BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

REQUEST FOR PROPOSALS

Item Description: PARK IMPROVEMENTS AT GENERAL STREET PARK
Date to be opened: December 19, 2022

Issuing Department: **PARKS DEPARTMENT**

QUESTIONS

- Please direct questions relative to the bidding process, how to fill out forms, and how to submit a bid (Pages 1-8) to Purchasing Agent Liza Perez.
    - Phone: (401) 680-5264
    - Email: operez@providenceri.gov
        - Please use the subject line "**RFP Question**"
- Please direct questions relative to the Minority and Women's Business Enterprise Program and the corresponding forms (Pages 9-13) to the MBE/WBE Outreach Director for the City of Providence, Grace Diaz
    - Phone: (401) 680-5766
    - Email: gdiaz@providenceri.gov
        - Please use subject line "**MBE WBE Forms**"
- Please direct questions relative to the specifications outlined (beginning on page 14) to the issuing department's subject matter expert:
    - **Chip Ryan – Landscape Designer**
    - **401 680-7216**
    - **cryan@providenceri.gov**

Pre-bid Conference (NON-MANDATORY)
Tuesday December 6, 2022 10:00AM
1 Recreation Way, Providence, RI

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

INSTRUCTIONS FOR SUBMISSION

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

- Bidders must submit **2 copies** of their bid in sealed envelopes or packages labeled with the captioned **Item Description** and the **City Department to which the RFP and bid are related 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 RFP. If you have an old version of a form do not recycle it for use in this bid.
- The bid envelope and information relative to the bid must be addressed to:

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

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

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

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

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

BID PACKAGE CHECKLIST

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

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

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

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

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

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

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

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

NOTICE TO VENDORS

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

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

BID TERMS

1. Financial assurances may be required in order to be a successful bidder for Commodity or Construction and Service contracts. If either of the first two checkboxes below is checked, the specified assurance **must accompany** a bid, or the bid will not be considered by the Board of Contract and Supply. The third checkbox indicates the lowest responsible bidder will be contacted and required to post a bond to be awarded the contract.

   a) ☐ A certified check for **$**_____ must be deposited with the City Clerk as a guarantee that the Contract will be signed and delivered by the bidder.

   b) ☒ A bid bond in the amount of **5%** per centum (%) of the proposed total price, must be deposited with the City Clerk as a guarantee that the contract will be signed and delivered by the bidder; and the amount of such bid bond shall be retained for the use of the City as liquidated damages in case of default.

   c) ☒ A performance and payment bond with a satisfactory surety company will be posted by the bidder in a sum equal to one hundred per centum (100%) of the awarded contract.

   d) ☐ No financial assurance is necessary for this item.

2. Awards will be made within **sixty (60) days of bid opening**. All bid prices will be considered firm, unless qualified otherwise. Requests for price increases will not be honored.
3. Failure to deliver within the time quoted or failure to meet specifications may result in default in accordance with the general specifications. It is agreed that deliveries and/or completion are subject to strikes, lockouts, accidents and Acts of God.

The following entry applies only for COMMODITY BID TERMS:

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

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

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

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BID FORM 1: Bidders Blank

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

Name of Bidder (Firm or Individual): _____

Contact Name: _____

Business Address: _____

Business Phone #: _____

Contact Email Address: _____

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

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

Delivery Date (if applicable): _____

Name of Surety Company (if applicable): _____

Total Amount in Writing*: _____

Total Amount in Figures*: _____

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

Use additional pages if necessary for additional bidding details.

_____

Signature of Representation

_____

Title

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

Upon behalf of_____ (Firm or Individual Bidding),

I,_____(Name of Person Making Certification),

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

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

I affirm by signing below that I am duly authorized on behalf of Bidder, on this_____day of_____20____.

_____
Signature of Representation

_____
Printed Name

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

BID FORM 3: Certificate Regarding Public Records

Upon behalf of_____ (Firm or Individual Bidding),

I,_____(Name of Person Making Certification),

being its_____(Title or "Self"), hereby certify an

understanding that:

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

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

this_____day of_____20____.

_____

Signature of Representation

_____

Printed Name

BOARD OF CONTRACT AND SUPPLY
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WBE/MBE Form Instructions

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

The goal for Minority Business Enterprise (MBE) participation is **10%** of the total bid value.
The goal for Women's Business Enterprise (WBE) participation is **10%** of the total bid value.
The goal for combined MBE/WBE participation is **20%** of the total bid value.

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

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

Bid Requirements:

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

Bidders who will be subcontracting: In addition to the MBE/WBE Participation Affidavit, Bidders who will be subcontracting must submit the ***Subcontractor Disclosure Form*** as part of their bid submission. All subcontractors, regardless of MBE/WBE status, must be listed on this form. Business NAICS codes can be found at https://www.naics.com/search/. Awarded bidders are required to submit

Subcontractor Utilization and Payment Reports with each invoice.

Waiver Requests:

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

b) If the prime contractor company has the capacity to perform the whole project, the City of Providence requires the contractor to meet the city's goal of a combined 20% of MBE and WBE participation.

c) If the contractor is a nonprofit organization, the City of Providence requires the nonprofit organization to provide the *MBE/WBE Participation Affidavit Form* and proof of its nonprofit status.

d) If the contractor has researched the RI Certified minority list (http://odeo.ri.gov/offices/mbeco/mbe-wbe.php) and the state does not have any companies in the desired trade, the City of Providence requires the contractor to provide the *MBE/WBE Participation Affidavit Form*.

e) Waivers will be considered for approval on a case-by-case basis.

Verifying MBE/WBE Certification

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

Form Instructions:

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

Assistance with Form Requirements

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

Contract Requirements:

Prime contractors engaging subcontractors must submit the ***Subcontractor Utilization and Payment Report*** to the City Department's Fiscal Agent with every invoice and request for final payment. A copy of all forms should be sent to the MBE/WBE Outreach Director Office, Grace Diaz at gdiaz@providenceri.gov. This form is not submitted as a part of the initial bid package.

For contracts with durations of less than 3 months, this form must be submitted along with the contractor's request for final payment. The form must include all subcontractors utilized on the contract, both MBE/WBE and non- MBE/WBE, the total amount paid to each subcontractor for the given period and to date, A copy of all forms should be sent to the MBE/WBE Outreach Director Office, Grace Diaz at gdiaz@providenceri.gov. During the term of the contract, any unjustified failure to comply with the MBE/WBE participation requirements is a material breach of contract.

Questions?

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

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MBE/WBE PARTICIPATION AFFIDAVIT

Project /Item Description (as seen on RFP):

_____

_____

_____

Prime Bidder: _____Contact Email and Phone_____

Company Name, Address and Trade: _____

_____

_____

Which one of the following describes your business' status in terms of Minority and/or Woman-Owned Business Enterprise certification with the State of Rhode Island? _____MBE _____WBE _____Neither MBE nor WBE

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

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

The goal for Minority Business Enterprise (MBE) participation is 10% of the total bid value.
The goal for Women's Business Enterprise (WBE) participation is 10% of the total bid value.
The goal for combined MBE/WBE participation is 20% of the total bid value.

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

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

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

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

Initial _____

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

Initial _____

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

_____ _____
Signature of Bidder Printed Name

_____ _____
Company Name Date

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SUBCONTRACTOR DISCLOSURE FORM

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

Prime Bidder: _____ Primary NAICS_____
Code:_____

Item Description (as seen on RFP): _____

_____

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

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

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

_____ _____
Signature of Bidder Printed Name

BOARD OF CONTRACT AND SUPPLY
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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 mbe-wbe@providenceri.gov, for review **prior to bid submission.** This waiver applies only to the current bid which you are submitting to the City of Providence and does not apply to other bids your company may submit in the future. **In case a waiver is need it City Department Directors should not** recommend a bidder for 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 (or Designee (Only) Printed Name of City of Providence Date Signed
MBE/WBE Outreach Director MBE/WBE Outreach Director

BOARD OF CONTRACT AND SUPPLY
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SUPPLEMENTAL INFORMATION

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

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

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

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

You must be able to provide:

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

BOARD OF CONTRACT AND SUPPLY
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BID FORM 3: Supplemental Bid Form

To whom it may concern:

1. The undersigned, having familiarized (himself) (themselves) (itself) with the **IMPROVEMENTS AT GENERAL STREET 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 3rd Floor, City Hall, Providence, RI 02903, hereby proposes to furnish all supervision, technical personnel, labor, materials, machinery, tools, equipment and services including utility and transportation services, and to perform such other required work for the **IMPROVEMENTS AT GENERAL STREET 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.

DATE _____, 20___

Name of Bidder and Official Address: **Name of Authorized Representative (Contact):**

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

_____ _____

_____ **By** _____
(Signature)

_____ **Title** _____

E-Mail: _____ **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):

Addendum No.	**Date**	**Addendum No.**	**Date**
_____	_____, 20 ____	_____	_____, 20 ____
_____	_____, 20 ____	_____	_____, 20 ____

Sub-Contractors (If Any):

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

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

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

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

SUPPLEMENTAL BID FORM

To whom it may concern:

1. The undersigned, having familiarized (himself) (themselves) (itself) with the **Park Improvements at General Street 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 3rd Floor, City Hall, Providence, RI 02903, hereby proposes to furnish all supervision, technical personnel, labor, materials, machinery, tools, equipment and services including utility and transportation services, and to perform such other required work for the **Park Improvements at General Street 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.

DATE _____, 20___

Name of Bidder and Official Address:

_____

_____

Name of Authorized Representative (Contact):

_____

By _____
(Signature)

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

_____ Title _____

E-Mail: _____ 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):

Addendum No.	Date	Addendum No.	Date
_____	_____, 20 ____	_____	_____, 20 ____
_____	_____, 20 ____	_____	_____, 20 ____

Sub-Contractors (If Any):

Name: _____ Scope of Work: _____MBE / WBE

Name: _____ Scope of Work: _____MBE / WBE

Name: _____ Scope of Work: _____MBE / WBE

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

SUPPLEMENTAL BID FORM

PARK IMPROVEMENTS AT GENERAL STREET PARK

BASE BID: General Street Park is located in the Wanskuck neighborhood of Providence, at the intersection of General Street and West Drive.

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.

The City of Providence is seeking qualified contractors to perform the following scope of work that shall include but is not limited to:
BASE BID: The Base Bid scope of work for this project shall include, but not be limited to the following:

- Site preparation for demolition including all erosion control measures
- Removal and disposal of existing play structures
- Removal and disposal of site furnishings
- Removal and disposal of chainlink fence
- Removal and disposal bituminous concrete walkway
- Furnish and install playground equipment
- Furnish and install native boulders
- Furnish and install Engineered Wood Fiber mulch
- Furnish and install pre-cast concrete curbing
- Furnish and install bituminous concrete walks
- Furnish and install welded wire mesh fencing
- Furnish and install subsurface drainage

ADD ALTERNATES include: The Demolition and removal of existing bituminous basketball court, Installation of a new basketball court, installation of a drainage system; the demolition and removal of existing waterpark splash pad, Installation of a new waterpark splash pad; furnish and install an adult fitness structure; and to furnish and install an outdoor classroom.
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.
All Work Included in this Project Shall be Completed for the lump sum of:

_____**Dollars**
price in writing

($_____), TOTAL BASE BID

CONTINGENCY: $20,000.00

BASE BID W/ CONTINGENCY: $_____
price in writing

BIDDER:_____

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

ADD ALTERNATES:

Add Alt # 1 – Install (1) bituminous concrete basketball court, with striping and painting of court. Demolish existing bituminous concrete basketball court; remove and re-install (2) inground mount players benches; remove and re-install (2) basketball stanchions, backboards and hoops, strip, sand and repaint prior to re-installation; furnish and install (1) area drain and 6" perforated PVC drain pipe.- Per Lump Sum

_____ **LS** **$**_____

price in writing

Add Alt # 2 – Furnish and install (1) Waterpark splash pad. Remove & dispose of splash pad concrete, and concrete pads; remove & dispose water play features, all piping & couplings, remove and stockpile vortex activator and vortex aqua dome, remove & stockpile concrete curb, remove & stockpile benches, remove & stockpile picnic tables, remove & dispose existing manifold, stockpile water meter & backflow preventer; disconnect all water lines; remove & dispose utility cabinet. Furnish and install 4" concrete paving with Life Floor surfacing; furnish and install 4" concrete paving; furnish and install, as well as reinstall water park play features; furnish and install (1) NDS Dura-Slope channel drain; furnish and install (1) stainless steel utility cabinet on concrete pad, including command center, manifold and piping to all water park features. Furnish and install native boulders; reinstall (2) surface mount picnic tables. - **Per Lump Sum**

_____ **LS** **$**_____

price in writing

Add Alt # 3 – Furnish and install (1) adult fitness structure; furnish and install precast concrete curb; furnish and install Engineered Wood Fiber surface. **- Per Lump Sum**

_____ **LS** **$**_____

price in writing

Add Alt # 4 – Furnish and install (1) outdoor classroom; furnish and install recycled granite curb. **- Per Lump Sum**

_____ **LS** **$**_____

price in writing

DEDUCT ALTERNATES:

Deduct Alt # 1 – Deduct the price of the precast concrete curb, if Add Alt. #3 is accepted. **- Per Lump Sum**

_____ **LS** **$**_____

price in writing

UNIT PRICES – BASE BID:

1. **Remove and Dispose CL Fence, posts and footings - Per Lump Sum**

_____ **LS** **$**_____

price in writing

BIDDER:_____

2. Remove and Dispose all play equipment - Per Lump Sum

_____ **LS** **$**_____

price in writing

3. Remove and Dispose (2) benches and footings - Per Lump Sum

_____ **LS** **$**_____

price in writing

4. Remove and Dispose water play features, all piping, couplings and manifold. - Per Lump Sum

_____ **LS** **$**_____

price in writing

5. Remove and Dispose concrete splash pad – Complete

_____ **LS** **$**_____

price in writing

6. Strip and dispose of turf, remove, and amend topsoil - per Ton

_____ **TN** **$**_____

price in writing

7. Remove and Dispose Bituminous Concrete walkway – Complete - Per Lump Sum

_____ **LS** **$**_____

price in writing

8. **Remove and Dispose existing Engineered Wood Fiber playground surface to 12” depth - Per Lump Sum**

_____ **LS** **$**_____

price in writing

9. Furnish and Install Temporary Tree Protection – Per Each

_____ **EA** **$**_____

price in writing

BIDDER:_____

10. Furnish and Install Catch Basin Sediment Trap – Per Each

_____ **EA** **$**_____

price in writing

11. Furnish and Install Silt Sock Erosion Control – Per Linear Foot

_____ **LF** **$**_____

price in writing

12. Furnish and Install Vortex Manifold - Complete

_____ **EA** **$**_____

price in writing

13. Reinstall existing Vortex Foot Activator – Complete

_____ **EA** **$**_____

price in writing

14. Reinstall existing Vortex Aqua Dome - Complete

_____ **EA** **$**_____

price in writing

15. Furnish and Install (2) Vortex Side Winder VOR7518 - Complete

_____ **EA** **$**_____

price in writing

16. Furnish and Install (1) Vortex Silhouette No.4 VOR7776 - Complete

_____ **EA** **$**_____

price in writing

17. Furnish and Install (2) Vortex Jetstream No.2 VOR0325 - Complete

_____ **EA** **$**_____

price in writing

18. Furnish and Install (3) Vortex Wall Spray VOR0302 - Complete

_____ **EA** **$**_____

price in writing

19. Furnish and Install Landscape Structures Inc. Wee Planet (Model #173573

_____ **SF** **$**_____

price in writing

20. Furnish and Install Landscape Structures Inc. Super Netplex (Model #254626)

_____ **SF** **$**_____

price in writing

21. Furnish and Install Landscape Structures Inc. Single post Three Bay Swing, (Model #177332)

_____ **SF** **$**_____

price in writing

22. Furnish and Install 4" Concrete Pavement. Complete – Per square foot

_____ **SF** **$**_____

price in writing

23. Furnish and Install 2" Bituminous Concrete Pavement – Per square foot

_____ **SF** **$**_____

price in writing

24. Furnish and Install River Stone on mortar setting base at base of drain – Per square foot

_____ **SF** **$**_____

price in writing

25. Furnish and Install Engineered wood fiber mulch – Per Cubic Yard

_____ **CY** **$**_____

price in writing

26. Furnish and Install 6" pre-cast concrete curb - Per Linear Foot

_____ **LF** **$**_____

price in writing

27. Furnish and Install pre-cast concrete transition curb - Per Linear Foot

_____ **LF** **$**_____

price in writing

28. Furnish and Install Life Floor Safety Tiles – Per Square Foot

_____ **SF** **$**_____

price in writing

BIDDER:_____

29. Furnish and Install Reclaimed Granite Block Seat Wall per Linear Foot

_____ **LF** **$**_____

price in writing

30. Furnish and Install Kompan Combi 5 #FSW105

_____ **LS** **$**_____

price in writing

31. Furnish and Install (4 gauge) 4' Height Welded Wire Mesh Fence

_____ **LF** **$**_____

price in writing

32. Furnish and Install Native Boulders sized at: < 30"x36"

_____ **EA** **$**_____

price in writing

33. Furnish and Install Native Boulders sized at: 36"-42"

_____ **EA** **$**_____

price in writing

34. Furnish and Install (2) Acer rubrum, Red Maple, 2.5-3" Cal. - Complete

_____ **EA** **$**_____

price in writing

35. Furnish and Install (2) Liriodendron tulipera , Tulip Tree, 2.5-3" Cal. - Complete

_____ **EA** **$**_____

price in writing

36. Furnish and Install (1) Ulmus Americana, American Elm, 2.5-3" Cal. - Complete

_____ **EA** **$**_____

price in writing

37. Furnish and Install Screened Loam. Complete – Per Cubic Yard

_____ **CY** **$**_____

price in writing

38. Furnish and Install Grass Seed Mix. Complete – Per Pound

_____ **LBS** **$**_____

price in writing

39. Furnish and Install Cary Co. 55 gal trash receptacles with dome lid on 30”x30”x4” concrete pad Model # 26BTR5/ETR55/DL32 or approved equal.

