylene plastic to maintain temperature and hydration if necessary. Utilize insulated concrete blankets for cold weather curing.

### PART 3 - EXECUTION

#### 3.1 CURING

- A. Curing Method: During the curing period, the concrete shall be maintained in moist condition. For initial curing, concrete shall be kept continuously moist for 24 hours after placement is complete. Final curing shall continue for seven days after placement.
- B. CLEANUP



1. Remove debris and trash resulting from specified work.

END OF SECTION 033900



## SECTION 055213 - PIPE AND TUBE RAILINGS

### PART 1 - PART 1 - GENERAL

#### 1.1 REFERENCES

- A. A.The General Documents, as listed on the Table of Contents, and applicable parts of Division 1, GENERAL REQUIREMENTS, shall be included in and made a part of this Section.
- B. Examine all Drawings and all other Sections of the Specifications for requirements therein affecting the work of this trade.
- C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

#### 1.2 SCOPE

- A. The work of this Section consists of all work and related items as indicated on the Drawings and/or specified herein and includes, but is not limited to, the following:
  - 1. Barbara Street ramp handrail
  - 2. Skateboard rail
  - 3. Bench coping
  - 4. Skatepark handrail
  - 5. Skatepark coping

#### 1.3 RELATED WORK

- A. Examine all Drawings and all other Sections of the Specifications for requirements affecting the work described below.

#### 1.4 SUBMITTALS

- A. Request for Deviations from the Specifications: If any deviations from the specifications are proposed, include written description and reasons for deviations.
- B. Shop Drawings: Prior to ordering the below listed materials, submit Shop Drawings and/or product literature to the City Representative for approval as follows:
  - 1. Coordinated Shop Drawings shall show required sizes, dimensions, sections, profiles of units, the arrangement of and provision for jointing, anchoring, fastening, and supports,



and other necessary details for delivery and lifting devices and reception or installation of other work.

2. Show in large scale details any unique fabrication and setting requirements for wall veneers, caps, bases, special wall end conditions, or any other specified areas seen as necessary or as directed by the City Representative.
3. Do not order materials until approval has been obtained from the City Representative.
  - a. Steel railing – Shop Drawings.
  - b. Non-shrinking epoxy grout—Product literature
  - c. Exterior metal primer and paint—Product literature and color charts.

C. Construction and Fabrication of Samples:

1. Contractor shall construct and/or fabricate samples for the following items in accordance with approved Shop Drawings:
  - a. Steel railing - minimum one panel including posts.
  - b. All fabricated samples shall be complete-in-place. The quality of workmanship shall be approved by the City's Representative before any permanent construction is started. If the original sample is not approved, the Contractor shall provide additional samples as required, at no increased cost to the City, until an approved sample is obtained. The approved sample shall become the standard for the entire job. The samples can be constructed at a location that will become part of the finished work.
  - c. Obtain approval of samples by City Representative before proceeding with the final work.
  - d. If the first samples are not approved, the Contractor shall provide additional samples until an approved sample is obtained for each of the above at no additional charge to the City.
  - e. If approved, the sample shall become part of the final work.

D. Contractor shall submit a notarized certificate of compliance to the City Representative from the galvanizer with all galvanizing and color galvanizing requirements including ASTM number and weight of coatings in ounces per square foot. Certificate of compliance shall also contain the following:

1. Sole Source Responsibility: Include statement that galvanizer accepts sole source responsibility for coatings under this Section. Galvanizer who does not accept this responsibility is not acceptable and will be rejected.
2. Quality Assurance: Include evidence that galvanizer meets requirements of ANSI Q90.
3. Certification of Compliance with Current Environmental Regulations: Galvanizer shall certify that coatings proposed for use comply with applicable environmental regulations. Contractor and galvanizer shall be responsible for penalties assessed by governmental or environmental authorities for coatings which do not comply with current environmental regulations. All coatings shall be lead-free.





## 1.5 QUALITY ASSURANCE

- A. Source Limitations: Provide products of the same kind, from a single source.
- B. Compatibility of Options: When the Contractor is given the option of selecting between two or more products for use on the Project; the product selected shall be compatible with products previously selected, even if previously selected products were also options.

## 1.6 PRODUCT HANDLING AND STORAGE

- A. Take all necessary precautions to prevent items from chipping, cracking, or other damage during the transportation of materials to the project, unloading and storage on the site. Do not use pinch or wrecking bars without protecting edges and surfaces. Lift with wide-belt type slings or vacuum lifts wherever possible; do not use wire rope or ropes containing tar or other substances that might cause staining. If required, use wood rollers and provide cushion at end of wood slides. Damaged items shall not be installed, and should any damaged items be found in constructed work, such items shall be removed immediately and replaced, and the Contractor shall assume all expenses incurred therefrom.

## 1.7 EXAMINATION OF CONDITIONS

- A. A.The Contractor shall fully inform himself/herself of existing conditions of the site and shall be fully responsible for carrying out all work required to fully and properly execute the work of the Contract, regardless of the conditions encountered in the actual work. No claim for extra compensation or extension of time will be allowed on account of actual conditions inconsistent with those assumed.
- B. The Contractor shall be solely responsible for judging the potential need for storing materials temporarily and/or re-handling items prior to final installation.

## 1.8 STANDARDS

- A. Except as modified by governing code and by the Contract Documents, comply with applicable provisions and recommendations of the following:
  - 1. RIDOT Standard Specifications for Road and Bridge Construction, latest edition
  - 2. City of Providence DPW Standard Construction Details
  - 3. AASHTO: American Association of State Highway and Transportation Officials, latest edition
  - 4. ASTM: American Society for Testing and Materials, latest edition
  - 5. ADA: Americans with Disabilities Act, latest edition



## 1.9 QUALIFICATIONS

- A. Site improvement work shall be assigned to experienced and qualified subcontractors with a minimum of five years experience employing experienced workmen who will work under the full-time supervision of a qualified foreman with a minimum of five years of experience on projects comparable to this project. Submit references for subcontractors for approval by the City Representative.

## 1.10 ACCESSIBILITY CODES AND BUILDING CODES

- A. From time to time there are changes made in the Federal and /or State accessibility and building codes or it is determined that different codes are applicable to a site. Such determinations or changes may occur during the course of the construction of this project. If changes become necessary to meet codes a change order shall be issued by the City to cover statutory requirements.

## PART 2 - PART 2 - PRODUCTS

### 2.1 RAILING

- A. Railings shall be fabricated from solid bar stock steel conforming to the requirements of ASTM A36 latest edition and from tubular stock steel ASTM A500 Type B latest edition, and shall be hot-dipped galvanized. Sizing as shown on the Drawings.
- B. Steel pipe shall be tubular stock standard steel pipe conforming to ASTM A53 latest addition nominal sizes as detailed. Sizing as shown on the Drawings. All tubular stock shall be hot dipped galvanized.
- C. Steel hardware, handrail fittings, post caps, extruded rail shapes, and accessories shall be fabricated from steel conforming to ASTM A307 requirements. Aluminum items shall be cast from Almag 35. All hardware and accessories shall be steel unless they are not available in steel.
- D. Steel materials: All steel including hardware shall be hot-dipped galvanized. Provide steel chemically suitable for metal coatings with the following requirements: carbon below 0.25 percent, silicon below 0.24 percent, phosphorous below 0.05 percent, and manganese below 1.35 percent. Notify galvanizer if steel does not comply with these requirements to determine suitability for processing.
- E. Fabrication: Comply with requirements of ASTM A 143, ASTM A 384 and ASTM A 385. Fabricator shall submit shop drawings of non-standard fabrications, all tubular fabrications, all fabrications involving any dimension which exceeds the size of the galvanizer's kettle and any fabrication involving materials of different thicknesses to the galvanizer prior to fabrication to determine the suitability of the material for the specified metal coating.