_____ **LS** **$**_____

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:_____

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

BID DOCUMENTS:

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

DRAWINGS:

SHEET #	NAME
L-1	COVER SHEET
L-2	PROJECT NOTES
L-3	EXISTING CONDITIONS PLAN
L-4	DEMOLITION PLAN
L-5	GRADING AND UTILITY PLAN
L-6	LAYOUT PLAN
L-7	MATERIALS PLAN
L-8	PLANTING PLAN
L-9	CONSTRUCTION DETAILS 1
L-10	CONSTRUCTION DETAILS 2
L-11	CONSTRUCTION DETAILS 3
L-12	CONSTRUCTION DETAILS 4
L-13	VORTEX PLUMBING AND ELECTRICAL LAYOUT

TECHNICAL SPECIFICATION:

- 010000 General Requirements
- 015639 Temporary Tree and Plant Protection
- 024119 Selective Demolition
- 033000 Cast-In-Place Concrete
- 096516.33 Flooring
- 116800 Play Field Equipment and Structures
- 116800.10 Splash Pad Play Equipment
- 312000 Earth Moving
- 312213 Rough Grading
- 312316.13 Trenching
- 312500 Erosion and Sedimentation Control
- 321216 Asphalt Paving
- 321313 Concrete Paving
- 321600.10 Precast Concrete Curbs
- 321816.13 Playground Protective Surfacing
- 323116.10 Ornamental Welded Wire Fences and Gates
- 323300 Site Furnishings
- 329113 Soil Preparation
- 329119 Landscape Grading
- 329200 Turf and Grasses

- 329300 Plants
- 334200 Stormwater Conveyance

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

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 in AutoCad Format 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 **Liza Perez** lperez@providenceri.gov and **Chip Ryan, Landscape Designer** at cryan@providenceri.gov , no later than five (5) working days before the bid opening date.

Megan Gardner is the project contact and can be reached at 401.248.5044

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.

PREVAILING WAGE DECISION

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes Highway

Counties: Rhode Island Statewide 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:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $15.00 per hour (or the applicable wage rate

	listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2022.
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:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $11.25 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2022.

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

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

Modification Number	Publication Date
0	01/07/2022
1	01/21/2022
2	02/18/2022
3	02/25/2022
4	04/01/2022
5	05/06/2022
6	05/27/2022
7	06/03/2022
8	06/24/2022
9	08/26/2022

ASBE0006-006 06/01/2022

	Rates	Fringes
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)	$ 38.30	25.55

ASBE0006-008 09/01/2021

	Rates	Fringes
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
BOILERMAKER	$ 45.87	29.02

BRRI0003-001 06/01/2020

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

BRRI0003-002 03/01/2020

	Rates	Fringes

Marble Setter, Terrazzo Worker & Tile Setter	$ 40.78	28.92

BRRI0003-003 03/01/2020

	Rates	Fringes
Marble, Tile & Terrazzo Finisher	$ 34.10	27.88

CARP0330-001 06/05/2022

	Rates	Fringes
CARPENTER (Includes Soft Floor Layer)	$ 41.46	28.82
Diver Tender	$ 40.72	28.66
DIVER	$ 53.61	28.82
Piledriver	$ 39.72	28.66
WELDER	$ 42.46	28.82

FOOTNOTES:

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

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

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

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

CARP1121-002 01/06/2020

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

	Rates	Fringes
MILLWRIGHT	$ 39.07	29.15

ELEC0099-002 06/01/2022

	Rates	Fringes
ELECTRICIAN	$ 45.86	52.71%
Teledata System Installer	$ 34.40	12.10%+15.12

FOOTNOTES:

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

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

ELEV0039-001 01/01/2022

	Rates	Fringes
ELEVATOR MECHANIC	$ 56.91	36.885+a+b

FOOTNOTES:

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

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

ENGI0057-001 06/01/2022

	Rates	Fringes

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

Operating Engineer: (power plants, sewer treatment plants, pumping stations, tunnels, caissons, piers, docks, bridges, wind turbines, subterranean & other marine and heavy construction work)

GROUP 1	$ 43.55	29.25+a
GROUP 2	$ 41.55	29.25+a
GROUP 3	$ 37.17	29.25+a
GROUP 4	$ 34.32	29.25+a
GROUP 5	$ 40.60	29.25+a
GROUP 6	$ 31.40	29.25+a
GROUP 7	$ 25.40	29.25+a
GROUP 8	$ 37.25	29.25+a
GROUP 9	$ 41.17	29.25+a

a. BOOM LENGTHS, INCLUDING JIBS:

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

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

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

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

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, economobile type equipment, tunnel boring machines, concrete pump and on site concrete plants.

GROUP 3: Oilers on cranes.

GROUP 4: Oiler on crawler backhoe.

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

GROUP 6: Well-point installation crew.

GROUP 7: Utility Engineers and Signal Persons

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

GROUP 9: Boat & tug operator.

ENGI0057-002 05/01/2022

	Rates	Fringes
Power Equipment Operator (highway construction projects; water and sewerline projects which are incidental to highway construction projects; and bridge projects that do not span water)		

GROUP 1	$ 36.70	29.25+a
GROUP 2	$ 31.40	29.25+a
GROUP 3	$ 25.40	29.25+a
GROUP 4	$ 31.98	29.25+a
GROUP 5	$ 35.68	29.25+a
GROUP 6	$ 35.30	29.25+a
GROUP 7	$ 30.95	29.25+a
GROUP 8	$ 32.33	29.25+a
GROUP 9	$ 34.28	29.25+a

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

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

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

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

GROUP 2: Well point installation crew

GROUP 3: Utlity 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

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

GROUP 9: Mechanic & welder

ENGI0057-003 06/01/2022

BUILDING CONSTRUCTION

	Rates	Fringes
Power Equipment Operator		
GROUP 1	$ 42.82	29.25+a
GROUP 2	$ 40.82	29.25+a
GROUP 3	$ 40.60	29.25+a
GROUP 4	$ 36.60	29.25+a
GROUP 5	$ 33.75	29.25+a
GROUP 6	$ 39.90	29.25+a
GROUP 7	$ 39.47	29.25+a
GROUP 8	$ 36.79	29.25+a

a.BOOM LENTHS, 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

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

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 09/16/2021

	Rates	Fringes
IRONWORKER	$ 38.21	30.58

LABO0271-001 05/30/2021

BUILDING CONSTRUCTION

	Rates	Fringes
LABORER		
GROUP 1	$ 33.55	26.15
GROUP 2	$ 33.80	26.15

GROUP 3	$ 34.30	26.15
GROUP 4	$ 34.55	26.15
GROUP 5	$ 35.55	26.15

LABORERS CLASSIFICATIONS

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

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

GROUP 3: Pre-Cast Floor & Roof Plank Erectors

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

GROUP 5: Toxic Waste Remover

LABO0271-002 05/30/2021

HEAVY AND HIGHWAY CONSTRUCTION

	Rates	Fringes
LABORER		
COMPRESSED AIR		
Group 1	$ 53.45	24.15
Group 2	$ 50.98	24.15
Group 3	$ 40.50	24.15
FREE AIR		
Group 1	$ 44.05	24.15
Group 2	$ 43.05	24.15
Group 3	$ 40.50	24.15
LABORER		

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

LABORER CLASSIFICATIONS

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

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

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

GROUP 4: Flagger & signaler

GROUP 5: Toxic waste remover

LABORER - COMPRESSED AIR CLASSIFICATIONS

GROUP 1: Mucking machine operator, tunnel laborer, brake person, track person, miner, grout person, lock tender,

gauge tender, miner: motor person & all others in compressed air

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

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

LABORER - FREE AIR CLASSIFICATIONS

GROUP 1: Grout person - pumps, brake person, track person, form mover & stripper (wood & steel), shaft laborer, laborer topside, outside motorperson, miner, conveyor operator, miner welder, heading motorperson, erecting operator, mucking machine operator, nozzle person, rodperson, safety miner, shaft & tunnel, steel & rodperson, mole nipper, concrete worker, form erector (wood, steel and all accessories), cement finisher (this type of work only), top signal person, bottom person (when heading is 50' from shaft), burner, shield operator and TBM operator

GROUP 2: Change house attendant, powder watchperson

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

PAIN0011-005 06/01/2021

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

PAIN0011-006 06/01/2022

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CITY OF PROVIDENCE, RHODE ISLAND

	Rates	Fringes
GLAZIER	$ 40.78	23.40

FOOTNOTES:

SWING STAGE: $1.00 per hour additional.

PAID HOLIDAYS: Labor Day & Christmas Day.

PAIN0011-011 06/01/2022

	Rates	Fringes
Painter (Bridge Work)	$ 55.00	23.75

PAIN0035-008 06/01/2011

	Rates	Fringes
Sign Painter	$ 24.79	13.72

PLAS0040-001 06/03/2019

BUILDING CONSTRUCTION

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 36.00	27.15

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

PLAS0040-002 07/01/2019

HEAVY AND HIGHWAY CONSTRUCTION

	Rates	Fringes

CEMENT MASON/CONCRETE FINISHER...$ 32.85 22.20

PLAS0040-003 07/01/2019

	Rates	Fringes
PLASTERER.....$	37.55	27.50

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* PLUM0051-002 08/29/2022

	Rates	Fringes
Plumbers and Pipefitters.....$	47.89	31.40

ROOF0033-004 06/01/2022

	Rates	Fringes
ROOFER.....$	42.23	29.00

SFRI0669-001 04/01/2022

	Rates	Fringes
SPRINKLER FITTER.....$	47.55	29.38

SHEE0017-002 12/01/2020

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

TEAM0251-001 05/01/2022

HEAVY AND HIGHWAY CONSTRUCTION

	Rates	Fringes
TRUCK DRIVER		
GROUP 1.....$	28.46	32.10+A+B+C
GROUP 2.....$	28.61	$ 32.10+A+B+C

GROUP 3	$ 28.66	$ 32.10+A+B+C
GROUP 4	$ 28.71	$ 32.10+A+B+C
GROUP 5	$ 28.81	$ 32.10+A+B+C
GROUP 6	$ 29.21	$ 32.10+A+B+C
GROUP 7	$ 29.41	$ 32.10+A+B+C
GROUP 8	$ 28.91	$ 32.10+A+B+C
GROUP 9	$ 29.16	$ 32.10+A+B+C
GROUP 10	$ 28.96	$ 32.10+A+B+C

FOOTNOTES:

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

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

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

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

TRUCK DRIVER CLASSIFICATIONS

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

GROUP 2: Two-axle on low beds

GROUP 3: Two-axle dump truck

GROUP 4: Three-axle dump truck

GROUP 5: Four- and five-axle equipment

GROUP 6: Low-bed or boom trailer.

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

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

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

GROUP 10: Tractor trailer

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

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

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses

(29CFR 5.5 (a) (1) (ii)).

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

Union Rate Identifiers

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

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

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all

rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

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

Union Average Rate Identifiers

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

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

WAGE DETERMINATION APPEALS PROCESS

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

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on

a wage determination matter
* a conformance (additional classification and rate) ruling

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

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

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

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

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

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

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

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

Washington, DC 20210

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

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END OF GENERAL DECISION"

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BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

END OF TABLE OF CONTENTS

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.

1. Repair or replace any existing site amenities, conditions, walkways, or fencing disturbed or damaged during site improvements. Furnish and install silt sack and erosion control compost filter socks for erosion and sedimentation control.
2. Remove and dispose of playground equipment, above grade splashpad features, piping and manifold, site furnishings, chainlink fencing and benches, bit. conc. walkways and cement concrete splashpad, chainlink fencing and gates.
3. Remove and dispose of bituminous asphalt basketball court. Base material maybe used for proposed basketball court.
4. Remove and dispose of bituminous asphalt walkway.
5. Furnish and install a bituminous asphalt basketball court: top coat, paint, and stripe new court.
6. Basketball standards, backboards, and rims to be removed and stockpiled for reuse, striped, sanded and repainted.
7. Furnish and install playground equipment and specified safety surfacing.
8. Furnish and install outdoor fitness equipment and specified safety surfacing.
9. Furnish and install splashpad features, command center cabinet, piping couplings and manifold.couplings, manifold, control panel and backflow preventer.
10. Furnish and install native boulders.
11. Furnish and install welded wire mesh fencing.
12. Furnish and install pre-cast concrete curb with reveal.
13. Furnish and install pre-cast concrete curb set flush.
14. Furnish and install concrete pads for trash receptacles.
15. Furnish and install trash receptacles.
16. Remove and stockpile benches and picnic tables for re-installation.
17. Furnish and install area drain and drain pipe.
18. Remove and dispose of CLF.
19. Install stockpiled granite curb for outdoor classroom seating.
20. Furnish and install shade trees.
21. Clean drain inlet of soil and debris to ensure it is functioning properly.

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

E. WORK UNDER ADD ALTERNATE

1. The following items of Work described will be addressed as an Add Alternate. All work incorporated with the items and any and all incidental to the items shall be accounted for.
2. Add Alternate #1 Furnish and Install basketball court and striping
3. Add Alternate #2 Furnish and Install Water Park .
4. Add Alternate # 3 Furnish and Install outdoor fitness equipment..
5. Add Alternate #4 Install Outdoor classroom seating area from relocated on site granite curbing.

F. 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. Chip Ryan, cryan@providenceri.gov, 401-680-7216

1.2 PROJECT LOCATION

A. 1 Recreation Way, Providence, RI 02904

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 pre-construction 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 to a pre-construction condition.

2.7 SITE MAINTENANCE

A. Control dust from Contractor operations in accordance with specified dust control measures.

B. Maintain the Site during construction in a manner that will not obstruct use on neighborhood streets. Proceed with the work in an orderly manner, maintaining the construction site free of debris and unnecessary equipment or materials.

C. Legally dispose of all debris, rubbish, hazardous materials, oil, and grease in accordance with local ordinances.

D. Maintain safety and security of the construction site and any stockpiled or staged materials or equipment if left on site.

2.8 TRAFFIC CONTROL

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

B. Police Details, if required by the City, shall be paid directly to and coordinated with Providence Public Safety by the Owner.

2.9 DEMOBILIZATION

A. Contractor shall be responsible for site security and safety at all times. Upon substantial completion of the work, Contractor shall remove all excess materials, equipment, construction debris, temporary facilities and construction measures (fencing, signs, barriers, etc.) from the project area, and shall leave the site in suitable condition for full occupancy and use by the Owner. The sedimentation and erosion controls installed as part of the Work may not necessarily be removed at this time (see below).

B. The Owner’s Representative shall be the sole judge of whether the site has been suitably cleaned.

C. Upon suitable stabilization of all disturbed “erodible” areas (e.g. acceptable level of grass growth in loamed and seeded areas, mulch applied and stable in planting areas, etc.), contractor shall remove and legally dispose of all sedimentation and erosion control measures (silt fence, hay bales, catch basin inserts, etc.). See Section 024119 Selective Demolition and 329200 Turf and Grasses for directives and procedures.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS

A. The construction site entrance shall be as indicated on the plans. The Owner will provide access to any locked gate. Any tracked debris from the site present on adjacent roadways shall be removed and the roads swept daily to remove any excess mud, dirt, or rock originating from the site. Trucks hauling material shall be covered and equipped with gates that prevent material from falling out. If present, catch basins within 100 feet of site entry and exit locations shall be protected with inlet sediment control devices and maintained for the duration of the work.

B. Identify, clearly mark and protect all survey monuments, temporary bench marks as well as any adjacent contractors’ work and facilities (if applicable). Repair or replacement shall be at Contractor’s sole expense if damaged by Contractor.