1. Tubular steel for railings: To prevent unnecessary damage to the galvanized coating by field welding, provide slip-fit method of connecting pipe railings. Fabricate pipe railing from mechanical steel tubing internally vented with holes 3/4 the size of the pipe's internal diameter.
  2. Assemblies: Where size of assembly is too large for galvanizing kettle, galvanize components prior to fabrication and assemble after galvanizing.
- F. Surface appearance: Contractor shall be responsible for surface defects due to manufacture or fabrication of steel components. Contractor shall provide materials with acceptable appearance and smoothness, as judged solely by the City's Representative. Contractor shall be required to grind or blast raw materials or fabrications prior to galvanizing. Do not apply finish coatings over galvanizing until surface appearance is acceptable to the City Representative.
- G. All exterior metal, including hardware, shall be color galvanized after fabrication with "Colorgalv" by Duncan Galvanizing, Everett, MA (617) 389-8440 or approved equal. Color shall be lusterless black and submitted for approval by the City Representative.
1. Sole-source responsibility: To maintain quality control and responsibility for performance of metal coatings, Contractor shall assign galvanizing and metal coatings specified in this Section to a single galvanizer. Galvanizer shall meet requirements of ANSI Q90.
  2. All material to be COLORGALVED shall be hot dip galvanized in conformance with ASTM 123, 153, or 386 as applicable, in a bath of molten nickel zinc (Nigalv by Duncan Metal Galvanizing).
  3. All hot dip galvanized material shall be coated by the galvanizer in his own facility. Following cleaning and prior to the application of the prime and finish coats, material shall be visually inspected to determine complete absence of contaminants.
  4. Following galvanizing and prior to COLORGALVING the hot dip galvanized steel shall be prime coated using PRIMEGALV by Duncan Galvanizing, applied to a minimum DFT of 2.0 mils.
  5. COLORGALV shall be factory applied by conventional or airless spray, one coat, with a dry film thickness of 2.5 mils minimum. This shall be applied over clean, dry Primergalved steel, as per manufacturer's recommendations.
  6. Galvanizer shall submit a written 20-year warranty, agreeing to repair color system finish.
  7. Contractor shall provide touch-up paint from the galvanizer and as recommended to do touch-up painting and to paint galvanized hardware that does not receive color galvanize at the factory.
- H. Grout shall be non-shrinking, non-metallic, non-staining, such as Hallenite "Por-Rok," Sonneborn "SonogROUT," Penn Dixie, or Master Builders, or approved equal.



## 2.2 STEEL COPING

- A. Steel coping shall be black, cold-rolled, carbon steel, schedule 40, steel pipe, per ASTM A53 non-galvanized Type S, Grade A or B. Shape and sizing as shown on the Drawings
- B. Welded steel anchors at a minimum shall be cold rolled black steel rod or bolts. Rebar is not acceptable
- C. Fabrication: Fabricator shall submit shop drawings of tubular and non-standard fabrications.

## PART 3 - PART 3 - EXECUTION

### 3.1 RAILINGS

- A. Fabricate and install overlook railings, as shown on the Drawings and in conformance with approved Shop Drawings.
- B. Coordinate location and installation of steel railings as shown on the Drawings and as directed by the City Representative. Railings shall be set plumb and in the proper alignment. All handrails shall be "Colorgalved" after fabrication as specified.
- C. Workmanship and finish shall be equal to the best practice of modern shops for each item of work. Exposed surfaces shall have smooth finish and sharp, well defined lines and arises. Sections shall be well formed to shape and size with sharp lines and angles; curved work shall be sprung evenly to curves. Welding shall be in accordance with the Welding Code of the American Welding Society. All welding, except as otherwise indicated, shall extend the entire length of joints. All welded face joints shall be ground flush and smooth. All welds shall be water tight. Ornamental metalwork shall be cut, drilled, countersunk and tapped as required for the attachment of other work where shown on Drawings or when instructions for such work are given on the Shop Drawings. Ornamental metalwork to be built in with concrete or masonry shall be of the form required for anchorage or shall be provided with suitable anchors or expansion shields.
- D. Steel fabrication shall be accomplished using the highest standards of workmanship. Individual steel pieces shall be saw cut and carefully fit together. All connections shall be full welded and ground flush and smooth. All fabricated steel items shall be fine sanded throughout to produce a high standard of surface smoothness. All surfaces and connections shall be without visible grinding marks, surface differentiation or variation.
- E. All material that is specified to be galvanized and color galvanized shall be hot-dipped galvanized after fabrication, as specified.
- F. Galvanized surfaces damaged by welding or other causes shall be wire brushed to remove all loose or cracked zinc coating and re-galvanized with a 95 percent zinc cold galvanizing coating



prior to finishing with approved touch-up paint provided by the color galvanizer as specified, herein.

G. Galvanizing:

1. Coordination of Shop Drawing Submittals: For items requiring fabrication, fabricator shall certify that they have submitted Shop Drawings to galvanizer for approval prior to fabrication in order to determine suitability for galvanizing.
2. Galvanizing Application: Galvanize materials in accordance with specified requirements. Galvanizing shall provide a visually acceptable substrate for applied coatings, and be free of lumps, globules or heavy deposits which will interfere with intended use or aesthetic appearance of materials.
3. Metal Coating Application: Apply metal coatings in accordance with specified requirements and recommendations of galvanizer and coating manufacturer. Metal coatings shall be free of lumps, runs or sags which will interfere with intended use or aesthetic appearance of materials.
4. Installation: Install materials, fabrications and assemblies in accordance with requirements of Sections in which they are specified. Comply with fabricator's and Galvanizer's requirements for installation, including use of nylon slings or padded cables for handling factory-primed or factory-finished materials.
5. Touch-up and Repair: For damaged and field-welded metal-coated surfaces, clean welds, bolted connections and abraded areas.
  - a. At galvanized surfaces, apply organic zinc repair paint. Galvanizing repair paint shall have 95 percent zinc by weight. Touch-up with aerosol sprays is not acceptable.
  - b. At factory-primed or factory-finished surfaces, touch up finish in conformance with coating manufacturer's recommendations. Provide touch-up such that repair is not visible from a distance of six feet.
6. Protection: Protect materials, fabrications and assemblies with metal coatings from damage during construction using methods approved by fabricator, galvanizer and coating manufacturer.