C. Protect existing culverts, sewers, and all other utilities including gas, telecommunications, electricity, and water. Repair or replace at Contractor’s sole expense if damaged by Contractor.

D. Utilize or install drum or sawhorse barricades or backfill all open excavations, holes, trenches, and depressions occurring at construction sites or occurring as part of this work.

3.2 CHANGE ORDER PROCEDURE

A. DESCRIPTION

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

3.3 CHANGE SUBMITTALS

A. When requested, the Contractor shall submit the following to the Owner's Representative in accordance with the Submittals procedures described in these specifications:

1. Proposal cover letter on Contractor's letterhead;
2. Detailed price proposal;

3. Drawings or other explanatory data;
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's Representative. Any revision by the Contractor of a previously accepted submittal must be accepted in writing by the Owner's Representative before implementation.

3.15 SAMPLES

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

3.16 PRODUCT DATA

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

B. SUBMITTAL LOG

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

3.17 QUALITY CONTROL DESCRIPTION

A. This Section provides the requirements for Contract quality control (QC) pertaining to the Work, including:

1. QC of products and workmanship;
2. Manufacturer's instructions; and
3. Manufacturer's certificates and field services.

3.18 WORKMANSHIP

A. The Contractor shall comply with industry standards of the region, except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.

B. The Contractor shall provide suitably-qualified personnel to produce work of specified quality.

C. The Contractor shall secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.

D. The Contractor shall provide materials to match approved samples.

3.19 MANUFACTURER'S INSTRUCTIONS

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

3.20 MANUFACTURER'S CERTIFICATES

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

3.21 TESTING LABORATORY SERVICES (NIC)

A. Not Utilized in this Contract

B. (Modify as Required)

3.22 MANUFACTURER'S FIELD SERVICES

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

3.23 AUTHORITY OF OWNER'S REPRESENTATIVE

A. The Owner's Representative will decide all questions that may arise as to the quality and acceptability of materials furnished. All questions that may arise as to the interpretation of the Contract Drawing and Specifications shall be determined by the Owner's Representative.

B. The Owner and Owner's Representative shall not be responsible for the Contractor's means, methods, techniques, sequences, or procedures of construction or the safety precautions and programs incident thereto, and the Owner's Representative will not be responsible for the Contractor's failure to perform the work in accordance with the Contract Documents.

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

3.24 COORDINATION OF DRAWINGS AND SPECIFICATIONS

A. The Contractor shall take no advantage of any apparent error or omission in the Contract Drawings or Specifications. In the event the Contractor discovers such a discrepancy, error or omission, he shall immediately notify the Owner's Representative. After review and consultation with the Owner's Representative the Owner's Representative will issue clarifications, provide

interpretations and make such corrections as may be deemed necessary for the Contractor to proceed with fulfilling the intent of the Contract Drawings and Specifications.

B. When general reference is made on the Contract Drawings or within the Specifications to any cited Standard Specifications, it shall refer to the current edition of such Specifications or the latest revision thereof or interim Specifications adopted and in effect on the date of Effective Date of Agreement. In the event of a conflict between the Contract Drawings and the specifications, the Owner's Representative shall be notified to provide a clarification to the Contractor.

3.25 COOPERATION WITH UTILITIES

A. The Contractor will notify all utility companies, all pipeline owners, or other parties affected and endeavor to have all necessary adjustments of the public or private utility fixtures, pipelines, and other appurtenances within or adjacent to the limits of construction made as soon as practical.

B. Water lines, gas lines, wire lines, service connections, water and gas meter boxes, water and gas valve boxes, light standards, cableways, signals, and all other utility appurtenances within the limits of the proposed construction which are to be crossed, relocated or adjusted are to be moved by the Contractor or its designated agents, except as otherwise noted on the Contract Drawings. In the case of utility lines, the Contractor shall coordinate with the respective utilities for their removal and relocation.

C. Attention is directed to the possible existence of underground facilities not known to the Owner's Representative or in a location different from that which is shown on the Contract Drawings. The Contractor shall take steps to ascertain the exact location of all underground facilities prior to doing work that may damage such facilities or interfere with their service.

3.26 INDEPENDENT TESTING AND INSPECTION (NIC)

A. Not Applicable under this Contract

3.27 REQUIREMENTS

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

3.28 MATERIAL AND EQUIPMENT

A. DESCRIPTION

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

3.29 MANUFACTURER REQUIREMENTS

A. In general, the Contractor shall receive, handle, and store materials and equipment in accordance with manufacturer's recommendations and in a manner which will protect such items from damage or deterioration.

B. GENERAL

C. Products include the material, equipment, and systems used on this Project. Comply with the Specifications, Drawings and referenced standards as minimum requirements.

3.30 TRANSPORTATION AND HANDLING

A. The Contractor shall receive, handle, and store materials and equipment supplied by him/her in a manner that will protect such items from damage or deterioration in accordance with procedures provided by product manufacturers and the Owner.

B. Promptly inspect the shipments to assure that the products comply with requirements, the quantities are correct, and the products are undamaged.

3.31 STORAGE AND PROTECTION

A. Materials and equipment shall be stored off the ground on blocking or pallets and shall be covered for protection from vandalism and weather damage.

B. Materials and equipment shall be stored, tested, and cleaned prior to use, in accordance with the Specification and all specific manufacturers' requirements. Damaged or nonconforming items shall be removed immediately to a separated storage area for expeditious removal from site.

C. The Contractor shall provide a secure outside storage area in the vicinity of the site.

3.32 SUBSTITUTIONS

A. Substitutions will be considered only when a product becomes unavailable due to no fault of the Contractor or when deemed appropriate by the Owner's Representative

B. Document each request with complete data substantiating the compliance of the proposed substitution with the Contract Documents.

C. The requested substation 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

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.

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.

1.6 QUALITY ASSURANCE

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

1.7 FIELD CONDITIONS

A. The following practices are prohibited within protection zones:

1. Storage of construction materials, debris, or excavated material.
2. Moving or parking vehicles or equipment.
3. Foot traffic.
4. Erection of sheds or structures.
5. Impoundment of water.
6. Excavation or other digging unless otherwise indicated.
7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

B. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones and organic mulch.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Backfill Soil: Stockpiled soil mixed with planting soil of suitable moisture content and granular texture for placing around tree; free of stones, roots, plants, sod, clods, clay lumps, pockets of coarse sand, concrete slurry, concrete layers or chunks, cement, plaster, building debris, and other extraneous materials harmful to plant growth.

1. Mixture: Well-blended mix of two parts stockpiled soil to one part planting soil.

B. Protection-Zone Fencing: Fencing fixed in position and meetingthe following requirements:

1. Plastic Protection-Zone Fencing: Plastic construction fencing constructed of high-density extruded and stretched polyethylene fabric with 2-inch maximum opening in pattern and weighing a minimum of 0.4 lb/ft.; remaining flexible from minus 60 to plus 200 deg F; inert to most chemicals and acids; minimum tensile yield strength of 2000 psi and ultimate tensile strength of 2680 psi; secured with plastic bands or galvanized-steel or stainless-steel

wire ties; and supported by tubular or T-shape galvanized-steel posts spaced not more than 96 inches apart.

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

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.

3.2 PROTECTION ZONES

A. Protection-Zone Fencing: Install protection-zone fencing along edges of protection zones before materials or equipment are brought on the site and construction operations begin in a manner that will prevent people from easily entering protected areas except by entrance gates. Construct fencing so as not to obstruct safe passage or visibility at vehicle intersections where fencing is located adjacent to pedestrian walkways or in close proximity to street intersections, drives, or other vehicular circulation.

B. Protection-Zone Signage: Install protection-zone signage in visibly prominent locations in a manner approved by Owner's Representative. Install one sign on protection-zone fencing. Sign to read "Tree Protection Zone - Do not Disturb". Sign to be printed on 24"x 36" white panel with black lettering at a mimimum of 3" height lettering .

C. Maintain protection zones free of trash.

D. Maintain protection-zone fencing in good condition as acceptable by Owner's Representative and remove when construction operations are complete and equipment has been removed from the site.

1. Do not remove protection-zone fencing, even temporarily, to allow deliveries or equipment access through the protection zone.
2. Temporary access is permitted subject to preapproval in writing by Owner's Representative if a root buffer effective against soil compaction is constructed as directed by Owner's Representative. Maintain root buffer so long as access is permitted.

3.3 EXCAVATION

A. General: Excavate at edge of protection zones and for trenches indicated within protection zones according to requirements in Section 312000 "Earth Moving" unless otherwise indicated.

B. 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.

3.6 REPAIR AND REPLACEMENT

A. General: Repair or replace trees, shrubs, and other vegetation indicated to remain or to be relocated that are damaged by construction operations, in a manner approved by Owner's Representative.

1. Submit details of proposed pruning and repairs.

2. Perform repairs of damaged trunks, branches, and roots within 24 hours according to arborist's written instructions.
3. Replace trees and other plants that cannot be repaired and restored to full-growth status, as determined by Owner's Representative. Replacement trees to be equal to the total diameter of mature tree by multiple equal diameter specimens.

B. Trees: Remove and replace trees tha damaged during construction operations that Owner's Representative determines are incapable of restoring to normal growth pattern.

1. Small Trees: Provide new trees of same size and species as those being replaced for each tree that measures 4" or smaller in caliper size.
2. Large Trees: Provide multiple trees of 2-1/2" - 3" caliper size to equal total diameter of tree being replaced. .
   a. Species: As determined by Owner's Representative.
3. Plant and maintain new trees as specified in Section 329300 "Plants."

C. Soil Aeration: Where directed by Owner's Representative, aerate surface soil compacted during construction. Aerate to loosen soil10 feet beyond drip line and no closer than 36" to tree trunk with air spade.

3.7 DISPOSAL OF SURPLUS AND WASTE MATERIALS

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

END OF SECTION 015639

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Demolition and removal of selected site elements.

B. Related Requirements:

1. Section 015639 "Temporary Tree and Plant Protection" for temporary protection of existing trees and plants that are affected by selective demolition.

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. Preconstruction meeting: Conduct meeting at Project site .

1. Inspect and discuss condition of construction to be selectively demolished.
2. Review areas where existing construction is to remain and requires protection.

1.6 INFORMATIONAL SUBMITTALS

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 following items: 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 Owner's Representative. Hazardous materials will be removed by Owner under a separate contract.

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

PART 2 - PRODUCTS

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 case number to Owner prior to mobilization.

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.

B. Remove temporary barricades and protections where hazards no longer exist.

3.3 SELECTIVE DEMOLITION, GENERAL

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

1. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
2. Dispose of demolished items and materials promptly and legally off site.

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

C. Removed and Reinstalled Items:

1. Clean the items to be reinstalled.
2. Protect items from damage during construction and reinstallation.

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

3.4 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Bituminous asphalt: Demolish in small sections. Using power-driven saw, cut bituminous asphalt full depth t at junctures with construction to remain.

B. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals using power-driven saw, and then remove concrete between saw cuts.

C. 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.

END OF SECTION 024119

SECTION 033000 - CAST-IN-PLACE CONCRETE

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 cast-in-place concrete, including formwork, concrete materials, mixture design, placement procedures, and finishes.

B. Related Requirements:

1. Section 321313 "Concrete Paving" for concrete pavement and walks.

1.3 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash, slag cement, other pozzolans, and silica fume; materials subject to compliance with requirements.

B. W/C Ratio: The ratio by weight of water to cementitious materials.

1.4 PRE CONSTRUCTION MEETINGS

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

1. Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
   a. Concrete Subcontractor.
2. Review concrete repair procedures, and concrete protection.

1.5 ACTION SUBMITTALS

A. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1. Indicate amounts of mixing water to be withheld for later addition at Project site.

B. Construction Joint Layout: Indicate proposed construction joints required to construct the structure.

1. Location of construction joints is subject to approval of the Landscape Architect.

1.6 INFORMATIONAL SUBMITTALS

A. Material Certificates: For each of the following, signed by manufacturers:

1. Admixtures.
2. Form materials and form-release agents.
3. Fiber reinforcement.
4. Joint-filler strips.

1.7 QUALITY ASSURANCE

A. Mockups: Cast concrete formed-surface panels to demonstrate typical joints, surface finish, texture, tolerances, floor treatments, and standard of workmanship.

1. Build panel approximately 100 sq. ft. for formed surface in the location indicated or, if not indicated, as directed by Architect.
2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 FIELD CONDITIONS

A. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

1. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

B. Hot-Weather Placement: Comply with ACI 301 and ACI 305.1, and as follows:

1. 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 to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

A. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:

1. ACI 301.
2. ACI 117.

2.2 FORM-FACING MATERIALS

A. Smooth-Formed Finished Concrete: Form-facing panels that provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.

1. Plywood, metal, or other approved panel materials.
2. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:
   a. Structural 1, B-B or better; mill oiled and edge sealed.
   b. B-B (Concrete Form), Class 1 or better; mill oiled and edge sealed.
3. Overlaid Finnish birch plywood.

B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

C. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch, minimum.

D. Rustication Strips: Wood, metal, PVC, or rubber strips, kerfed for ease of form removal.

2.3 CONCRETE MATERIALS

A. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.

B. Cementitious Materials:

1. Portland Cement: ASTM C 150/C 150M, Type I , .
2. Blended Hydraulic Cement: ASTM C 595/C 595M, Type IL, portland-limestone cement.

C. Normal-Weight Aggregates: ASTM C 33/C 33M, Class 1N coarse aggregate or better, graded. Provide aggregates from a single source.

1. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

D. Lightweight Aggregate: ASTM C 330/C 330M, 3/4-inch nominal maximum aggregate size.

E. Water: ASTM C 94/C 94M and potable.

2.4 FIBER REINFORCEMENT

A. Synthetic Micro-Fiber: Monofilament polypropylene micro-fibers engineered and designed for use in concrete, complying with ASTM C 1116/C 1116M, Type III, [**1/2 to 1-1/2 inches**] long.

1. GFRC Glass Fiber: 200-400 individual glass filaments which are lightly bonded to make up a strand.

2.5 CURING MATERIALS

A. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.

B. Water: Potable.

C. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.

D. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, nondissipating.

2.6 RELATED MATERIALS

A. Reglets: Fabricate reglets of not less than 0.022-inch- thick, galvanized-steel sheet. Temporarily fill or cover face opening of reglet to prevent intrusion of concrete or debris.

B. Dovetail Anchor Slots: Hot-dip galvanized-steel sheet, not less than 0.034 inch thick, with bent tab anchors. Temporarily fill or cover face opening of slots to prevent intrusion of concrete or debris.

2.7 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.

B. Limit water-soluble, chloride-ion content in hardened concrete to 0.06 percent by weight of cement.

C. Admixtures: Use admixtures according to manufacturer's written instructions.

1. Use water-reducing admixture in concrete, as required, for placement and workability.
2. Use water-reducing and -retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a w/c ratio below 0.50.
4. Use corrosion-inhibiting admixture in concrete mixtures where indicated.

2.8 CONCRETE MIXTURES FOR BUILDING ELEMENTS

A. Footings: Normal-weight concrete.

1. Minimum Compressive Strength: 4000 psi 3000 psi at 28 days.
2. Maximum W/C Ratio: [**0.50**] [**0.45**] [**0.40**] <**Insert number**>.
3. Slump Limit: 4 inches , plus or minus 1 inch.
4. Air Content: 5.5 percent, plus or minus 1.5 percent at point of delivery for 1-1/2-inch nominal maximum aggregate size.
5. Air Content: 6 percent, plus or minus 1.5 percent at point of delivery for 3/4-inch nominal maximum aggregate size.

2.9 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M and ASTM C 1116/C 1116M, and furnish batch ticket information.

1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections are completed.

B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect.

C. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.

1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.

D. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.

1. Deposit concrete in horizontal layers of depth not to exceed formwork design pressures and in a manner to avoid inclined construction joints.
2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have

begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

3.2 FINISHING FORMED SURFACES

A. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

1. Apply to concrete surfaces exposed to public view, .

3.3 FINISHING FLOORS AND SLABS

A. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.

1. Apply a trowel finish to surfaces indicated .

B. Broom Finish: Apply a light broom finish to exterior concrete platforms, steps, ramps, and elsewhere as indicated.

1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

3.4 CONCRETE PROTECTING AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 305.1 for hot-weather protection during curing.

B. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.

C. Cure concrete according to ACI 308.1, by one or a combination of the following methods:

1. 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.
   a. Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer.

END OF SECTION 033000

SECTION 096516.33 - FLOORING

PART 1 - GENERAL

1.1 Summary

A. Section Includes: EVA-rubber copolymer tile wet area surfacing system. Related Sections: Division 2 Sitework Sections: Materials and Methods, Excavation, Asphalt Paving, Concrete Paving, Sub-Drainage, Storm Drainage, Fencing, Playground Equipment and Structures.