3.2 STEEL COPING

- A. Steel coping anchors shall not be placed within 2 inches of surface of concrete to avoid cracking and rust broadcast

END OF SECTION 055213



## SECTION 312000 - EARTH MOVING

### PART 1 - PART 1 GENERAL

#### 1.1 SCOPE

- A. Furnish labor, materials, and equipment for grading and construction work shown in the construction drawings.

#### 1.2 RELATED SECTIONS

- A. Section 024113: Site Demolition
- B. Section 312002: Sub-grade Preparation & Base Material

#### 1.3 REFERENCES AND STANDARDS

- A. Work shall comply with the rules and regulations of local, state and federal agencies having jurisdiction. Nothing contained herein shall be construed as permitting work that is contrary to such rules, regulations and codes.
- B. ASTM Standards.

#### 1.4 SOILS REPORT

- A. There are no Geo Technical / Soils Reports provided for this project.

#### 1.5 PROJECT CONDITIONS

- A. Existing Conditions: The existing topographic conditions are shown in construction drawings for reference only. Upon beginning the earthwork, the Contractor represents that he has inspected the site and satisfied himself as to actual grades and levels and the true conditions under which the work is to be performed. Promptly notify the Client of unexpected subsurface conditions.
- B. Protection:
  - 1. Protect excavations by shoring, bracing, sheeting, underpinning, or other methods, as required to prevent cave-ins or loose dirt from entering excavations. Barricade open excavations at work adjacent to public streets and walks.





2. Maintain bench marks, monuments, and other reference points. If disturbed or destroyed, replace as directed.
3. Protect existing berms and slopes from disruption. If slopes are disturbed, return to existing conditions at no additional cost to the Client.
4. Underpin adjacent structure(s), including utility service lines, which may be damaged by excavation operations.
5. Protect existing natural areas and landscape improvements from damage.
6. Promptly repair damage to adjacent facilities caused by earthwork operations. Cost of repair at the Contractor's expense.

## PART 2 - MATERIALS

### 2.1 FILL FOR USE UNDER PAVING AND STRUCTURES

- A. Per Geo-Technical Report (if one is available).

### 2.2 PLANTING SOIL FOR PLANT BACKFILL

- A. Native soil tilled and free of noxious weeds and chemicals.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Establish extent of grading and excavation by area and elevation. Designate and identify datum elevation and Project engineering reference points. Set required lines, levels and elevations.

### 3.2 EXISTING UTILITIES

- A. Before starting grading and excavation, establish the location and extent of underground utilities in the work area. Exercise care to protect existing utilities during earthwork operations. Perform excavation work near utilities by hand and provide necessary shoring, sheeting, and supports as the work progresses.
- B. Maintain, protect, relocate, or extend, as required, existing utility lines to remain which pass through the work area. Pay costs for this work, except as covered by the applicable utility companies.
- C. Protect active utility services uncovered by excavation. Notify respective utility companies of damage caused to active utilities immediately.



- D. Remove abandoned utility service lines from areas of excavation. Cap, plug, or seal abandoned lines and identify termination points at grade level with markers.
- E. Accurately locate and record abandoned and active utility lines rerouted or extended on the as-built construction documents.

### 3.3 GENERAL SITE GRADING

- A. Perform grading within contract limits, including adjacent transition areas, to new elevations, levels, profiles, and contours indicated. Provide uniform levels and slopes between new elevations and existing grades.
- B. Spread approved fill material uniformly in layers not greater than 12" of loose thickness over entire fill zones of planting areas.
  - 1. Lift thickness requirements may be modified by the Client to suit equipment and materials or other conditions when required to assure satisfactory compaction.
  - 2. Place and compact each layer of fill to 95% standard proctor, before placing additional fill material. Repeat filling until proposed grade, profile or contour is attained.
  - 3. Grade surfaces to assure positive drainage and to prevent ponding and pockets of surface drainage. Install drainage swales as indicated in construction drawings.
  - 4. Protect finish graded areas from traffic and erosion. Keep free of trash and debris. Repair and reestablish grades in settled, eroded and damaged areas.

### 3.4 FINISH GRADING

- A. Grade uniformly with rounded surfaces at tops and bottoms of abrupt changes in plane. Hand grade steep slopes, areas that are inaccessible for machine work and areas around existing plants.
- B. Slope graded surfaces to drain water away from structures, walls, etc.; minimum slope is 1/4 inch in 12 inches .
- C. Grade areas to elevation and slopes indicated without depressions causing pocketing of surface water or humps, producing localized runoff and gullying. Ponding of water on site is not allowed.

### 3.5 DRAINAGE

- A. Provide drainage of the working area at all times.





### 3.6 DISPOSAL OF WASTE MATERIALS

- A. Legally dispose excess excavated material, including rock from site.

### 3.7 CLEANING

- A. Upon completion of earthwork operation, clean areas within contract limits, remove tools and equipment.
- B. Provide site clear, clean, free of debris and suitable for site work operations.
- C. Remove and dispose of properly off site all rocks and other debris from grading operations.

END OF SECTION 312000



## 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.
- B. Related Sections:
  - 1. Section 329119 - Landscape Grading.

#### 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 319001 - CONSTRUCTION ACCESS

### PART 1 - PART 1 – GENERAL

#### 1.1 RELATED INFORMATION

- A. 31 25 00 - Erosion and Sedimentation Controls
- B. 31 90 02 – Maintenance and Cleaning of Erosion, Sediment and Pollution Prevention

#### 1.2 SCOPE:

- A. This work includes providing stabilized stone pads located at points of vehicular and equipment ingress and egress to and from construction sites to prevent tracking out sediment. Install all erosion, sediment, and pollution prevention controls and devices before the start of excavation when required by the RIDOT SWPPP/SESC. RIDOT Blue Book Section 907 addresses dust control to reduce dust nuisance and hazards.

#### 1.3 REFERENCE STANDARDS:

- A. Rhode Island Department of Transportation Standard Specifications for Road and Bridge Construction (December 2022). (RIDOT Blue Book).

### PART 2 - PART 2 – PRODUCTS

#### 2.1 MATERIALS:

- A. Provide crushed stone that conforms to RIDOT Blue Book Subsection M01.09, Table I, Column II.
- B. Provide geosynthetic materials that conform to RIDOT Blue Book Subsection 206.02.2.

### PART 3 - PART 3 – EXECUTION

#### 3.1 INSTALLATION:

- A. Clear the area of the construction accesses of all vegetation, roots, stumps, or other objectionable material. Excavate the area to subgrade and grade the area. Place geosynthetic



material on the prepared subgrade before the placement of the stone pad according to the specified dimensions.

- B. Install stabilized stone pads for use as construction entrances at location shown on plans.
- C. Dimensions:
  - 1. Thickness. Ensure that the thickness of the stabilized stone pad is a minimum of 5 in.
  - 2. Width. Ensure that the width is not less than the full width of the respective points of ingress or egress.
  - 3. Length. Provide a length for construction accesses that is at least 50 ft where the soils are sands or gravels, except where the traveled length is less than 50 ft. Where soils are clays or silts, provide a length for construction accesses that is at least 100 ft, except where the traveled length is less than 100 ft.