1.2 References A. American Society for Testing and Materials (ASTM):

A. AS HB198:2014 Pendulum With TRL (55) Soft Rubber Slider Flooring Slip Resistance Test: Ripple Pattern Dry 119, Wet 66

B. ASTM E648-03 is for “Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using Radiant Heat Energy Source – Passed ASTM E303 Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester: Slate Pattern: 34.90; Slate Smooth: 33; Ripple 2.0 Pattern: 44.75ASTM F1292 Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment: Critical Fall Height 1’ or More.

C. Toxic Characteristic Leaching Procedure (TCLP) (RCRA) by Method 30106. NSF Standard 50:26 Interactive Waterplay Venue Surfacing Systems – Certified

1.3 System Description

A. Performance Requirements: Provide a single layer EVA-rubber copolymer tile wet area surfacing system which has been designed, manufactured and installed to meet the following criteria:

1. Shock Attenuation (ASTM F1292) – 3/8” meets 1’ critical fall height; 7/8” meets 4’ critical fall height; 1 ¼” meets 6’ critical fall height a. Gmax - Less than 200. b. Head Injury Criteria - Less than 1000.
2. Toxic Characteristic Leaching Procedure (TCLP) (RCRA) by Method 3010 – Pass
3. NSF Certified to Standard 50:26 Interactive Waterplay Venue Surfacing Systems a. In order to achieve certification products must pass specific performance measures for slip-resistance, impact absorption, chemical resistance, cleanability, UV resistance, and impermeability

1.4 Submittals

A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section. Please contact manufacturer.

B. Product Data: Submit manufacturer’s product data and installation instructions

C. Verification Samples: Submit 1 24x24” full size sample for texture and thickness verification. Color verification to come in standard manufacturer sample packets, texture and thickness subject to inventory.

D. Quality Assurance/Control Submittals: Submit the following:

1. Certificate of qualifications of the certified installers.

E. Closeout Submittals: Submit the following:

1. Submit all warranty documents.

1.5 Quality Assurance

A. Qualifications: Utilize an installer having experience with projects of similar scope and complexity, certified by the manufacturer.

1.6 Delivery, Storage, and Handling

A. General: Comply with Division 1 Product Requirement Section.

B. Delivery: Deliver materials in manufacturer’s original, unopened, undamaged containers with identification labels intact.

C. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at a minimum temperature of 20 degrees F (-7 degrees C) and a maximum temperature of 100 degrees F (38 degrees C).

1.7 Project/Site Conditions

A. Environmental Requirements: Install surfacing system when minimum ambient temperature is 60 degrees F (1 degree C) and maximum ambient temperature is 90 degrees F (32 degrees C). Do not install in rain.

PART 2 - PRODUCTS

2.1 EVA-rubber Copolymer Wet Area Surfacing System

A. Proprietary Products/Systems. EVA-rubber copolymer tile wet area surfacing system, including the following:

1. Life Floor®: a. Material: Life Floor® is a factory-molded surface composed of EVAtrax™, an ethyl vinyl acetate copolymer. Specifier Note: The type of attraction determines the required tile thickness. Depending on ASTM F1292 requirements for critical fall height 6’ select tile thickness from optional thicknesses 1 ¼”. Specify project requirements below and coordinate with working drawings.

a. Thickness and Weight: 3/8” standard: 2lb or 0.9kg: 7/8”: 4.4lbs or 2kg
b. Color:
    1) Life Floor® Patterns: Ripple 2.0
    2) Life Floor® Colors: Ocean; Aviator; Limelight; Seafoam

PART 3 - PART 3: EXECUTION

3.1 Manufacturer’s Instructions

A. Comply with the instructions and recommendations of the manufacturer.

3.2 Examination

A. Site Verification of Conditions: Verify that substrate conditions are suitable for installation of the EVA-rubber copolymer wet area surfacing system.

B. Do not proceed with installation until unsuitable conditions are corrected.

C. Proper drainage is critical to the longevity of the Life Floor surfacing system. Inadequate drainage will cause premature breakdown of the system in affected areas; and void the warranty.

D. Variance. EVA-rubber copolymer wet are surfacing system tiles have an acceptable variance. Acceptable variance for thickness in tiles is plus or minus .020” (0.5 mm.) Acceptable variance in length is plus or minus 0.0625” (1.6 mm). If tiles are found to be outside variance contact manufacturer directly.

3.3 Preparation

A. Surface Preparation: Ensure that the concrete, metal, wood, tile, or fiberglass substrate is level or uniformly sloped since surface variations will be telegraphed through to the rubber tile surface.

1. Concrete must conform to ACI 302 standards, be dry, fully cured (28 days), a minimum density of 100 lbs per ft^3 as well as having a compressive strength greater than 3000 psi for residential installations and 4350 psi for commercial installations.
2. The substrate must be dry, structurally sound, and dimensionally stable. It should befree of any substance or condition that may reduce or prevent the adhesive bond to substrate. This includes, but is not limited to, concrete sealers, curing agents, dirt, wax, tar, paint, and loose toppings. If the surface contains these substances must be mechanically removed. The use of solvents (with the exception of acetone), adhesive remover or acid etching is not recommended.
3. Measure pH of any concrete slab before installing Life Floor. The pH of the slab must be within the suggested range of the adhesive (contact adhesive manufacturer for exact range). If the pH is not within the suggested range, do not install until it fits adhesive manufacturer’s requirements. Failure to do so can result in an impermanent bond.
4. Concrete porosity should be noted. It is always a good practice to perform bond tests before large scale installations. Excessively absorbent (porous) or rough concrete surfaces can

cause an increase in adhesive usage. Surface grinding can be used to smooth an excessively porous or rough surface.

5. Concrete surface prep: Remove protrusions, bumps and ridges by grinding or chipping. Repair, fill & level cracks, holes, depressions, rough or chipped areas of substrate.
6. For new slabs a steel troweled finish is required. Where a troweled finish is specified, finish the surface first with power floats, where applicable; then with power trowels and finally with hand trowels. The first troweling after power floating shall be done by a power trowel and shall produce a smooth surface which is relatively free from defects, but which may still contain some trowel marks. Additional troweling shall be done when a ringing sound is produced as the trowel is moved over the surface. The surface shall be thoroughly consolidated by the hand troweling operations. The finished surface shall be free from any trowel marks, uniform in texture and appearance, and shall be placed to the required tolerance.
7. Substrate should be sloped properly towards drains to allow for proper drainage. Refer to the Model Aquatic Health Code (MAHC) for sloping requirements for your application and facility.
8. Tolerances
    a. Planeness: When a straightedge 3m or 9.84ft (to the nearest foot) long is placed on the surface at any position, no part of the surface shall be more than 3mm or 1/8in below the straightedge.
    b. Smoothness: When a straightedge 150mm or 6in long is placed on the surface at any position, no part of the surface shall be more than 1mm or 1/32in below the straightedge.

3.4 Installation

A. Contact manufacturer for installation.

END OF SECTION 096516.33

SECTION 116800 - PLAY FIELD EQUIPMENT AND STRUCTURES

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 playground equipment as follows:

1. Freestanding playground equipment.
2. Composite playground equipment.

1.3 DEFINITIONS

A. Definitions in ASTM F1487 apply to Work of this Section.

B. IPEMA: International Play Equipment Manufacturers Association.

1.4 PRECONSTRUCTION MEETING

A. Preconstruction meeting: Conduct at Project site .

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For each type of playground equipment.

1. Include plans, elevations, sections, and attachment details.
2. Include fall heights and use zones for playground equipment, coordinated with the critical-height values of protective surfacing specified in Section 321816.13 "Playground Protective Surfacing."

C. Samples for Initial Selection: For each type of exposed finish.

1. Manufacturer's color charts.
2. Include Samples of accessories involving color selection.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer, , and testing agency.

B. Product Certificates: For each type of playground equipment.

C. Material Certificates: For the following items:

1. Shop finishes.

D. Sample Warranty: For manufacturer's special warranties.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For playground equipment and finishes to include in maintenance manuals.

1.8 QUALITY ASSURANCE

A. Manufacturer Qualifications: A firm whose playground equipment components have been certified by IPEMA's third-party product certification service.

1.9 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of playground equipment that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:
   a. Structural failures.
   b. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.
2. Warranty Period: as per manufacturer andVaries from date of Substantial Completion .

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. The following playground equipment and components shall have the IPEMA Certification Seal:

1. Landscape Structures Inc. Wee Planet (Model #173573.
2. Landscape Structures Inc. Super Netplex (Model #254626)
3. Landscape Structures Inc. Single post Three Bay Swing, (Model #177332)
4. Kompan, Combi 5 (Model FSW105)

2.2 PERFORMANCE REQUIREMENTS

A. Safety Standard: Provide playground equipment according to ASTM F1487 .

2.3 MATERIALS

A. Aluminum: Material, alloy, and temper recommended by manufacturer for type of use and finish indicated.

B. Steel: Material types, alloys, and forms recommended by manufacturer for type of use and finish indicated , hot-dip galvanized.

C. Stainless-Steel Sheet: Type 304; finished on exposed faces with No. 2B finish.

D. Opaque Plastics: Color impregnated, UV stabilized, and mold resistant.

E. Transparent Plastic: Abrasion-resistant, UV-stabilized polycarbonate sheet; clear, colorless ; not less than 3/16 inch thick.

F. Suspension Chain and Fittings: ASTM A467/A467M, Class CS, 4/0 or 5/0, welded-straight-link coil chain; hot-dip galvanized ; with commercial-quality, hot-dip galvanized or zinc-plated steel connectors and swing or ring hangers.

G. Suspension Cable: Manufacturer's standard hot-dip galvanized zinc-plated cable; with commercial-quality, hot-dip galvanized or zinc-plated steel connectors and swing or ring hangers.

H. Post Caps: Cast aluminum or color-impregnated, UV-stabilized, mold-resistant polyethylene or polypropylene ; color to match posts.

I. Platform Clamps and Hangers: Cast aluminum or zinc-plated steel, not less than 0.105-inch-nominal thickness .

J. Hardware: Manufacturer's standard; commercial-quality; corrosion-resistant; hot-dip galvanized steel and iron, stainless steel, or aluminum; of a vandal-resistant design.

K. Fasteners: Manufacturer's standard; corrosion-resistant; hot-dip galvanized or zinc-plated steel and iron, or stainless steel; permanently capped; and theft resistant.

2.4 CAST-IN-PLACE CONCRETE

A. Concrete Materials and Properties: Dry-packaged concrete mix complying with ASTM C387/C387M and mixed at site with potable water, according to manufacturer's written instructions, for normal-weight concrete with minimum 28-day compressive strength of 4000 psi, 4-inch slump, and 3/4-inch- maximum-size aggregate.

2.5 IRON AND STEEL FINISHES

A. Baked-Enamel or Powder-Coat Finish: After cleaning and pretreating, apply manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat to a minimum dry film thickness of 2 mils. Comply with coating manufacturer's written instructions for pretreatment, applying, and baking.

B. PVC Finish: UV-stabilized, mold-resistant, slip-resistant, matte-textured, dipped or sprayed-on PVC finish, with flame retardant added, and with minimum dry film thickness of 80 mils . Comply with coating manufacturer's written instructions for pretreatment and application.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for earthwork, subgrade elevations, surface and subgrade drainage, and other conditions affecting performance of the Work including compliance with RIDEM approved Remedial Action Work Plan and Soil Management Plan.

1. Do not begin installation before final grading required for placing playground equipment and protective surfacing is completed.

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

3.2 INSTALLATION

A. Comply with manufacturer's written installation instructions for each equipment type unless more stringent requirements are indicated. Anchor playground equipment securely, positioned at locations and elevations indicated.

1. Maximum Equipment Height: Coordinate installed fall heights of equipment with finished elevations and critical-height values of protective surfacing. Set equipment so fall heights and elevation requirements for age group use and accessibility are within required limits. Verify that playground equipment elevations comply with requirements for each type and component of equipment.

B. Post and Footing Excavation: Excavate holes for posts and footings as indicated in firm, undisturbed or compacted subgrade.

C. Post Set with Concrete Footing: Comply with Section 033000 "Cast-in-Place Concrete" ACI 301 for measuring, batching, mixing, transporting, forming, and placing concrete.

1. Set equipment posts in concrete footing. Protect portion of posts above footing from concrete splatter. Verify that posts are set plumb or at the correct angle, alignment, height, and spacing.

a. Place concrete around posts and vibrate or tamp for consolidation. Hold posts in position during placement and finishing operations until concrete is sufficiently cured.

2. Embedded Items: Follow equipment manufacturer's written instructions and drawings to ensure correct installation of anchorages for equipment.
3. Finishing Footings: Smooth top, and shape to shed water.

END OF SECTION 116800

SECTION 116800.10 - SPLASHPAD PLAY EQUIPMENT

PART 1 - GENERAL

1.1 PRODUCT CONSTRUCTION

A. The aquatic play products shall be suitable for installation in municipal and commercial aquatic facilities and public play areas.

B. Products shall be specifically designed for the use by children and adults and follow the ASTM F2461-09 norm. In addition, products shall be manufactured by a company that has at least five (5) years of experience in the design and engineering of children's aquatic play areas.

C. Any aquatic play product belonging to a new product line or series should demonstrate meeting the effective norm or show the conformity and resistance of the prescribed materials if it is proposed equivalency. The contractor or manufacturer must demonstrate meeting specifications by providing technical documents and drawings to be included in their bid proposal.

D. Play Products: All aquatic play products installed above and below grade shall be manufactured from 304/304L stainless steel. The anchoring system and associated fastening hardware shall be manufactured from 304/304L stainless steel. Rigid centricast fiber reinforced (FRP) and/or molded fiberglass, PVC, filament wound tubing, Galvanized Steel, or Aluminum shall not be utilized for any above or below grade play product structures.

E. Mounting and Assembly Hardware: All hardware and anchoring systems shall be 304/304L stainless steel. All Play Products and Ground Spay systems shall include an integrated anchoring and leveling system facilitating installation and a flush surface finish. Exposed and accessible hardware shall be tamper resistant, requiring a special tool for removal to deter vandalism and theft.

F. Spray nozzles, caps and heads: Shall be manufactured from C360 brass and shall use tamper resistant tools for installation and removal. PVC, Nylon, and Delrin ™, shall not be utilized. All grade level play products are to be furnished with appropriate winterization caps.

G. Polished Finish: All stainless steel above ground features shall have a high- luster polished finish.

H. Material for Paneling, Signage, Water Deflection, and Toe Guards: All Polyethylene, Polyurethane, Elastomers, and Seeflow Polymers used for paneling, signage or water deflection shall be resistant to chlorinated water and be ultraviolet stabilized to inhibit sunlight fading.

I. Safety & Craftsmanship: All accessible edges shall be machined to a rounded finish. All welds shall be watertight, buffed smooth, or polished to a non-visible finish and factory pressure tested. Accessible nozzles and spray heads shall be recessed to ensure a completely safe play environment with no pinch points, head entrapments or protrusion hazards. All products shall be designed in accordance with ASTM F1487, ASTM F-2461 and CSA Z614-98 regulations for public playgrounds.

J. Lexan Polymer: The Lexan Polymer shall be specially selected for aquatic play products and shall have the following characteristics: translucent, highly resistant to shock and impact, vandalism

and must be non-flammable. The polymer shall present dimensional stability a high resistance towards chemical products, ultra violets rays and be transparent presenting crystal clear surface throughout.

K. H. Seeflow Polymer: The Seeflow Polymer shall be specially selected for aquatic play products and shall have the following characteristics: translucent, highly resistant to shock and impact, vandalism and must be non-flammable. The polymer shall present dimensional stability a high resistance towards chemical products, ultra violets rays and be transparent presenting crystal clear surface throughout.

1.2 PLAY PRODUCT INSTALLATION

A. When applicable, templates shall be supplied to facilitate the installation of embedded anchoring equipment.

B. All play products shall have electrical grounding studs incorporated into their associated anchoring equipment. All play products shall be grounded by the installer per local codes.

C. All installation conduit wiring including electrical supply panel, PVC connections, piping, elbows, tees, play product assembly if required and other items relating to the installation shall be supplied by the general contractor.

D. Drawings and Instructions: Product drawings and installation manuals shall be supplied by the manufacturer for ease of installation.

1.3 PRODUCT DELIVERY, STORAGE AND HANDLING

A. All aquatic play products and associated equipment must be properly wrapped and secured in place while in transport to the project site. Care shall be observed during offloading and handling to prevent excessive stress and abrasions.

B. At the site, the play products and associated equipment are to be stored in safe areas, out of the way of traffic and other construction activities, until the actual time of installation. If required, safety barricades or other like precautions must be taken for the protection of public and adjacent property.

C. Protective wrapping on the aquatic play features must be left in place until construction work for the Splashpad is complete.

1.4 COMMISSIONING OF THE SPLASHPAD

A. Upon completion of construction, the general contractor shall provide the owner/operator adequate training on facility operations and maintenance. The contractor may request that the equipment manufacturer and/or manufacturer’s representative provide on-site start-up and training for the owner/operator.

1.5 SPLASHPAD QUALITY ASSURANCE

A. Provide evidence of commitment of quality craftsmanship as demonstrated by the following manufacturer qualifications:

B. The products shall be designed and produced at a facility owned and directly supervised by the supplier.

C. All products shall be shipped from a single source.

D. A full time licensed engineer must be on-staff

E. A full time quality control manager must be on-staff

1.6 EQUIVALENCIES CLAUSES

A. To enable all bids to be judged equitably, they shall be based on the specified products in this document and shown on the drawings.

B. A. The proposal for any substitute products must be attached to the bid separately, identifying the substitute product by its trade name along with any savings it may represent for the client.

C. B. Following the opening of the bid, only those substitutes proposed by the lowest bidder of the specified products, will be considered.

D. C. All substitute approval requests shall be accompanied by manufacturing drawings, including spray zones, sequencing, plumbing and electrical schematics and complete salt spray resisting testing data produced by an independent laboratory for coatings and a written warranty from the manufacturer.

E. No substitution or equivalency submitted will be considered if products to be considered are not part of manufacturer standard existing product line or a written proof that product has manufactured previously by the substitute manufacturer. Please refer to General Clauses 1.1

F. D. Each substitute sample must be presented to the owner/consultant within seven days following the opening of bids. The sample must be completely operational. After this time period, the bidder will be required to supply the original specified product.

G. E. The owner/consultant reserves the right to grant or deny approval for proposed substitutions without prejudice to his rights and his decision shall be final. The above conditions apply to this section independently of any other clauses on the subject found in this document.

H. F. If applicable the products must be interchangeable and of equivalent quality to the materials already installed.

1.7 SPLASHPAD EQUIPMENT WARRANTIES

A. Minimum Warranty periods

B. Splashpad Play Events/Products & Skid Mounted Water Quality Management System Equipment

C. A 25 Year Warranty on stainless steel Play Events/Products, stainless steel anchoring systems and aluminum spheres.

D. A 10 Year Warranty on the reinforced fiberglass skid, sand filter fiberglass tank and cartridge filter fiberglass tank.

E. A 5 Year Warranty on brass components including; spray nozzles, spray caps and spray heads. High-density polyethylene components, polyurethane components, and ultra high molecular weight polyethylene components. The Subterranean vault (enclosure and access hatches), stainless steel automated water distribution manifold, drain boxes, strainers, electrical enclosures, and chemical controllers.

F. A 2 Year Warranty on color coatings, stainless steel hardware & moving parts, fiberglass products, Seeflow Polymers, Soft Touch Elastomers (Toe Guards), subterranean water containments system, circulation pumps, chemical injection pumps, chlorinator systems, acid feed systems, polyvinyl chloride (PVC); piping, fittings, ball valves, check valves, cartridge elements, pressure gauges, chemical sensing probes, motor starters, electrical relays, terminal blocks, actuated valves, programmable logic controller (PLC controller), time switches, manual switches, transformers, breakers, electrical wiring and connections.

G. All warranties are to be managed by the equipment supplier.

1.8 ADDITIONAL REQUIREMENTS/OPTIONS: FILTRATION/CHEMICAL TREATMENT (NIC)

A. The manufacturer is required to offer a complete water quality management system to accommodate the specified aquatic play products. This complete Splashpad automation package, consisting of a FRP water containment system, 2 loop water filtration system, automated chemical treatment system, automated water distribution system, Splashpad operational control and failsafe monitoring systems, Motor starter protection circuitry, and a user activated controller to regulate the use of the play events and their hours of operation.

B. This water quality management system must be pre-assembled, factory tested, and come complete with all the necessary plumbing, pre-wired control systems, pumps, and solenoid valves. The manufacturer must have the capacity to provide technical documentation, operations and maintenance manuals, and technical support for the entire system.

PART 2 - SYSTEMS

2.1 WATER QUALITY MANAGEMENT SYSTEM (NIC)

A. The contractor shall provide and install the following Water Quality Management System as manufactured by VORTEX, 328 Avro St., Montreal, Quebec, Canada H9R 5W5, (514) 694-3868.

B. The Water Quality Management System shall be factory assembled and water pressure tested before delivery.

C. The Water Quality Management System shall be serviceable through a walk in door enclosure, and must be accessible from a minimum of 3 sides.

D. All electrical equipment, including circulation pumps, filtration pumps, chemical controllers, chemical feed pumps, electrical solenoid valves, and flow switches, shall be pre-wired and tested before delivery.

E. All specified flow rates shall be tested and verified before delivery.

F. All equipment shall be mounted directly onto a corrosion resistant fiberglass skid using stainless steel hardware prior to delivery.

G. The Water Quality Management System shall use NSF certified self-priming pump(s), with an integral strainer, to operate the play features.

H. The pump(s) shall be capable of providing the required flow to operate all play features simultaneously at a minimum of 70 feet head.

I. A complete motor starter protection enclosure and circuitry shall be skid mounted, factory assembled and wired to the pumps before delivery.

J. All pump(s) shall be electronically interlocked to start and stop simultaneously, unless otherwise specified.

K. The sand filter(s) shall be NSF-listed for swimming pool filters. It shall be capable of maintaining a filtration rate of less than 30 minutes, at the required filtration rate.

L. A flow control valve and flow meter shall be present to maintain the required filter flow rates. Influent and effluent pressure gauges shall be present on all pumps.

M. A backwash valve kit shall be provided, including a sight glass, flow control valve, and flow meter to control the backwash rate.

N. An automated chemical controller shall be present on the system, capable of monitoring and adjusting pH and ORP levels.

O. The chemical controller shall have an alarm system that shall close all valves to the aquatic play features in case of a loss of proper water chemistry.

P. The chemical controller shall not be capable of injecting chemicals into the system whenever the filter or feature pump is off.

Q. The chemical controller shall be pre-wired to the Splashpad System Controller and feed systems prior to delivery.

R. Both 50 gallon chemical reservoirs shall be double-walled polyethylene with a polyethylene lid and vent to atmosphere.

S. A flow switch shall be present on each pump to monitor flow and shut down the pump system in the event of no flow. It shall be pre-wired to the Splashpad System Controller prior to delivery.

T. The water distribution system must be fabricated out of Stainless Steel 304/304L and be pre-assembled, factory tested, and come complete with all the necessary plumbing.

2.2 SPLASHPAD SYSTEM CONTROLLER (CONNECT TO EXISTING VORTEX MAESTRO CONTROLLER)

A. The Touch Pad programmable logic controller shall be mounted and pre-wired to all Water Quality Management System skid mounded components. Sized according to the number of outputs it is required to control, the programmable logic controller shall be factory programmed with a variety of spray sequences designed according to the requirements of the project. It shall have the flexibility to user modify the sequences using either a transportable memory cartridge or via the Touch Pad user interface.

B. A 24hr/7day user programmable time switch, which shall allow the user to set the operational hours of the facility, shall be incorporated into the operating system. The time switch shall have the ability to be programmed with a different time schedule for each day of the week, and up to 2 time schedules per day.

C. The operating system shall be capable of interfacing with the supplied automated water chemistry control unit, and other pertinent monitoring equipment and shall display current operating parameters on the touch screen interface. In the event of a chemical or equipment fault the operating system shall disable water flow to the patrons and/or initiate an equipment shut down procedure.

D. The operating system shall be supplied with a touch pad user interface with controls for each output, activation device(s), and time switch. These selector switches allow the user to select the operational mode of the components (i.e. Hand, Off and Automatic)

E. The operating system shall be housed in a corrosion resistant NEMA 4X rated enclosure, complete with stainless steel lockable latches.

F. The operating system shall have the capacity to receive signals from activation devices, operating on 24VDC.

G. The operating system shall have the capacity to send signals from the controller PLC to actuated valves operating at 24 VAC.

H. The operating system shall have the ability to automatically purge all water lines based on the user selected time and duration (i.e. every day at 5 am). It shall also, be configured to purge all lines after a user defined period of inactivity (i.e. after 4 hours of inactivity).

I. The operating system shall have the ability to display “help menu” topics within the touch pad screen window for each relevant function. i.e. an on screen step by step tutorial for backwashing the sand filter.

J. The operating system shall contain a 120 VAC primary / 24 VAC secondary transformer with built- in electrostatic shield protection.

2.3 WATER CONTAINMENT SYSTEM (NIC)

A. The contractor shall provide and install the following activation devices as manufactured by VORTEX, 328 Avro St., Montreal, Quebec, Canada H9R 5W5, (514) 694-3868.

B. The 3000 gallon water containment system shall be fabricated from (FRP) an impermeable potable water quality material. The water containment system shall include a 4”inch and a 6” inch check valve fitted to the pump suction ports. All fittings above 6” inch shall be flanged. An automated water level control device, corrosion resistant access ladder, and corrosion resistant lockable access hatch shall be pre installed at the factory. The entire Water Containments System shall be pressure and leak tested at the factory prior to delivery.

C. The water containment system shall have inlets and outlets sized and located per the hydraulic requirements of the Water Quality Management System. (refer to construction drawings)

D. The water containment system shall have an overflow line to connect to the sanitary system.

E. The water containment system shall be equipped with anchoring straps to securely anchor the water containment system.

PART 3 - EXECUTION

3.1 EXECUTION

A. Should the bidder wish to substitute products other than the products specified herein, the bidder shall list products and submit a written Substitution Form of Proposal at least 10 calendar days prior to the date of receipt of bids. The bidder shall submit specifications, cut sheets, and performance data, along with an itemization listing each and every deviation from the specifications herein.

B. The manufacturer shall furnish the purchaser with at least two sets of complete installation and operating manuals. The installation manual will illustrate the installation of the entire system. It shall describe the start-up procedure and day- to- day operation of the system.

3.2 PLAY PRODUCT INSTALLATION

A. When applicable, templates shall be supplied to facilitate the installation of embedded anchoring equipment.

B. All play products shall have electrical grounding studs incorporated into their associated anchoring equipment. All play products shall be grounded by the installer per local codes.

C. All installation conduit wiring including electrical supply panel, PVC connections, piping, elbows, tees, play product assembly if required and other items relating to the installation shall be supplied by the general contractor.

D. Drawings and Instructions: Product drawings and installation manuals shall be supplied by the manufacturer for ease of installation.

3.3 PRODUCT DELIVERY, STORAGE AND HANDLING

A. All aquatic play products and associated equipment must be properly wrapped and secured in place while in transport to the project site. Care shall be observed during offloading and handling to prevent excessive stress and abrasions.

B. At the site, the play products and associated equipment are to be stored in safe areas, out of the way of traffic and other construction activities, until the actual time of installation. If required, safety barricades or other like precautions must be taken for the protection of public and adjacent property.

C. Protective wrapping on the aquatic play features must be left in place until construction work for the Splashpad is complete.

3.4 COMMISSIONING OF THE SPLASHPAD

A. Upon completion of construction, the general contractor shall provide the owner/operator adequate training on facility operations and maintenance. The contractor may request that the equipment manufacturer and/or manufacturer's representative provide on-site start-up and training for the owner/operator.

END OF SECTION 116800.10

SECTION 312000 - EARTH MOVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

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

B. Related Requirements:

1. Section 312213 - Rough Grading
2. Section329119 - Landscape Grading
3. Section 329200 "Turf and Grasses" for finish grading in turf and grass areas, including preparing and placing planting soil for turf areas.

1.3 DEFINITIONS

A. Backfill: Soil material or controlled low-strength material used to fill an excavation.

1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Base Course: Aggregate layer placed between the subbase course and hot-mix asphalt paving.

C. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.

D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

E. Drainage Course: Aggregate layer supporting the slab-on-grade that also minimizes upward capillary flow of pore water.

F. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by the Owner's Representative. Authorized additional excavation and replacement material will be paid for according to Contract provisions for unit prices .
2. Bulk Excavation: Excavation more than 10 feet in width and more than 30 feet in length.
3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by the Owner's Representative. Unauthorized excavation, as well as remedial work directed by the Owner's Representative, shall be without additional compensation.

G. Fill: Soil materials used to raise existing grades.

H. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material 3/4 cu. yd. or more in volume that exceed a standard penetration resistance of 100 blows/2 inches when tested by a geotechnical testing agency, according to ASTM D1586.

I. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.

J. Subbase Course: Aggregate layer placed between the subgrade and base course for hot-mix asphalt pavement, or aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.

K. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.

L. Utilities: On-site underground pipes, conduits, ducts, and cables as well as underground services within buildings.

1.4 PRE CONSTRUCTION MEETINGS

A. Pre Construction meeting: Conduct meeting at Project site .

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

1.5 FIELD CONDITIONS

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

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.

B. Utility Locator Service: Notify utility locator service "Dig Safe System" for area where Project is located before beginning earth-moving operations.

C. Do not commence earth-moving operations until temporary site fencing and erosion- and sedimentation-control measures specified in 312500 - Erosion & Sedimentation Control are in place.

D. Do not commence earth-moving operations until plant-protection measures specified in Section 015639 "Temporary Tree and Plant Protection" are in place.

E. The following practices are prohibited within protection zones:

1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Foot traffic.
4. Erection of sheds or structures.
5. Impoundment of water.
6. Excavation or other digging unless otherwise indicated.
7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

F. Do not direct vehicle or equipment exhaust towards protection zones.

G. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.

B. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; with at least 95 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.

C. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; with at least 95 percent passing a 1-1/2-inch sieve and not more than 8 percent passing a No. 200 sieve.

D. Drainage Course: Narrowly graded mixture of washed crushed stone, or crushed or uncrushed gravel; ASTM D448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and zero to 5 percent passing a No.8 sieve.

E. Sand: ASTM C33/C33M; fine aggregate.

2.2 GEOTEXTILES

A. Subsurface Drainage Geotextile: Nonwoven needle-punched geotextile, manufactured for subsurface drainage applications, made from polyolefins or polyesters; with elongation greater than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:

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

2.3 ACCESSORIES

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

1. Red: Electric.
2. Yellow: Gas, oil, steam, and dangerous materials.
3. Orange: Telephone and other communications.
4. Blue: Water systems.
5. Green: Sewer systems.

PART 3 - EXECUTION

3.1 PREPARATION

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

B. Protect and maintain erosion and sedimentation controls during earth-moving operations.

C. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

3.2 EXPLOSIVES

A. Explosives: Do not use explosives.

3.3 EXCAVATION, GENERAL

A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.

1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.

B. Classified Excavation: Excavate to subgrade elevations. Material to be excavated will be classified as earth and rock. Do not excavate rock until it has been classified and cross sectioned by the Owner's Representative. The Contract Sum will be adjusted for rock excavation according to unit prices included in the Contract Documents. Changes in the Contract Time may be authorized for rock excavation.

1. Earth excavation includes excavating pavements and obstructions visible on surface; underground structures, utilities, and other items indicated to be removed; and soil, boulders, and other materials not classified as rock or unauthorized excavation.

3.4 EXCAVATION FOR WALKS AND PAVEMENTS

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

3.5 SUBGRADE INSPECTION

A. Notify the Owner's Representative when excavations have reached required subgrade.

B. If the Owner's Representative determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.

C. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.

D. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by the Owner's Representative, without additional compensation.

3.6 UNAUTHORIZED EXCAVATION

A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by the Owner's Representative.

1. Fill unauthorized excavations under other construction, pipe, or conduit as directed by the Owner's Representative.

3.7 STORAGE OF SOIL MATERIALS

A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.

1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.8 BACKFILL

A. Place and compact backfill in excavations promptly, but not before completing the following:

1. Construction below finish grade including, where applicable, subdrainage, dampproofing, waterproofing, and perimeter insulation.
2. Removing trash and debris.

B. Place backfill on subgrades free of mud, frost, snow, or ice.

3.9 SOIL FILL

A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.

B. Place and compact fill material in layers to required elevations as follows:

1. Under grass and planted areas, use satisfactory soil material.
2. Under walks and pavements, use satisfactory soil material.

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

3.10 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

1. Provide a smooth transition between adjacent existing grades and new grades.
2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

3.11 SUBBASE AND BASE COURSES UNDER PAVEMENTS AND WALKS

A. Place base course on subgrades free of mud, frost, snow, or ice.

B. On prepared subgrade, place base course under pavements and walks as follows:

1. Install separation geotextile on prepared subgrade according to manufacturer's written instructions, overlapping sides and ends.
2. Place base course material under hot-mix asphalt pavement.
3. Shape base course to required crown elevations and cross-slope grades.
4. Place base course 6 inches or less in compacted thickness in a single layer.
5. Place base course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.

3.12 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace soil material to depth as directed by the Owner's Representative; reshape and recompact.

C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.13 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Transport surplus satisfactory soil to designated storage areas on Owner's property. Stockpile or spread soil as directed by the Owner's Representative.