### 3.2 CLEAN UP:

- A. Clean the public roads adjacent to a construction site of any sediment and debris at the end of each day. RIDOT Blue Book Section 211 identifies an area where sediment can be removed from the tires or tracks of construction vehicles and equipment before the vehicles and equipment enter a public road. Use construction accesses in conjunction with the stabilization of construction roads to reduce the sediment tracked out by construction vehicles and equipment.

END OF SECTION 319001



## SECTION 321313 - CONCRETE 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 Concrete Paving Including the Following:
  - 1. Walks
  - 2. Ramps
  - 3. Pads for Benches & Trash Receptacles.
  - 4. Pad for Conex box storage container
- 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. Samples for Initial Selection: For each type of product, ingredient, or admixture requiring color selection.





- C. 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. Fiber reinforcement and reinforcement accessories.
  3. Aggregate
  4. Admixtures.
  5. Curing compounds.
  6. Applied finish materials.
  7. 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").
- B. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
1. Build mockups of full-thickness sections of concrete paving to demonstrate typical joints; surface finish, texture, and color; curing; and standard of workmanship.
  2. Build mockups of concrete paving in the location and of the size indicated or, if not indicated, build mockups where directed by Architect and not less than 24" x 60" .
  3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
  4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.



## 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. Color Pigment: ASTM C 979/C 979M, synthetic mineral-oxide pigments or colored water-reducing admixtures; color stable, free of carbon black, nonfading, and resistant to lime and other alkalis.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by the following:
    - a. Brickform; a division of Solomon Colors.
  - 2. Color: Sterling UMX-140 .
- E. Water: Potable and complying with ASTM C 94/C 94M.

## 2.4 FIBER REINFORCEMENT

- A. Synthetic Fiber: Monofilament polypropylene fibers engineered and designed for use in decorative concrete paving, complying with ASTM C 1116/C 1116M, Type III, **1/2 to 1-1/2 inches** long.
- B. GFRC Glass Fiber: 200-400 individual glass filaments which are lightly bonded to make up a stand

## 2.5 CURING MATERIALS

- A. Absorptive Cover: AASHTO M 182, Class 3, burlap cloth made from jute or kenaf, weighing approximately **9 oz./sq. yd.** dry or cotton mats.



- B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- C. Water: Potable.

## 2.6 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**.



## 2.7 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-Fine-Textured Broom Finish: Draw a soft-bristle broom across float-finished concrete surface, perpendicular to line of traffic, to provide a uniform, fine-line texture.

### 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: **1/8 inch**.





2. Thickness: Plus  $\frac{3}{8}$  inch, minus  $\frac{1}{4}$  inch.
3. Surface: Gap below 10-feet- long; unlevelled straightedge not to exceed  $\frac{1}{2}$  inch.
4. Joint Spacing: 3 inches.
5. Contraction Joint Depth: Plus  $\frac{1}{4}$  inch, no minus.
6. Joint Width: Plus  $\frac{1}{8}$  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 323300 - SITE FURNISHINGS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Seating.
  - 2. Tables.
  - 3. Trash receptacles.

#### 1.3 ACTION SUBMITTALS

- A. A. Manufacturer's Literature: Submit copies of each of manufacturer's material descriptions, dimensions, details, and installation instructions for the following. Submit manufacturer's material descriptions for primer coat and finish coat.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Complete Shop Drawings for the installation of 6' bench with back
- B. Complete Shop Drawings for the installation of ADA picnic table
- C. Complete Shop Drawings for the installation of 6' picnic table with benches
- D. Complete Shop Drawings for the installation of trash receptacle with metal hood

#### 1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For site furnishings to include in maintenance manuals.
- B. The Contractor shall furnish and deliver standard written manufacturer's guarantee in Owner's name covering all materials and workmanship under this Section 323300, Site Furnishings, in addition to, and not in lieu of, guarantee requirements set forth under Section 010000,



GENERAL REQUIREMENTS, and other liabilities which the Contractor may have by law or other provisions of the Contract Documents.

- C. Supplier shall pay for repairs of any damage to any part of the project caused by defects in his work and for any repair to the materials or equipment caused by replacement. All repairs are to be done to the satisfaction of the Owner's Representative.
- D. Any part of the work installed under this contract requiring excessive maintenance shall be considered as being defective, and shall be replaced by the Supplier during the one year guarantee period at no cost to the Owner.

## PART 2 - PRODUCTS

### 2.1 SEATING

- A. 72" long bench with backrest, surface mount, Thermally Modified Red Oak slats with blue supports, (model #61-892) as manufactured by Dumor, Inc P.O. Box 142 Mifflintown, PA 17059 or approved equal

### 2.2 TABLES

- A. 8' long ADA picnic table, surface mount, Thermally Modified Red Oak slats with blue supports, (model #67-079-68-1) as manufactured by DuMor, Inc., P.O. Box 142, Mifflintown, PA 17059 800.598.4018, or approved equal.
- B. 6' long picnic table, surface mount, Thermally Modified Red Oak slats with blue supports (model 67-079-6) as manufactured by DuMor, Inc. P.O. Box 142, Mifflintown, PA 17059 800.598.018 or approved equal.

### 2.3 TRASH RECEPTACLES

- A. From Stockpile

### 2.4 FABRICATION

- A. Factory Assembly: Factory assemble components to greatest extent possible to minimize field assembly. Clearly mark units for assembly in the field.



## 2.5 GENERAL FINISH REQUIREMENTS

- A. Appearance of Finished Work: Noticeable variations in same piece are unacceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

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

### 3.2 INSTALLATION

- A. Comply with manufacturer's written installation instructions unless more stringent requirements are indicated. Complete field assembly of site furnishings where required.
- B. All metal inserts, anchor slots, anchors, anchor bolts, fastenings, and other fastening devices, for attachment of site improvement items to pavements, except as otherwise specified under other Sections of this Specification, shall be in specified, provided, delivered installed and paid for under the work of this Section 02800, Site Furnishings.
- C. Unless otherwise indicated, install site furnishings after landscaping and paving have been completed.
- D. Free-standing site improvement items shall be set plumb and horizontal regardless of the pitch of the finished surrounding grade unless otherwise shown on the Contract Documents.
- E. The Contractor shall be responsible for timing the delivery of site improvement items so as to minimize the on-site storage time prior to installation. All stored materials are the responsibility of the Contractor and shall be protected from weather, careless handling and vandalism.
- F. Contractor shall be responsible for the correct location of site improvement items. Take particular care to maintain shapes, plumb and level during the pouring of concrete.
- G. All Work shall be accurately set to established lines and elevations and rigidly set in place to supporting construction.
- H. Install site furnishings level, plumb, true, and positioned at locations after final approval in the field by Owner's Representative.



- I. Post Setting: Set cast-in support posts in concrete footing with smooth top, shaped to shed water. Protect portion of posts above footing from concrete splatter. Verify that posts are set plumb or at correct angle and are aligned and at correct height and spacing. Hold posts in position during placement and finishing operations until concrete is sufficiently cured.