1. Remove waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION 312000

SECTION 312213 - ROUGH GRADING

PART 4 - GENERAL

4.1 SUMMARY

A. Section Includes:

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

B. Related Sections:

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

4.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. Topsoil Fill Type S4 :

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

B. Subsoil Fill Type S2 :

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

4.3 REFERENCES

A. American Association of State Highway and Transportation Officials:

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

B. ASTM International:

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

4.4 SUBMITTALS

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

4.5 CLOSEOUT SUBMITTALS

A. Section 01000 - General Requirements: Requirements for submittals.

B. Project Record Documents: Accurately record actual locations of utilities remaining by horizontal dimensions, elevations or inverts, and slope gradients.

4.6 QUALITY ASSURANCE

A. Perform Work in accordance with RIDOT Standard Specifications for Road and Bridge Construction, latest edition.

B. Maintain one copy of each document on site

PART 5 - PRODUCTS

5.1 MATERIALS

A. Topsoil: Type S4 as specified in Section 310513.

B. Subsoil Fill: Type S2 as specified in Section 310513.

PART 6 - EXECUTION

6.1 EXAMINATION

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

6.2 PREPARATION

A. Call Local Utility Line Information service at 1-888-DIG-SAFE not less than three (3) working days before performing Work.

1. Request underground utilities to be located and marked within and surrounding construction areas.

B. Identify required lines, levels, contours, and datum.

C. Protect utilities indicated to remain from damage.

D. Protect plant life, lawns, structures, and other features remaining as portion of final landscaping.

E. Protect bench marks, survey control point, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

6.3 TOPSOIL EXCAVATION

A. Excavate topsoil from areas to be further excavated, relandscaped, or regraded,in marked areas, without mixing with foreign materials for use in finish grading.

B. Do not excavate wet topsoil.

C. Stockpile in area designated on site to depth not exceeding 8 feet and protect from erosion. Stockpile material on impervious material and cover over with same material, until disposal.

D. Remove excess topsoil not intended for reuse, from site.

6.4 SUBSOIL EXCAVATION

A. Excavate subsoil from areas to be further excavated, relandscaped, or regraded. marked areas.

B. Do not excavate wet subsoil .

C. When excavating through roots, perform Work by hand and do not remove any roots over 2" in diameter.

D. Stockpile excavated material in area designated on site in accordance with Section 310513 .

E. Benching Slopes: Horizontally bench existing slopes greater than 1: 4 to key placed fill material to slope to provide firm bearing.

F. Stability: Replace damaged or displaced subsoil as specified for fill.

6.5 FILLING

A. Fill areas to contours and elevations with unfrozen materials.

B. Place material in continuous layers as follows:

1. Subsoil Fill: Maximum 8 inches compacted depth.
2. Granular Fill: Maximum 6 inches compacted depth.

C. Maintain optimum moisture content of fill materials to attain required compaction density.

D. Make grade changes gradual. Blend slope into level areas.

E. Repair or replace items indicated to remain damaged by excavation or filling.

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

6.6 TOLERANCES

A. Section 014000 - Quality Requirements: Tolerances.

B. Top Surface of Subgrade: Plus or minus 1/10 foot from required elevation.

6.7 SCHEDULES

A. Subsoil Fill:

1. Fill Type S2 : To subgrade elevation. 6" thick.
2. Compact uniformly to minimum 95% percent of maximum density.

B. Topsoil Fill:

1. Fill Type S4 : To subgrade elevation. 6" thick.
2. Compact uniformly to minimum 90 % percent of maximum density.

END OF SECTION 312213

SECTION 312316.13 - TRENCHING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Excavating trenches for storm water conveyance.
2. Compacted fill from top of utility bedding to subgrade elevations .
3. Backfilling and compaction.

B. Related Sections:

1. Section 321216 - Asphalt Paving: paving over trenches in walkway.
2. Section 329119 - Landscape Grading: Filling of topsoil over backfilled trenches to finish grade elevation.
3. Section 334200 - Storm Water Conveyance

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. Trenching:

1. Basis of Measurement: By cubic yard.
2. Basis of Payment: Includes excavating to required elevations, and Over-excavating: Payment is not made for over-excavated Work nor for replacement materials.

1.3 QUALITY ASSURANCE

A. Perform Work according to RIDOT standards.

B. Prepare excavation protection plan under direct supervision of professional engineer experienced in design of this Work and licensed in State of Rhode Island .

1.4 FIELD MEASUREMENTS

A. Verify field measurements prior to fabrication.

1.5 COORDINATION

A. Verify Work associated with lower elevation utilities is complete before placing higher elevation utilities.

PART 2 - PRODUCTS

2.1 FILL MATERIALS

A. Subsoil Fill: Type S2.

2.2 ACCESSORIES

A. Geotextile Fabric: Non-biodegradable, non-woven.

PART 3 - EXECUTION

3.1 SUSTAINABILITY CHARACTERISTICS

3.2 LINES AND GRADES

A. Lay pipes to lines and grades indicated.

1. Architect/Engineer Owner may make changes in lines, grades, and depths of utilities when changes are required for Project conditions.

B. Use laser-beam instrument with qualified operator to establish lines and grades.

C. Maintain grade alignment of pipe using string line parallel with grade line and vertically above centerline of pipe.

1. Establish string line on level batter boards at intervals of not more than 25 feet.
2. Install batter boards spanning trench, rigidly anchored to posts driven into ground on both sides of trench.
3. Set three adjacent batter boards before laying pipe to verify grades and line.
4. Determine elevation and position of string line from elevation and position of offset points or stakes located along pipe route.
5. Do not locate pipe using side lines for line or grade.

3.3 PREPARATION

A. Call Dig Safe (888 -344-7233) not less than three working days before performing Work.

1. Request underground utilities to be located and marked within and surrounding construction areas.

B. Identify required lines, levels, contours, and datum locations.

C. Protect plant life, lawns, rock outcropping and other features remaining as portion of final landscaping.

D. Protect bench marks, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

E. Maintain and protect above and below grade utilities indicated to remain.

F. Establish temporary traffic control and detours when trenching is performed in public right-of-way. Relocate controls as required during progress of Work.

3.4 TRENCHING

A. Excavate subsoil required for:

1. Drainage
2. Splashpad Water Lines
3. Drainage pipes.

B. Remove lumped subsoil, boulders, and rock above 3" diameter, remove larger material as specified in Section 312213.

C. Perform excavation in accordance with State & Local requirements.

D. Do not advance open trench more than 200 feet ahead of installed pipe.

E. Excavate bottom of trenches maximum 24 inches wider than outside diameter of pipe.

F. Excavate trenches to depth indicated on Drawings. Provide uniform and continuous bearing and support for bedding material and pipe .

G. When subsurface materials at bottom of trench are loose or soft, excavate to greater depth as directed by the Owner's Representative until suitable material is encountered.

H. Cut out soft areas of subgrade not capable of compaction in place. Backfill with Type S2 fill and compact to density equal to or greater than requirements for subsequent backfill material.

I. Correct areas over excavated areas with compacted backfill as specified for authorized excavation or replace with fill concrete as directed by the Owner's Representative.

J. Stockpile subsoil in area designated on Site to depth not exceeding 8 feet and protect from erosion.

3.5 BACKFILLING

A. Backfill trenches to contours and elevations with unfrozen fill materials.

B. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen, or spongy subgrade surfaces.

C. Place geotextile fabric over subsoil prior to placing subsequent fill materials. .

D. Place fill material in continuous layers and compact according to schedule at end of this Section.

E. Maintain optimum moisture content of fill materials to attain required compaction density.

F. Do not leave more than 50 feet of trench open at end of working day.

G. Protect open trench to protect the public from danger.

3.6 TOLERANCES

A. Top Surface of Backfilling : Plus or minus 1 inch 0.08 feet from required elevations.

3.7 PROTECTION OF FINISHED WORK

A. Reshape and re-compact fills subjected to vehicular traffic during construction.

END OF SECTION 312316.13

SECTION 312500 - EROSION AND SEDIMENTATION CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 REFERENCES

A. EPA document titled: "Stormwater Management for Construction Activities — Developing Pollution Prevention Plans and Best Management Practices" document number EPA 832-R-92¬005, dated 1992, or most recent edition. State, County Conservation Districts or local Conservation Commission standards can be substituted for the EPA standard if the State, County or Local Conservation Commission standards is equal to, or more detailed than, the EPA standard.

B. State of Rhode Island Department of Transportation Standard Specifications for Road and Bridge Construction, Current Edition with latest addenda.

1.3 SUBMITTALS

A. Submit, in accordance with Division 01 10 00 – General Requirements: Submittal Procedures ten (10) days after award of Contract, technical product literature for all commercial products to be used for erosion and sedimentation control.

B. If a NPDES General Permit is required, Contractor shall, prior to the start of construction:

C. Prepare and submit the EPA NPDES Notice of Intent to Discharge to the applicable EPA office in accordance with EPA regulations. Submit one copy of the permit to Owner’s Representative for informational purposes only.

1. Prepare and submit a Stormwater Pollution Prevention Plan (SWPPP) in accordance with the U.S. Environmental Protection Agency (EPA) National Pollution Discharge Elimination System (NPDES) General Permit for this work. Submit one copy of the permit to Owner’s Representative for informational purposes only.

1.4 QUALITY ASSURANCE

A. Be responsible for the timely installation and maintenance of all erosion and sedimentation control devices necessary to prevent the movement of sediment from the construction site to off-site areas or into the stream system via surface runoff or underground drainage systems. Measures in addition to those shown on the Drawings necessary to prevent the movement of sediment off site shall be installed, maintained, removed, and cleaned up at the expense of the Contractor. No additional charges to the Owner will be considered.

B. Where Contractor's efforts to control erosion and sediment have been demonstrated to be ineffective or potentially ineffective in the opinion of the Owner's Representative, the Owner's Representative may order that additional measures be implemented and constructed at no additional cost to the Owner.

C. Perform Work in accordance with requirements of Section 310513, Section 312213.

D. Perform Work according to Municipality of Public Works standards.

PART 2 - PRODUCTS

2.1 MATERIALS

A. When work is performed outside of normal seeding window straw mulch shall be utilized on all newly graded areas to protect areas against washouts and erosion. Straw mulch shall be comprised of threshed straw of oats, wheat, barley, or rye that is free from noxious weeds, mold or other objectionable material. The straw mulch shall contain at least 50 percent by weight of material to be 10-in or longer. Straw shall be in an air-dry condition and suitable for placement with blower equipment.

B. If newly seeded areas contain slopes greater than 4:1 install Jute Mesh/Netting for erosion control. Jute Mesh should conform to following specifications:

1. Open Area: 70 - 75%
2. Mesh size: 11mm x 18mm
3. Water Absorption: >450% of fabric weight
4. Thickness: 0.25 inch (6 mm)
5. Recommended shear stress: 0.45 lbs./sq.ft. (22 N/sq.m)
6. Recommended flow capacity: 6 fps (1.8 m/s)

C. Compost Filter Sock

1. Machine produced.
2. Straw filled tubes of compacted straw of rice, wheat or barley.
3. Compost filter sock to be certified as weed free.
4. Netting for tubes to be seamless, high density polyethylene with ultra violet inhibitors.
5. Roll length to be 10.0 feet to 25.0 feet.
6. Weight per linear foot, 12-inch: 2.5 lbs. minimum 9-inch: 1.5 lbs. minimum

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

PART 3 - EXECUTION

3.1 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

3.2 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 321216 - ASPHALT PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Hot-mix asphalt paving.

B. Related Requirements:

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

1.3 UNIT PRICES

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

1.4 PRE CONSTRUCTION MEETINGS

A. Pre Construction Meeting: Conduct meeting at Project site .

1.5 ACTION SUBMITTALS

A. Product Data: Include technical data and tested physical and performance properties.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer.

B. Material Certificates: For each paving material. Mixes containing recycled materials will perform equal to mixes produced for all new materials.

C. Material Test Reports: For each paving material, by a qualified testing agency.

1.7 QUALITY ASSURANCE

A. Manufacturer Qualifications: A paving-mix manufacturer registered with and approved by authorities having jurisdiction or the DOT of state in which Project is located .

B. Testing Agency Qualifications: Qualified in accordance with ASTM D3666 for testing indicated.

C. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of RIDOT Standard Specifications for Road and Bridge Construction for asphalt paving work of for asphalt paving work.

1. Measurement and payment provisions and safety program submittals included in standard specifications do not apply to this Section.

1.8 FIELD CONDITIONS

A. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp, if rain is imminent or expected before time required for adequate cure, or if the following conditions are not met:

1. Asphalt Base Course: Minimum surface temperature of 40 deg F and rising at time of placement.
2. Asphalt Surface Course: Minimum surface temperature of 60 deg F at time of placement.

PART 2 - PRODUCTS

2.1 AGGREGATES

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

B. Coarse Aggregate: ASTM D692/D692M, sound; angular crushed stone, crushed gravel, or cured, crushed blast-furnace slag.

C. Fine Aggregate: ASTM D1073 , sharp-edged natural sand or sand prepared from stone, gravel, cured blast-furnace slag, or combinations thereof.

1. For hot-mix asphalt, limit natural sand to a maximum of 20 percent by weight of the total aggregate mass.

D. Mineral Filler: ASTM D242/D242M , rock or slag dust, hydraulic cement, or other inert material.

2.2 ASPHALT MATERIALS

A. Asphalt Binder: ASTM D6373 binder designation PG 64-22 .

B. Asphalt Cement: ASTM D 3381/D 3381M for viscosity-grade material ASTM D 946/D 946M for penetration-graded material.

C. Cutback Prime Coat: ASTM D 2027/D 2027, medium-curing cutback asphalt, MC-30 or MC-70.

D. Emulsified Asphalt Prime Coat: ASTM D 977 or emulsified asphalt, or ASTM D 2397M or cationic emulsified asphalt, slow setting, diluted in water, of suitable grade and consistency for application.

E. Water: Potable

2.3 AUXILIARY MATERIALS

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

2.4 MIXES

A. <Click to insert sustainable design text for recycled content.>

B. Hot-Mix Asphalt: Dense-graded, hot-laid, hot-mix asphalt plant mixes ; designed in accordance with procedures in AI MS-2, "Asphalt Mix Design Methods"; and complying with the following requirements:

1. Provide mixes with a history of satisfactory performance in geographical area where Project is located.
2. Base Course: Class 9.5 .
3. Surface Course: Class 19.0 .

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that subgrade is dry and in suitable condition to begin paving.

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

3.2 PREPARATION

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

B. Proof-roll subgrade below pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

1. Completely proof-roll subgrade in one direction , repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph.
2. Proof-roll with a loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons.
3. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by the Owner's Representative, and replace with compacted backfill or fill as directed.

3.3 SURFACE PREPARATION

A. Ensure that prepared subgrade has been proof-rolled and is ready to receive paving. Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces.

3.4 HOT-MIX ASPHALT PLACEMENT

A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand in areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted.

1. Place hot-mix asphalt base course in number of lifts and thicknesses indicated.
2. Place hot-mix asphalt surface course in single lift.
3. Spread mix at a minimum temperature of 250 deg F.
4. Begin applying mix along centerline of crown for crowned sections and on high side of one-way slopes unless otherwise indicated.
5. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.

B. Place paving in consecutive strips not less than 10 feet wide unless infill edge strips of a lesser width are required.

1. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Overlap mix placement about 1 to 1-1/2 inches from strip to strip to ensure proper compaction of mix along longitudinal joints.
2. Complete a section of asphalt base course before placing asphalt surface course.

C. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

3.5 COMPACTION

A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot hand tampers or with vibratory-plate compactors in areas inaccessible to rollers.

1. Complete compaction before mix temperature cools to 185 deg F.

B. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.

C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:

1. Average Density: 96 percent of reference laboratory density in accordance with ASTM D6927 , but not less than 94 percent or greater than 100 percent.
2. Average Density: 92 percent of reference maximum theoretical density in accordance with ASTM D2041/D2041M, but not less than 90 percent or greater than 96 percent.

D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.

E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.

F. Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.

G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.

H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.6 INSTALLATION TOLERANCES

A. Pavement Thickness: Compact each course to produce thickness indicated within the following tolerances:

1. Base Course: Plus or minus 1/2 inch.
2. Surface Course: Plus 1/4 inch, no minus.

B. Pavement Surface Smoothness: Compact each course to produce surface smoothness within the following tolerances as determined by using a 10-foot straightedge applied transversely or longitudinally to paved areas:

1. Base Course : 1/2 inch. .

3.7 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

B. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined in accordance with ASTM D3549/D3549M.

C. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.

D. In-Place Density: Testing agency will take samples of uncompacted paving mixtures and compacted pavement in accordance with ASTM D979/D979M .

1. Reference maximum theoretical density will be determined by averaging results from four samples of hot-mix asphalt-paving mixture delivered daily to site, prepared in accordance with ASTM D2041/D2041M, and compacted in accordance with job-mix specifications.
2. In-place density of compacted pavement will be determined by testing core samples in accordance with ASTM D1188 or ASTM D2726/D2726M.
    a. One core sample will be taken for every 1000 sq. yd. or less of installed pavement, with no fewer than three cores taken.
    b. Field density of in-place compacted pavement may also be determined by nuclear method in accordance with ASTM D2950/D2950M and coordinated with ASTM D1188 or ASTM D2726/D2726M.

E. Replace and compact hot-mix asphalt where core tests were taken.

F. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.

END OF SECTION 321216

SECTION 321313 - CONCRETE PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes Concrete Paving Including the Following:

1. Splashpad surface.
2. Pads for trash receptacles.

B. Related Requirements:

1. Section 033000 "Cast-in-Place Concrete" for general building applications of concrete.

1.3 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash, slag cement, and other pozzolans.

B. W/C Ratio: The ratio by weight of water to cementitious materials.

1.4 PRE CONSTRUCTION MEETINGS

A. Pre construction meeting: Conducted at Project site .

1. Review methods and procedures related to concrete paving, including but not limited to, the following:
   a. Concrete mixture design.
   b. Quality control of concrete materials and concrete paving construction practices.

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. Samples for Verification: For each type of product or exposed finish, prepared as Samples of size indicated below:

1. Exposed Aggregate: 5 lb Sample of each mix.

D. Design Mixtures: For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified ready-mix concrete manufacturer .

B. Material Certificates: For the following, from manufacturer:

1. Cementitious materials.
2. Steel reinforcement and reinforcement accessories.
3. Fiber reinforcement.
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 C94/C94M 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. Testing Agency Qualifications: Qualified according to ASTM C1077 and ASTM E329 for testing indicated.

1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.

C. 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 the Owner's Representative and not less than 48"x48" .
3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless the Owner's Representative 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

A. Preconstruction Testing Service: Engage a qualified independent testing agency to perform preconstruction testing on concrete paving mixtures.

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.
2. Cover steel reinforcement with water-soaked burlap, so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
3. Fog-spray forms , steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

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.

1. Use flexible or uniformly curved forms for curves with a radius of 100 feet or less.

B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and that will not impair subsequent treatments of concrete surfaces.

2.3 STEEL REINFORCEMENT

A. Plain-Steel Welded-Wire Reinforcement: ASTM A1064/A1064M, fabricated from galvanized-steel wire into flat sheets.

B. Plain-Steel Wire: ASTM A1064/A1064M, .

2.4 CONCRETE MATERIALS

A. Cementitious Materials: Use the following cementitious materials, of same type, brand, and source throughout Project:

1. Portland Cement: ASTM C150/C150M, gray portland cement Type I .
2. Blended Hydraulic Cement: ASTM C595/C595M, Type IS, portland blast-furnace slag Type IP, portland-pozzolan Type IL, Portland-limestone Type IT, ternary blended cement.

B. Normal-Weight Aggregates: ASTM C33/C33M, 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. Exposed Aggregate: Selected, hard, and durable; washed; free of materials with deleterious reactivity to cement or that cause staining; from a single source, with gap-graded coarse aggregate as follows:

1. Aggregate Sizes: 3/8" nominal.

D. 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. Water-Reducing Admixture: ASTM C494/C494M, Type D.
2. High-Range, Water-Reducing Admixture: ASTM C494/C494M, Type F.

E. Color Pigment: ASTM C979/C979M, synthetic mineral-oxide pigments or colored water-reducing admixtures; color stable, nonfading, and resistant to lime and other alkalis.

1. <Click here to find, evaluate, and insert list of manufacturers and products.>
2. Color: As indicated by manufacturer's designation As selected by Architect from manufacturer's full range .

F. Water: Potable and complying with ASTM C94/C94M.

2.5 FIBER REINFORCEMENT

A. Synthetic Fiber, Monofilament Fibers: Monofilament polypropylene fibers engineered and designed for use in decorative concrete paving, complying with ASTM C1116/C1116M, Type III, 1/2 to 1-1/2 inches long.

1. <Click here to find, evaluate, and insert list of manufacturers and products.>

B. Synthetic Fiber, Fibrillated Fibers: Fibrillated polypropylene fibers engineered and designed for use in decorative concrete paving, complying with ASTM C1116/C1116M, Type III, 1/2 to 1-1/2 inches long.

2.6 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 C171, polyethylene film or white burlap-polyethylene sheet.

C. Water: Potable.

2.7 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. 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, 3/4-inchNominal Maximum Aggregate Size: 6 5 percent plus or minus 1-1/2 percent.

C. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.

D. 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: 8 inches , plus or minus 1/2 inch.

2.8 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C94/C94M and ASTM C1116/C1116M. Furnish batch certificates for each batch discharged and used in the Work.

1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

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 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 INSTALLATION OF STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.

C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.

D. Install welded-wire reinforcement in lengths as long as practicable. Lap adjoining pieces at least one full mesh, and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

E. Zinc-Coated Reinforcement: Use galvanized-steel wire ties to fasten zinc-coated reinforcement. Repair cut and damaged zinc coatings with zinc repair material.

F. Epoxy-Coated Reinforcement: Use epoxy-coated steel wire ties to fasten epoxy-coated reinforcement. Repair cut and damaged epoxy coatings with epoxy repair coating according to ASTM D3963/D3963M.

G. Install fabricated bar mats in lengths as long as practicable. Handle units to keep them flat and free of distortions. Straighten bends, kinks, and other irregularities, or replace units as required before placement. Set mats for a minimum 2-inch overlap of adjacent mats.

3.5 JOINTS

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

1. When joining existing paving, place transverse joints to align with previously placed joints unless otherwise indicated.

B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.

1. Provide tie bars at sides of paving strips where indicated.

C. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows , to match jointing of existing adjacent concrete paving:

1. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.
   a. Tolerance: Ensure that sawed joints are within 3 inches either way from centers of dowels.

2. Doweled Contraction Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.

D. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 1/4-inch 3/8-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

3.6 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.

1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies , reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating reinforcement dowels joint devices.

H. Screed paving surface with a straightedge and strike off.

I. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleedwater appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

3.7 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.

3.8 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 curing or a combination of these as follows:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
   a. Water.
   b. Continuous water-fog spray.
   c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Immediately repair any holes or tears occurring during installation or curing period, using cover material and waterproof tape.
3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating, and repair damage during curing period.

3.9 PAVING TOLERANCES

A. Comply with tolerances in ACI 117 and as follows:

1. Elevation: 3/4 inch.
2. Thickness: Plus 3/8 inch, minus 1/4 inch.
3. Surface: Gap below 10-feet- long; unleveled straightedge not to exceed 1/2 inch.
4. Alignment of Tie-Bar End Relative to Line Perpendicular to Paving Edge: 1/2 inch per 12 inches of tie bar.
5. Lateral Alignment and Spacing of Dowels: 1 inch.

6. Vertical Alignment of Dowels: 1/4 inch.
7. Alignment of Dowel-Bar End Relative to Line Perpendicular to Paving Edge: 1/4 inch per 12 inches of dowel.
8. Joint Spacing: 3 inches.
9. Contraction Joint Depth: Plus 1/4 inch, no minus.
10. Joint Width: Plus 1/8 inch, no minus.

3.10 REPAIR AND PROTECTION

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

B. Drill test cores, where directed by the Owner's Representative, 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 321600.10 - PRECAST CONCRETE CURBS

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

A. The Work of this Section consists of providing labor, equipment, materials, incidental work, and construction methods necessary to furnish and install the precast concrete curb, as indicated on the Contract Documents and as specified.

1.2 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract, including General Requirements, apply to this Section.

B. The following items of related work are specified and included in other Sections of the Specifications:

1. Section 32 12 16 Asphalt
2. Section 321313 Concrete Paving

1.3 REFERENCES

A. The following standards shall apply to the work of this Section.

1. State of Rhode Island Department of Transportation (RIDOT):
   a. Specifications Standard Specifications for Road and Bridge Construction
2. American Society for Testing and Materials (ASTM):
   a. A 615 Deformed and Plain Billet - Steel Bars for Concrete Reinforcement

1.4 SUBMITTALS

A. A. Submit complete shop drawings of precast concrete curbing for Owner's Representative’s approval.

1. Shop drawings shall indicate size, dimension, and finish of each curb type.
2. Submit a complete schedule for quantity, lengths, and size for all curbing on the project.

B. Submit manufacturer’s literature and test reports for all curbing required for project; include each curb type.

1.5 1.5 QUALITY ASSURANCE

A. A. Unless otherwise indicated, pre-cast concrete curb materials and construction shall conform to the applicable portions of the following:

1. RIDOT Specifications Section 906, "Curbing for Roadways".
2. Concrete for all curbing shall be supplied from a single source for entire project
3. Source of concrete shall be approved by Owner's Representative prior to construction

1.6 1.6 DELIVERY, STORAGE, AND HANDLING

A. Precast concrete curb units shall be delivered to the job adequately protected from damage during transit.

B. Curb units shall be stored off the ground with wood cribbing between each unit. Curb shall be protected against staining, chipping, and other damage. Cracked, chipped, or stained units will be rejected and shall not be employed in the work.

C. Store pallets of curbing on pavement or other hard, durable surfaces that will not compact as a result of the weight of the pallets of curbing. Prevent steel strapping of pallets from rusting and staining of pavement. Remove and replace all pavement stained by rusting steel strapping of pallets.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Precast curb units shall be the product of one of the following precast concrete curb suppliers, or an approved equal:

1. Means Precast, Braintree, MA 02184, Tel. (781) 843-1909.
2. Durastone Corporation, P.O. Box 1114, 150 Higginson Avenue, Lincoln, RI 02865, Tel. (401) 596-7225.
3. Precast Specialties Corp., 999 Adams Street, P.O. Box 86, Abington, MA 02351, Tel. (781) 878-7220.

2.2 2.2 CONCRETE MATERIALS

A. Formwork:

1. Forms shall be wood or steel and shall have a "smooth form" surface to produce required finish on exposed portions of precast curbing.

B. Reinforcing Steel:

1. Steel reinforcing bars shall be deformed type conforming to ASTM A 615.

2. Unless otherwise indicated on the Contract Documents, provide a minimum of two No. 3 bars for each curb unit.

C. Concrete for Precast Curbing:

1. Concrete shall be air-entrained type with a minimum 28 day compressive strength of 4000 psi, 3/4inches aggregate, 610 lb. Portland cement per cubic yard. Air content shall be 5% to 7%.

2.3 SIZE AND DIMENSIONS

A. Straight curb units shall be 6 inches x 18 inches, 6 feet lengths.

B. Curved curbing shall be employed on radii up to 100 feet.

C. Arris exposed to traffic shall be rounded to a 3/4 inches radius. Back arris line shall be straight.

D. Curb units shall be true to line, plane, and dimensions.

2.4 FINISH

A. Curb units shall have a uniform, smooth texture finish, free from cracks and other defects. Color of units shall be uniform.

B. Curb shall have no paint, mortar, or other coating.

2.5 CURING

A. Precast units shall be moist cured by steam or water for a sufficient length of time for the concrete to obtain the required compressive strength. Curing compounds will not be permitted.

PART 3 - EXECUTION

3.1 SETTING CURB

A. Curb shall be set in an 18-inch wide trench, with trench bottom at 6 inches below bottom of curb. Excavation shall be filled to required level with dense graded crushed stone provided, installed and paid for under the work of Section 312000 - Earth Excavation, Backfill, Fill, & Grading.

1. All spaces under the curb shall be filled with compacted dense graded crushed stone so that the curb will be completely supported throughout its length.
2. Vertical face of vertical curb shall be plumb, with curb top parallel to adjacent surface.
3. Curb shall be set accurately to line and grade. Curb alignment shall be uniform, with smooth and continuous arris lines. Radius curbs shall meet with a common tangent.

B. Curb units shall be placed accurately to line. Final points (locations where lines of curb intersect) shall be joined by closure pieces made to order and not less than 30 inches in length.

C. Curb shall not be field cut except with the prior permission of the Owner's Representative.

1. If field cutting of curb is permitted by the Owner's Representative, the curb shall be cut using concrete cutting tools to provide a smooth and uniform saw cut. Sawn end shall match manufactured end, in every respect. Chamfers shall be ground to match abutting curb unit. Field chamfers and sawn end profiles shall be finished with manufacturer recommended bonding agent, to match surface finish of curb unit. In no case, shall field sawn end cut be exposed to view.

D. Curb units shall be butted together with joints between curb units (both front and back) no greater than 1/8 inches. Joint space shall not be filled with mortar.

E. Set curb to required line and grade. Where indicated, provide transition sections to create smooth transition between standard curb and flush curb at entrances, ramps, and all other locations requiring transition curbing as determined by the Owner's Representative.

F. Backfill material on each side of curb shall be as specified for adjacent surface and shall be thoroughly compacted by means of power tampers. Extreme care shall be taken not to destroy alignment. Curb sections disturbed during backfilling or otherwise shall be reset to line and grade, and properly backfilled.

G. Remove and reset all curb sections that do not conform to the vertical and horizontal alignment shown on the Contract Documents.

END OF SECTION 321600.10

SECTION 321816.13 - PLAYGROUND PROTECTIVE SURFACING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Organic loose-fill surfacing.

1.3 DEFINITIONS

A. Definitions in ASTM F 2223 apply to Work of this Section.

B. Critical Height: Standard measure of shock attenuation according to ASTM F 2223; same as "critical fall height" in ASTM F 1292. According to ASTM F 1292, this approximates "the maximum fall height from which a life-threatening head injury would not be expected to occur."

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples for Verification: For each type of protective surfacing and exposed finish.

1. Loose-Fill Surfacing: Minimum 1 quart.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer .

B. Sample Warranty: For manufacturer's special warranty.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For playground protective surfacing to include in maintenance manuals.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials , from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1.8 WARRANTY

A. Special Warranty: Manufacturer and Installer agree to repair or replace components of protective surfacing that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:
   a. Reduction in impact attenuation as measured by reduction of critical fall height.
   b. Deterioration of protective surfacing and other materials beyond normal weathering.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations: Obtain protective surfacing materials , including loose-fill accessories, from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

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

B. Accessibility Standard: Minimum surfacing performance according to ASTM F 1951.

2.3 ORGANIC LOOSE-FILL SURFACING

A. Engineered Wood Fiber: ASTM F 2075; containing no bark, leaves, twigs, or foreign or toxic materials ; tested for accessibility according to ASTM F 1951.

1. Critical Height: and as recommended by play and fitness equipment manufacturer .
2. Uncompressed Material Depth: Not less than as required for critical height indicated .

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for subgrade elevations, slope, and drainage and for other conditions affecting performance of the Work.

1. Verify that substrates are sound and without high spots, ridges, holes, and depressions.

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

3.2 PREPARATION

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

3.3 INSTALLATION OF LOOSE-FILL SURFACING

A. Apply components of loose-fill surfacing according to manufacturer's written instructions to produce a uniform surface.

B. Loose Fill: Place loose-fill materials to required depth after installation of playground equipment support posts and foundations. Include manufacturer's recommended amount of additional material to offset natural compaction over time.

C. Grading: Uniformly grade loose fill to an even surface free from irregularities.

D. Compaction: After initial grading, mechanically compact loose fill before finish grading to 95% mod proctor density.

E. Finish Grading: Hand rake to a uniformly smooth finished surface and to required elevations.

END OF SECTION 321816.13

SECTION 323116.10 - ORNAMENTAL WELDED WIRE FENCES AND GATES

PART 1 - GENERAL:

1.1 SECTION INCLUDES

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

1.2 SYSTEM DESCRIPTION

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

1.3 QUALITY ASSURANCE

A. The contractor shall provide laborers and supervisors who are familiar with the type of construction involved, and the materials and techniques specified.

B. Manufacturer of fence system must have ten (10) years of documented experience in manufacturing the products specified in this section.

1.4 REFERENCES

A. ASTM A525 - Specification for General Requirements for Steel Sheet, Zinc-coated (Galvanized) by the Hot-Dip Process

B. ASTM A641 – Specification for Zinc-Coated (Galvanized) Carbon Steel Wire

C. ASTM A185 – Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.

D. ASTM B117 – Practice for Operating Salt Spray (Fog) Apparatus

E. ASTM D2247 – Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity

1.5 SUBMITTALS

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

B. Changes in specification may not be made after the bid date.

C. Samples of assembled materials, components, hardware, accessories, and/or colors, if requested.

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Upon receipt, materials should be checked for damage that may have occurred in shipping to the job site.

B. Each package shall bear the name of the manufacturer.

C. Store products in manufacturer's unopened packaging.

D. Store materials in a secure and dry area to protect against damage, weather, vandalism, and theft.

E. Transport, handle and store products with care to protect against damage before installation.

PART 2 - PRODUCTS:

2.1 MANUFACTURER

A. The fencing system shall be Patriot Ornamental Wire Fence as manufactured by Jerith Manufacturing LLC., 14400 McNulty Road, Philadelphia, PA 19154. Telephone: 800-344-2242; Fax: 215-676-9756; email: sales@jerith.com.