END OF SECTION 323300



## 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 31 20 00 - Earth Moving
2. Section 32 92 00 - Turf and Grasses
3. Section 32 93 00 - Plants
4. 33 46 11.23 - Stormwater Retention Ponds

#### 1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

##### A. Loam:

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 31 20 00

## 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 inch** in size. Remove contaminated subsoil.
- C. Scarify surface to depth of **3 inches** where topsoil is scheduled. Scarify in areas where equipment used for hauling and spreading topsoil has compacted subsoil.

### 3.4 PLACING LOAM

- A. Place Loam in areas where planting is required. Minimum depth of 6", Place loam during dry weather.
- B. Fine grade loam 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 loam close to plant material, and path to prevent damage.



- E. Roll placed loam.
- F. Remove surplus subsoil and loam 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 loam: 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.

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. Seeding.
  - 2. Hydroseeding.
  - 3. Meadow grasses and wildflowers.
  - 4. Erosion-control material(s).

- 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. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture, stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.
- C. Product Certificates: For fertilizers, from manufacturer.

#### 1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: Recommended procedures to be established by Owner for maintenance of turf and meadows 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 and meadow 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. Provide erosion-control measures to prevent erosion or displacement of bulk materials; discharge of soil-bearing water runoff; and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
  - 3. Accompany each delivery of bulk materials with appropriate certificates.

## 1.9 FIELD CONDITIONS

- A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of Substantial Completion .
  - 1. Fall Planting: **<Insert dates>**.
- 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. Use the following seed mix for Full/Part Sun areas:
  - 1. Endophyte Enhanced Mix (modified):
    - a. 30% Improved Perennial Rye
    - b. 30% Turf Type Tall Fescue
    - c. 35% Chewings Fescue
    - d. 5% Miniature or Dutch White Clover
  - 2. Available from:
    - a. Allen's Seed Store - 693 S County Trail Exeter, RI 02822 Phone: 401-294-2722
    - b. Approved Equal
- B. Use the following mix for the Shade/Part Shade Areas:



1. Bio-Retention Floor Mix -Low Maintenance ERNMX-126
  - a. 20% *Panicum clandestinum*
  - b. 20% *Puccinellia distans*
  - c. 18% *Elymus virginicus*
  - d. 15% *Agrostis stolonifera*, 'Penncross'
  - e. 15% *Poa palustris*
  - f. 10% *Carex vulpinoidea*
  - g. 1% *Carex scoparia*
  - h. 1% *Juncus effusus*
2. Available from:
  - a. Ernst Conservation Seeds - 8884 Mercer Pike Meadville, PA 16335 - (800) 873-3321
  - b. Approved Equal

C. Use the following mixes for area between fence and existing retaining wall:

1. RI State Native Mix
  - a. 30% Hard Fescue
  - b. 25% Perennial Rye
  - c. 25% Little Bluestem
  - d. 20% Switchgrass
2. RI State Wildflower Mix
  - a. 58% Lance Leaved Coreopsis
  - b. 22% Oxeye Daisy
  - c. 10% White Yarrow
  - d. 10% Black Eyed Susan
3. Blend mixes in an equal ratio (by coverage) refer to distributor for best method of getting an equal mix
4. Both mixes available from Allen's Seed (see details above)

## 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) - 0 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) - 0 Phosphorous (P) - 12 Potassium (K)



## 2.3 EROSION-CONTROL MATERIALS

- A. Bedding Straw: clean, dry and free of weed seeds
- B. Non-asphaltic tackifier: guar gum or approved equal

## 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.
- B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

### 3.3 TURF AREA PREPARATION

- A. General: Prepare planting area for soil placement and mix planting soil according to Section 32 91 19 - Landscape Grading



- 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 PREPARATION FOR EROSION-CONTROL MATERIALS

- A. Prepare area as specified in "Turf Area Preparation" Article.
- B. For erosion-control mats, install planting soil in two lifts, with second lift equal to thickness of erosion-control mats. Install erosion-control mat and fasten as recommended by material manufacturer.
- C. Fill cells of erosion-control mat with planting soil and compact before planting.
- D. For erosion-control blanket or mesh, install from top of slope, working downward, and as recommended by material manufacturer for site conditions. Fasten as recommended by material manufacturer.
- E. Moisten prepared area before planting if surface is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

### 3.5 SEEDING (BIO-RETENTION AREA ONLY)

- A. Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds **5 mph** .
  - 1. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.
  - 2. Do not use wet seed or seed that is moldy or otherwise damaged.
  - 3. Do not seed against existing trees. Limit extent of seed to outside edge of planting saucer.
- B. Sow seed at a rate per distributor's recommendations .
- C. Rake seed lightly into top **1/8 inch** of soil, roll lightly, and water with fine spray.
- D. Protect seeded areas by spreading straw mulch. Spread uniformly at a minimum rate of **2 tons/acre** to form a continuous blanket **1-1/2 inches** in loose thickness over seeded areas. Spread by hand, blower, or other suitable equipment.



1. Bond straw mulch by spraying with asphalt emulsion at a rate of **10 to 13 gal./1000 sq. ft.**. Take precautions to prevent damage or staining of structures or other plantings adjacent to mulched areas. Immediately clean damaged or stained areas.

### 3.6 HYDROSEEDING (ALL OTHER AREAS)

- 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 (5-7 lbs/1000 sq ft).

### 3.7 TURF MAINTENANCE

- A. General: Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. 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 Lawn Areas to a height of **2 to 3 inches** .
2. Mow Native Grass/Wildflower Areas twice per year in late Spring and Late Fall

### 3.8 SATISFACTORY TURF

- A. Turf installations shall meet the following criteria as determined by Architect:
  1. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any **10 sq. ft.** and bare spots not exceeding **5 by 5 inches** .
- B. Use specified materials to reestablish turf that does not comply with requirements, and continue maintenance until turf is satisfactory.

### 3.9 CLEANUP AND PROTECTION

- A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.
- B. 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.
- D. Remove nondegradable erosion-control measures after grass establishment period.

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.
  - 3. Tree-watering devices.

- 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 329119 "Landscape Grading" for preparation of planting beds.

#### 1.3 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. Finish Grade: Elevation of finished surface of planting soil.
- D. 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.





- E. 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.
- F. Planting Area: Areas to be planted.
- G. 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.
- H. 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.
- I. 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.
- J. Stem Girdling Roots: Roots that encircle the stems (trunks) of trees below the soil surface.
- K. 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 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.

#### 1.5 PREINSTALLATION MEETINGS

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

#### 1.6 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 3- by 5-inch print 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 20 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.

#### 1.7 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.

#### 1.8 CLOSEOUT SUBMITTALS

#### 1.9 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 or personnel assigned to the Work shall have certification in one or all 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.
- 1.10 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. Deliver bare-root stock plants within 24 hours of digging. Immediately after digging up bare-root stock, pack root system in wet straw, hay, or other suitable material to keep root system moist until planting. Transport in covered, temperature-controlled vehicles, and keep plants cool and protected from sun and wind at all times.
  - D. 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.

- E. Handle planting stock by root ball.
- F. Store bulbs, corms, and tubers in a dry place at 60 to 65 deg F until planting.
- G. Apply antidesiccant to trees and shrubs using power spray to provide an adequate film over trunks (before wrapping), branches, stems, twigs, and foliage to protect during digging, handling, and transportation.
  - 1. If deciduous trees or shrubs are moved in full leaf, spray with antidesiccant at nursery before moving and again two weeks after planting.
- H. Wrap trees and shrubs with burlap fabric over trunks, branches, stems, twigs, and foliage to protect from wind and other damage during digging, handling, and transportation.
- I. Deliver plants after preparations for planting have been completed, 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. Heel-in bare-root stock. Soak roots that are in less than moist condition in water for two hours. Reject plants with dry roots.
  - 2. Set balled stock on ground and cover ball with soil, peat moss, sawdust, or other acceptable material.
  - 3. Do not remove container-grown stock from containers before time of planting.
  - 4. 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.

#### 1.11 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 15 - May 15
  - 2. Fall Planting: Sept 15- Dec 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.

## 1.12 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 edgings and tree grates .
    - d. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
  2. Warranty Periods: From date of planting 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.
- D. Labeling: Label each plant of each variety, size, and caliper with a securely attached, waterproof tag bearing legible designation of common name and full scientific name, including genus and species. Include nomenclature for hybrid, variety, or cultivar, if applicable for the plant.
- E. If formal arrangements or consecutive order of plants is indicated on Drawings, select stock for uniform height and spread, and number the labels to assure symmetry in planting.

## 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 Wood and bark chips .
  2. Size Range: 3 inches minimum. .
  3. Color: Natural. No color dyed mulch.
- 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 percent of dry weight.
  2. Feedstock: Agricultural, food, or industrial residuals; biosolids; yard trimmings; or source-separated or compostable mixed solid waste.

## 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. Tree-Tie Webbing: UV-resistant polypropylene or nylon webbing with brass grommets.



## 2.4 TREE-WATERING DEVICES

- A. Slow-Release Watering Device: Standard product manufactured for drip irrigation of plants and emptying its water contents over one week ; manufactured from UV-light-stabilized nylon-reinforced polyethylene sheet, PVC, or HDPE plastic.
  - 1. Manufacturers:
    - a. Tree Gator
    - b. A.M. Leonard
    - c. Approved Equal
  - 2. Color: As selected by Architect from manufacturer's full range dark chocolateorgreen .

## 2.5 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.
- B. Tree Watering Bag: provide each tree with a ARBORRAIN TOWER TREE AND PLANT HYDRATOR by AM Leonard (or Approved Equal) following planting. Contractor is responsible for filling bag when it becomes empty for during active growing seasons for 1 year following substantial completion.

## 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." Section 329115 "Soil Preparation (Performance Specification)."
- B. Placing Planting Soil: Place and mix planting soil in-place over exposed subgrade Place manufactured planting soil over exposed subgrade Blend planting soil in place .
- 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 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 overnight, after working hours, and when unattended by Installer's personnel.
  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 **2 inches** above adjacent finish grades.
1. Backfill: Planting soil . 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. Continue backfilling process. Water again after placing and tamping final layer of soil.
- D. and Stock: Set each plant plumb and in center of planting pit or trench with root flare **2 inches** above adjacent finish grades.
1. Backfill: Planting soil . For trees, use excavated soil for backfill.



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. 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 Upright Staking and Tying: Install trunk stabilization as follows unless otherwise indicated:
  1. Upright Staking and Tying: Stake trees of **2- through 5-inch** caliper. Stake trees of less than **2-inch** caliper only as required to prevent wind tip out. Use a minimum of two stakes of length required to penetrate at least **18 inches** below bottom of backfilled excavation and to extend to the dimension indicated on Drawings above grade. Set vertical stakes and space to avoid penetrating root balls or root masses.
  2. Upright Staking and Tying: Stake trees with two stakes for trees up to **12 feet** high and **2- 1/2 inches** or less in caliper; three stakes for trees less than **14 feet** high and up to **4 inches** in caliper. Space stakes equally around trees.
  3. Support trees with bands of flexible ties at contact points with tree trunk. Allow enough slack to avoid rigid restraint of tree.
  4. Support trees with two strands of tie wire, connected to the brass grommets of tree-tie webbing at contact points with tree trunk. Allow enough slack to avoid rigid restraint of tree.
- B. 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 **30 inches** long, driven to grade. Adjust spacing to avoid penetrating root balls or root masses. Provide turnbuckle for each guy wire and tighten securely.



- b. For trees more than **6 inches** in caliper , anchor guys to wood deadmen buried at least **36 inches** below grade. Provide turnbuckle for each guy wire and tighten securely.
      - c. Support trees with bands of flexible ties at contact points with tree trunk and reaching to turnbuckle . Allow enough slack to avoid rigid restraint of tree.
      - d. Support trees with guy cable or multiple strands of tie wire, connected to the brass grommets of tree-tie webbing at contact points with tree trunk and reaching to turnbuckle . Allow enough slack to avoid rigid restraint of tree.
      - e. Attach flags to each guy wire, **30 inches** above finish grade.
      - f. Paint turnbuckles with luminescent white paint.
    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.
  - C. Root-Ball Stabilization: Install at- or below-grade stabilization system to secure each new planting by the root ball unless otherwise indicated.
    1. Wood Hold-Down Method: Place vertical stakes against side of root ball and drive them into subsoil; place horizontal wood hold-down stake across top of root ball and screw at each end to one of the vertical stakes.
      - a. Install stakes of length required to penetrate at least to the dimension indicated on Drawings below bottom of backfilled excavation. Saw stakes off at horizontal stake.
      - b. Install screws through horizontal hold-down and penetrating at least **1 inch** into stakes. Predrill holes if necessary to prevent splitting wood.
      - c. Install second set of stakes on other side of root trunk for larger trees.
    2. Proprietary Root-Ball Stabilization Device: Install root-ball stabilization system sized and positioned as recommended by manufacturer unless otherwise indicated and according to manufacturer's written instructions.
  - D. Palm Bracing: Install bracing system at three or more places equally spaced around perimeter of trunk to secure each palm until established unless otherwise indicated.
    1. Site-Fabricated Palm-Bracing Method:
      - a. Place battens over padding and secure battens in place around trunk perimeter with at least two straps, tightened to prevent displacement. Ensure that straps do not contact trunk.
      - b. Place diagonal braces and cut to length. Secure upper ends of diagonal braces with galvanized nails into battens or into nail-attached blocks on battens. Do not drive nails, screws, or other securing devices into palm trunk; do not penetrate palm trunk in any fashion. Secure lower ends of diagonal braces with stakes driven into ground to prevent outward slippage of braces.
    2. Proprietary Palm-Bracing Device: Install palm-bracing 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 and Treelike Shrubs in Turf Areas: Apply organic mulch ring of **3-inch** average thickness, with **12-inch** radius around trunks or stems. Do not place mulch within **6 inches** of trunks or stems.
  - 2. Organic Mulch in Planting Areas: Apply **3-inch** average thickness of organic mulch extending **12 inches** beyond edge of individual planting pit or trench 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. Mineral Mulch in Planting Areas: Apply **3-inch** average thickness of mineral mulch extending **12 inches** beyond edge of individual planting pit or trench 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 EDGING INSTALLATION

- A. Shovel-Cut Edging: Separate mulched areas from turf areas , curbs, and paving with a 45-degree, **4- to 6-inch-** deep, shovel-cut edge as indicated on Drawings.

### 3.10 INSTALLING SLOW-RELEASE WATERING DEVICE

- A. Provide one device for each tree.
- B. Place device on top of the mulch at base of tree stem and fill with water according to manufacturer's written instructions.

### 3.11 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.



### 3.12 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.

### 3.13 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.
- E. At time of Substantial Completion, verify that tree-watering devices are in good working order and leave them in place. Replace improperly functioning devices.

END OF SECTION 329300



## SECTION 329600 - TRANSPLANTING

### 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 transplanting non-nursery-grown trees by tree spade or digging and boxing.
- 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 329300 "Plants" for new trees from nursery-grown sources.

#### 1.3 DEFINITIONS

- A. General: See definitions in ANSI A300 (Part 6) and in ANSI Z60.1 pertaining to field-grown trees, except as otherwise defined in this Section.
- B. Caliper: Diameter of a trunk as measured by a diameter tape the average of the smallest and largest diameters at a height **6 inches** above the root flare for trees up to, and including, **4-inch** size at this height; and as measured at a height of **12 inches** above the root flare for trees larger than **4-inch** size.
- C. Root-Ball Depth: Measured from bottom of trunk flare to the bottom of root ball.
- D. Root-Ball Width: Measured horizontally across the root ball with an approximately circular form or the least dimension for non-round root balls, not necessarily centered on the tree trunk, but within tolerance according to ANSI Z60.1.
- E. Root Flare: Also called "trunk flare." The area at the base of the tree'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.



#### 1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site .
  - 1. Review methods and procedures related to transplanting work include, but are not limited to, the following:
    - a. Construction schedule. Verify availability of materials, personnel, equipment, and unimpeded access needed to make progress and avoid delays.
    - b. Tree and plant protection.
    - c. Tree maintenance.
    - d. Arborist's responsibilities.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. 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 in such a manner as to destroy their natural shape.
- B. Completely cover foliage when transporting trees while they are in foliage.
- C. Handle trees by root ball. Do not drop trees.
- D. Move trees after preparations for planting have been completed, and install immediately. If planting is delayed more than six hours after moving, set trees in their appropriate aspect (sun, filtered sun, or shade), protect from weather and mechanical damage, and keep roots moist.

#### 1.6 FIELD CONDITIONS

- A. Field Measurements: Verify final grade elevations and final locations of trees and construction contiguous with trees by field measurements before proceeding with transplanting work. Perform transplanting only after finish grades are established.
- B. Seasonal Restrictions: Transplant trees during the following in-season periods:
  - 1. Summer: Do not transplant .
  - 2. Fall: September 1st-November 1st .
- C. Weather Limitations: Proceed with transplanting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Do not transplant during excessively wet or frozen conditions. Apply products during favorable weather conditions according to manufacturer's written instructions and warranty requirements.
- D. Coordination with Turf Areas (Lawns): Perform transplanting before planting turf areas unless otherwise indicated.





1. When transplanting after planting turf areas, protect turf areas, and promptly repair damage caused by transplanting operations.
- E. Coordination with Planting Beds: Perform transplanting before planting bedded areas unless otherwise indicated.
  1. When transplanting after planting bedded areas, protect bedding plants, and promptly repair damage caused by transplanting operations.

#### 1.7 MAINTENANCE SERVICE

- A. Initial Maintenance Service: Provide tree maintenance by skilled employees of tree-service firm and as required in Part 3. Begin maintenance immediately after preparatory pruning and continue until plantings are healthy and well established but for not less than maintenance period below.
  1. Maintenance Period: 12 months from date of Substantial Completion .

### PART 2 - PRODUCTS

#### 2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Transplanted trees shall be healthy and resume vigorous growth within one year **<Insert period>** of transplanting without dieback due to defective extracting, handling, planting, maintenance, or other defects in the Work.

#### 2.2 PLANTING MATERIALS

- A. Backfill Soil: Excavated soil mixed with planting soil of suitable moisture content and granular texture for placing and compacting in planting pit around tree, and 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 excavated soil to one part planting soil .
  2. Planting Soil: Planting soil organic leaf compost as specified in 329300: Plants

#### 2.3 WATERING DEVICES

- A. Slow-Release Watering Device: Standard product manufactured for drip-irrigation of plants and emptying its water contents over a period of 2 to 9 hours; manufactured from UV-light stabilized nylon-reinforced polyethylene sheet, PVC, or HDPE plastic.





1. See Section 329300: Plants for approved manufacturers

## 2.4 MISCELLANEOUS PRODUCTS

- A. Organic Mulch: Ground or shredded bark as specified in Section 329300 "Plants."

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Erosion and Sedimentation Control: Examine the site to verify that temporary erosion- and sedimentation-control measures are in place. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross transplanting areas.
- B. For the record, prepare written report, endorsed by arborist, listing conditions detrimental to transplanting work and tree protection and health.
- C. Proceed with transplanting only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, other facilities, turf areas, and other plants and planting areas from damage caused by transplanting operations.
- B. Locate and clearly identify trees for transplanting. Flag each tree at **54 inches** above the ground.
- C. Lay out individual transplant locations and areas for multiple plantings. Stake locations, outline areas, adjust locations when requested, and obtain Architect's acceptance of layout before transplanting. Make minor adjustments as required.

### 3.3 PREPARATORY PRUNING

- A. Root Pruning: Perform preparatory root pruning under direction of arborist as far in advance of extracting each tree as the Project Schedule allows.
  1. Dig exploratory pits or trench by hand or with air spade around perimeter of tree at indicated root-ball width to determine locations of main lateral roots.
  2. Dig trench by hand or with tree spade around perimeter of plant at indicated root-ball width to the depth of the root system. Do not use a backhoe or other equipment that rips, tears, or pulls roots.



3. Root-Ball Width: Minimum **9 inches** of root-ball diameter, or least dimension for non-round root balls, for each **inch** of tree caliper being transplanted or each foot of shrub width.
4. If encountering large, main lateral roots, expose roots beyond excavation limits as required to bend and redirect them without breaking.
5. Use narrow-tine spading forks to comb soil to expose roots with minimal damage to root system.
6. Cut exposed roots manually 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.
7. Do not paint or apply sealants on cut root ends.
8. Backfill trench with excavated soil.

B. Crown Pruning (Tip Pruning):

1. Do not perform preparatory crown pruning (tip pruning).

### 3.4 EXCAVATION AND PLANTING EQUIPMENT

- A. Tree Spade: Track-mounted mechanized tree mover; sized according to manufacturer's size recommendation for each tree being transplanted.

### 3.5 EXCAVATING PLANTING PITS

- A. General: Excavate under supervision of the arborist.

1. Excavate planting pits or trenches with sides sloping. 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. Scarify sides of planting pit smeared or smoothed during excavation.
2. Excavate approximately three times as wide as root ball.
3. Keep excavations covered or otherwise protected until replanting trees.

- B. Subsoil and topsoil removed from excavations may be used as planting soil.

- C. Obstructions: Notify Architect if unexpected rock or obstructions detrimental to trees are encountered in excavations.

- D. Seepage: Notify Architect if subsoil conditions evidence unexpected water seepage into tree-planting pits.

### 3.6 EXTRACTING TREES & SHRUBS

- A. General: Extract trees under supervision of a certified arborist or the City Forester.



- B. Orientation Marking: Mark the north side of each tree with non-permanent paint before extracting.
- C. Root-Ball Width, Trees: Minimum **10 inches** of root-ball diameter, or least dimension for non-round root balls, for each **inch** of tree caliper being transplanted.
  - 1. Root-Ball Width, Shrubs: Minimum 10 inches of root-ball diameter, or least dimension for non-round root balls, for each foot of width of shrub being transplanted
- D. Root-Ball Depth: As determined by the arborist for each species and size of tree and for site conditions at original and planting locations.
- E. Digging:
  - 1. Dig and clear a pit by hand or with tree spade to the depth of the root system. Do not use a backhoe or other equipment that rips, tears, or pulls roots.
  - 2. Use narrow-tine spading forks to comb soil to expose roots with minimal damage to root system.
  - 3. If encountering large, main lateral roots, expose roots beyond excavation limits as required to bend and redirect them without breaking.
  - 4. Cut exposed roots manually with sharp pruning instruments; do not break, tear, chop, or slant the cuts. Do not paint or apply sealants on cut root ends.
  - 5. Wrap burlap tight against root system sides and bottom as pit is dug. Pin or tie burlap to prevent breaking of root ball.
  - 6. Temporarily support and protect exposed roots from damage until they are permanently redirected and covered with soil. Cover roots with burlap and keep them moist until planted.
- F. Extracting with Tree Spade: Use the same tree spade to extract the tree as will be used to transport and plant the tree.
  - 1. Do not use tree spade to move trees larger than the manufacturer's maximum size recommendation for the tree spade being used.
  - 2. When extracting the tree, center the trunk within the tree spade and move tree with a solid ball of earth.

### 3.7 TEMPORARY STOCKPILE

- A. If new location of transplanted material is not ready, plants must be stockpiled on site.
- B. Plants should be "Heeled-in" - "Heeling-in" involves covering the root balls with shredded bark, peat moss, or other approved mulching material(s).
  - 1. Place plants in a trench (not to exceed depth of cap) or group plants together on ground surface.



2. Fill around all roots and root balls with shredded bark mulch or approved equal.
3. Water frequently to ensure rootball stays moist until ready for transplant.

### 3.8 PLANTING

- A. Planting Standard: Perform planting according to ANSI A300 (Part 6) unless otherwise indicated.
- B. Before planting, verify that root flare is visible at top of root ball. 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.
- C. Ensure that root flare is visible after planting.
- D. Remove injured roots by cutting cleanly; do not break. Do not paint or apply sealants on cut root ends.
- E. Orientation: Position the tree so that its north side, marked before extracting, is facing north in its new location.
- F. Set tree plumb and in center of planting pit with bottom of root flare **1 inch** above adjacent finish grades.
  1. Use specified backfill soil for backfill.
  2. If area under the tree was initially dug too deep, add backfill to raise it to the correct level and thoroughly tamp the added soil to prevent settling.
  3. After placing some backfill around root ball to stabilize plant, begin backfilling.
  4. 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.
  5. Redirect exposed root ends downward in backfill areas where possible. Hand-expose roots 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.
  6. Place planting tablets in each planting pit when pit is approximately one-half filled; in amounts recommended by arborist. Place tablets beside the root ball about 1 inch (25 mm) from root tips; do not place tablets in bottom of the hole.
  7. Continue backfilling process. Water again after placing and tamping final layer of soil.
- G. Planting with Tree Spade: Use the same tree spade for planting as was used to extract and transport the tree. Do not use tree spade for trees larger than the manufacturer's maximum size recommendation for the tree spade being used.



- H. Slopes: When planting on slopes, set the tree 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.

### 3.9 CROWN PRUNING

- A. Prune branches as directed by arborist.
  - 1. Prune to remove only injured, broken, dying, or dead branches. Do not prune for shape.
  - 2. Do not remove or reduce living branches to compensate for root loss caused by cutting root system or to improve natural tree form.
  - 3. Pruning Standards: Perform pruning according to ANSI A300 (Part 1).
- B. Unless otherwise directed by arborist and acceptable to Architect, do not cut tree leaders.
- C. Cut branches with sharp pruning instruments; do not break or chop.
- D. Do not paint or apply sealants to wounds.
- E. Provide subsequent maintenance during Contract period as recommended by arborist.

### 3.10 MULCHING

- A. Organic Mulch: Apply **3-inch** average thickness of organic mulch extending **12 inches** beyond edge of individual planting pit, and finish level with adjacent finish grades. Do not place mulch within **6 inches** of trunks or stems.

### 3.11 INSTALLING SLOW-RELEASE WATERING DEVICE

- A. Provide one device for each tree.
- B. Place device on top of the mulch at base of tree and fill with water according to manufacturer's written instructions.

### 3.12 TREE MAINTENANCE

- A. Perform tree maintenance as recommended by arborist. Maintain arborist observation of transplanting work.
- B. Maintain trees 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. Treat as required to keep trees free of insects and disease.



- C. Fill areas of soil subsidence with backfill soil. Replenish mulch materials damaged or lost in areas of subsidence.
- D. Apply treatments as required to keep tree materials, planted areas, and soils free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.

### 3.13 REPAIR AND REPLACEMENT

- A. General: Repair or replace transplanted trees and other plants indicated to remain or be relocated that are damaged by construction operations, in a manner recommended by the arborist and approved by Architect.
  - 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 Architect.
- B. Remove and replace trees that are more than 50 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 or smaller in caliper size.
  - 2. Species of Replacement Trees: Same species being replaced .

### 3.14 CLEANUP AND PROTECTION

- A. During transplanting, keep adjacent paving and construction clean and work area in an orderly condition.
- B. Protect trees from damage due to transplanting operations and operations of other contractors and trades. Maintain protection during transplanting and maintenance periods. Treat, repair, or replace damaged plantings.
- C. After planting and before Substantial Completion , remove tags, markings, tie tape, labels, wire, burlap, and other debris from transplanted trees, planting areas, and Project site.



### 3.15 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Except for materials indicated to be recycled, remove surplus soil, excess excavated material, waste materials, displaced plants, trash, and debris, and legally dispose of them off Owner's property.
- B. Transport surplus satisfactory soil to designated storage areas on Owner's property. Stockpile or spread soil as directed by Architect.
  - 1. Except for materials indicated to be retained on Owner's property or recycled, remove excess excavated material, waste materials, displaced plants, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION 329600

1.