B. Substitutions: Approved equal permitted.

C. Nominal fence height shall be 48" inches.

D. Color shall be Black.

2.2 MATERIALS

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

B. Infill: Section infill wires shall be steel with a minimum yield strength of 50,000 psi. The steel shall be galvanized to meet the designation of "regular coating" in accordance with requirements of ASTM A641.

2.3 FINISH

A. Pretreatment: A five stage non-chrome pretreatment shall be applied. The final stage shall be a dry-in-place activator which produces a uniform chemical conversion coating for superior adhesion.

B. Coating: Fence materials shall be coated with a TGIC polyester powder-coat finish system. Epoxy powder coatings, baked enamel or acrylic paint finishes are not acceptable. The finish shall have a cured film thickness of at least 2.0 mils.

C. Tests: The cured finish shall meet the following requirements:

1. Humidity resistance of 1,000 hours using ASTM D2247.
2. Salt-spray resistance of 1,000 hours using ASTM B117.
3. Outdoor weathering shall show no adhesion loss, checking or crazing, with only slight fade and chalk when exposed for 3 years in Florida facing south at a 45 degree angle.

2.4 FABRICATION

A. Fence Sections shall be manufactured with 1" square x 18 gauge (.049") tubing welded every 12" to the top and bottom of welded wire panels. Welded wire panels shall be comprised of 4 (.225") gauge (Washburn & Moen Standard) vertical wires and 6 (.192") gauge horizontal wires. 4 gauge vertical wires shall be placed 3½" on center. 6 gauge vertical wires shall be placed 1¾" on center. Horizontal wires shall be 6 gauge and spaced to provide style differences but no further apart than would allow substantial rigidity of vertical wires. Horizontal and vertical wires shall be assembled by automatic machines or other suitable mechanical means that will ensure accurate spacing and alignment of all members of the finished fabric. The wires shall be connected at every intersection by electric resistance welding in accordance with all requirements in ASTM A185. Sections shall be capable of supporting a 550 lb. load applied vertically at midspan and a concentrated load of 225 lbs. applied horizontally at midspan without permanent deformation.

B. Posts shall be 2½"square x 11 (.125") gauge steel tubing. Posts shall be spaced 70" apart from inside face to inside face. Steel rail ends shall be screwed to terminal posts to receive the 1" square top and bottom rails. The rails shall be secured to the rail ends by stainless steel screws. Steel caps shall be provided with all posts.

C. Residential and light commercial grade gates shall be assembled using gate uprights with 1" outside cross-section dimensions having 7/8" tubes welded to them. A Fence Section shall then be cut to size and secured to two uprights using stainless steel screws. A 1" x .125" diagonal brace shall be provided, cut to length, cold galvanized, touched up, and screwed into position from the top hinge side to the bottom latch side of the gate. All gates shall support a 300 lb. vertical load on the latch side of the gate without collapsing.

D. Heavy duty grade gate frames shall consist of 2" square x .125" wall gate uprights and 1.5" x 1.5" x .125" U-channels for top and bottom members welded at each connection with a 1" x .125" wall diagonal brace welded into place. Infill of matching Fence Section shall be welded into frame.

2.5 WARRANTY

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

PART 3 - EXECUTION:

3.1 PREPARATION

A. Verify areas to receive fencing are completed to final grades and elevations.

B. Ensure property lines and legal boundaries are clearly established.

C. Remove any surface irregularities which may cause interference with the installation of the fence.

3.2 FENCE INSTALLATION

A. Install fence in accordance with the manufacturer's instructions.

B. Excavate post holes to proper depth to suit local conditions for stability and support of the fence system without disturbing the underlying materials. Excavate deeper as required for adequate support in soft and loose soils.

C. Set fence posts in concrete footers at 70" spacing from inside of post to inside of post. Note that this fence must be stepped for installations on a slope. It can not follow the grade.

D. Center and align posts in holes to required depth. Place concrete around posts and tamp for consolidation. After tamping, check alignment of posts, and make necessary corrections before the concrete hardens.

E. Insert rail ends into horizontal rails and fasten in place to the posts.

3.3 ACCESSORIES

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

3.4 CLEANING

A. Contractor shall clean site of debris and excess materials. Post hole excavations shall be scattered uniformly away from posts.

B. If necessary, clean fence system with mild household detergent and clean water. Excess concrete must be removed from posts and other fencing material before it hardens.

END OF SECTION 323116.10

SECTION 323300 - SITE FURNISHINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Requirements, 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 without back

B. 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 TRASH RECEPTACLES

A. 24" x 32" round black steel trash receptacle with dome lid surface mount on concrete pad, Model # 26BTR5/ETR55/DL3 as manufactured by The Cary Company or approved equal.

2.2 FABRICATION

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

2.3 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.

END OF SECTION 323300

SECTION 329113 - SOIL PREPARATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes planting soils specified by composition of the mixes.

B. Related Requirements:

1. Section 329200 "Turf and Grasses" for placing planting soil for turf and grasses.

1.3 ALLOWANCES

A. Preconstruction and field quality-control testing are part of testing and inspecting allowance.

1.4 UNIT PRICES

A. Work of this Section is affected by cubic yard

1.5 DEFINITIONS

A. Backfill: The earth used to replace or the act of replacing earth in an excavation. This can be amended or unamended soil as indicated.

B. CEC: Cation exchange capacity.

C. Compost: The product resulting from the controlled biological decomposition of organic material that has been sanitized through the generation of heat and stabilized to the point that it is beneficial to plant growth.

D. Imported Soil: Soil that is transported to Project site for use.

E. Manufactured Soil: Soil produced by blending soils, sand, stabilized organic soil amendments, and other materials to produce planting soil.

F. Organic Matter: The total of organic materials in soil exclusive of undecayed plant and animal tissues, their partial decomposition products, and the soil biomass; also called "humus" or "soil organic matter."

G. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified as specified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.

H. RCRA Metals: Hazardous metals identified by the EPA under the Resource Conservation and Recovery Act.

I. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.

J. Subsoil: Soil beneath the level of subgrade; soil beneath the topsoil layers of a naturally occurring soil profile, typified by less than 1 percent organic matter and few soil organisms.

K. Surface Soil: Soil that is present at the top layer of the existing soil profile. In undisturbed areas, surface soil is typically called "topsoil"; but in disturbed areas such as urban environments, the surface soil can be subsoil.

L. USCC: U.S. Composting Council.

1.6 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include recommendations for application and use.
2. Include test data substantiating that products comply with requirements.
3. Include sieve analyses for aggregate materials.
4. Material Certificates: For each type of soil amendment and fertilizer topsoil before delivery to the site, according to the following:
    a. Manufacturer's qualified testing agency's certified analysis of standard products.
    b. Analysis of fertilizers, by a qualified testing agency, made according to AAPFCO methods for testing and labeling and according to AAPFCO's SUIP #25.
    c. Analysis of nonstandard materials, by a qualified testing agency, made according to SSSA methods, where applicable.

1.7 INFORMATIONAL SUBMITTALS

A. Qualification Data: For each testing agency.

B. Preconstruction Test Reports: For preconstruction soil analyses specified in "Preconstruction Testing" Article.

1.8 QUALITY ASSURANCE

A. Testing Agency Qualifications: An independent, state-operated, or university-operated laboratory; experienced in soil science, soil testing, and plant nutrition; with the experience and capability to conduct the testing indicated; and that specializes in types of tests to be performed.

1. Laboratories: Subject to compliance with requirements, provide testing by the following :

a. UMass Soil & Plant Nutrient Testing Laboratory Paige Laboratory, Room 203 161 Holdsworth Way Amherst, MA 01003 (413)545-2311.

2. Multiple Laboratories: At Contractor's option, work may be divided among qualified testing laboratories specializing in physical testing, chemical testing, and fertility testing.

1.9 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Engage a qualified testing agency to perform preconstruction soil analyses on existing, on-site soil imported soil .

1. Notify the Owner's Representative seven days in advance of the dates and times when laboratory samples will be taken.

B. Preconstruction Soil Analyses: For each unamended soil type, perform testing on soil samples and furnish soil analysis and a written report containing soil-amendment and fertilizer recommendations by a qualified testing agency performing the testing according to "Soil-Sampling Requirements" and "Testing Requirements" articles.

1. Have testing agency identify and label samples and test reports according to sample collection and labeling requirements.

1.10 SOIL-SAMPLING REQUIREMENTS

A. General: Extract soil samples according to requirements in this article.

B. Sample Collection and Labeling: Have samples taken and labeled by Contractor in presence of Architect under the direction of the testing agency.

1. Number and Location of Samples: Minimum of three representative soil samples from varied locations where directed by Architect for each soil to be used or amended for landscaping purposes.
2. Procedures and Depth of Samples: as directed by testing laboratory
3. Division of Samples: Split each sample into two, equal parts. Send half to the testing agency and half to Owner for its records.
4. Labeling: Label each sample with the date, location keyed to a site plan or other location system, visible soil condition, and sampling depth.

1.11 TESTING REQUIREMENTS

A. General: Perform tests on soil samples according to requirements in this article.

B. Physical Testing:

1. Soil Texture: Soil-particle, size-distribution analysis by one of the following methods according to SSSA's "Methods of Soil Analysis - Part 1-Physical and Mineralogical Methods":

a. Sieving Method: Report sand-gradation percentages for very coarse, coarse, medium, fine, and very fine sand; and fragment-gradation (gravel) percentages for fine, medium, and coarse fragments; according to USDA sand and fragment sizes.
b. Hydrometer Method: Report percentages of sand, silt, and clay.

2. Total Porosity: Calculate using particle density and bulk density according to SSSA's "Methods of Soil Analysis - Part 1-Physical and Mineralogical Methods."
3. Water Retention: According to SSSA's "Methods of Soil Analysis - Part 1-Physical and Mineralogical Methods."
4. Saturated Hydraulic Conductivity: According to SSSA's "Methods of Soil Analysis - Part 1-Physical and Mineralogical Methods"; at 85% compaction according to ASTM D 698 (Standard Proctor).

C. Chemical Testing:

1. CEC: Analysis by sodium saturation at pH 7 according to SSSA's "Methods of Soil Analysis - Part 3- Chemical Methods."
2. Clay Mineralogy: Analysis and estimated percentage of expandable clay minerals using CEC by ammonium saturation at pH 7 according to SSSA's "Methods of Soil Analysis - Part 1- Physical and Mineralogical Methods."
3. Metals Hazardous to Human Health: Test for presence and quantities of RCRA metals including aluminum, arsenic, barium, copper, cadmium, chromium, cobalt, lead, lithium, and vanadium. If RCRA metals are present, include recommendations for corrective action.
4. Phytotoxicity: Test for plant-available concentrations of phytotoxic minerals including aluminum, arsenic, barium, cadmium, chlorides, chromium, cobalt, copper, lead, lithium, mercury, nickel, selenium, silver, sodium, strontium, tin, titanium, vanadium, and zinc.

D. Fertility Testing: Soil-fertility analysis according to standard laboratory protocol of SSSA NAPT NEC-67 , including the following:

1. Percentage of organic matter.
2. CEC, calcium percent of CEC, and magnesium percent of CEC.
3. Soil reaction (acidity/alkalinity pH value).
4. Buffered acidity or alkalinity.
5. Nitrogen ppm.
6. Phosphorous ppm.
7. Potassium ppm.
8. Manganese ppm.
9. Manganese-availability ppm.
10. Zinc ppm.
11. Zinc availability ppm.
12. Copper ppm.
13. Sodium ppm and sodium absorption ratio.
14. Soluble-salts ppm.
15. Presence and quantities of problem materials including salts and metals cited in the Standard protocol. If such problem materials are present, provide additional recommendations for corrective action.
16. Other deleterious materials, including their characteristics and content of each.

E. Organic-Matter Content: Analysis using loss-by-ignition method according to SSSA's "Methods of Soil Analysis - Part 3- Chemical Methods."

F. Recommendations: Based on the test results, state recommendations for soil treatments and soil amendments to be incorporated to produce satisfactory planting soil suitable for healthy, viable plants indicated. Include, at a minimum, recommendations for nitrogen, phosphorous, and potassium fertilization, and for micronutrients.

1. Fertilizers and Soil Amendment Rates: State recommendations in weight per 1000 sq. ft. for 6-inch depth of soil .
2. Soil Reaction: State the recommended liming rates for raising pH or sulfur for lowering pH according to the buffered acidity or buffered alkalinity in weight per 1000 sq. ft. for 6-inch depth of soil .

1.12 DELIVERY, STORAGE, AND HANDLING

A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and compliance with state and Federal laws if applicable.

B. Bulk Materials:

1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas 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. Do not move or handle materials when they are wet or frozen.
4. Accompany each delivery of bulk fertilizers and soil amendments with appropriate certificates.

PART 2 - PRODUCTS

2.1 MATERIALS

2.2 ORGANIC SOIL AMENDMENTS

A. Compost: Well-composted, stable, and weed-free organic matter produced by composting feedstock, and bearing USCC's "Seal of Testing Assurance," and as follows:

1. Reaction: pH of 5.5 to 8 .
2. Soluble-Salt Concentration: Less than 4 dS/m.
3. Moisture Content: 35 to 55 percent by weight.
4. Organic-Matter Content: 50 to 60 percent of dry weight.
5. Particle Size: Minimum of 98 percent passing through a 1/2-inch sieve.

PART 3 - EXECUTION

3.1 GENERAL

A. Place planting soil and fertilizers according to requirements in other Specification Sections.

B. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in planting soil.

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

3.2 PLACING AND MIXING PLANTING SOIL OVER EXPOSED SUBGRADE

A. General: Apply and mix unamended soil with amendments on-site to produce required planting soil. Do not apply materials or till if existing soil or subgrade is frozen, muddy, or excessively wet.

B. Subgrade Preparation: Till subgrade to a minimum depth of 4 inches . Remove stones larger than 1-1/2 inches in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.

1. Apply, add soil amendments, and mix approximately half the thickness of unamended soil over prepared, loosened subgrade according to "Mixing" Paragraph below. Mix thoroughly into top 2 inches 4 inches of subgrade. Spread remainder of planting soil.

C. Mixing: Spread unamended soil to total depth indicated on Drawings , but not less than required to meet finish grades after mixing with amendments and natural settlement. Do not spread if soil or subgrade is frozen, muddy, or excessively wet.

1. Amendments: Apply soil amendments and fertilizer, if required, evenly on surface, and thoroughly blend them with unamended soil to produce planting soil.
2. Lifts: Apply and mix unamended soil and amendments in lifts not exceeding 8 inches in loose depth for material compacted by compaction equipment, and not more than 6 inches in loose depth for material compacted by hand-operated tampers.

D. Compaction: Compact each blended lift of planting soil to 75 to 82 percent of maximum Standard Proctor density according to ASTM D 698 and tested in-place except where a different compaction value is indicated on Drawings.

E. Finish Grading: Grade planting soil to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.

3.3 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

B. Soil will be considered defective if it does not pass tests and inspections.

C. Prepare test reports.

D. Label each sample and test report with the date, location keyed to a site plan or other location system, visible conditions when and where sample was taken, and sampling depth.

3.4 PROTECTION

A. Protection Zone: Identify protection zones according to Section 015639 "Temporary Tree and Plant Protection."

B. Protect areas of in-place soil from additional compaction, disturbance, and contamination. Prohibit the following practices within these areas except as required to perform planting operations:

1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Vehicle traffic.
4. Foot traffic.
5. Erection of sheds or structures.
6. Impoundment of water.
7. Excavation or other digging unless otherwise indicated.

C. If planting soil or subgrade is overcompacted, disturbed, or contaminated by foreign or deleterious materials or liquids, remove the planting soil and contamination; restore the subgrade as directed by Architect and replace contaminated planting soil with new planting soil.

3.5 CLEANING

A. Protect areas adjacent to planting-soil preparation and placement areas from contamination. Keep adjacent paving and construction clean and work area in an orderly condition.

B. Remove surplus soil and waste material including excess subsoil, unsuitable materials, trash, and debris and legally dispose of them off Owner's property unless otherwise indicated.

1. Dispose of excess subsoil and unsuitable materials on-site where directed by Owner.

END OF SECTION 329113

SECTION 329119 - LANDSCAPE GRADING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Final grade topsoil for finish landscaping.

B. Related Sections:

1. Section 312213 - Rough Grading: Site contouring.
2. 329200 - Turf and Grasses

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. Topsoil:

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

1.3 SUBMITTALS

A. Section 013300 - Submittal Procedures: Submittal procedures

B. Samples: Submit, in air-tight containers, 1 cup sample of loam to testing laboratory.

C. Materials Source: Submit name of imported materials source.

1.4 QUALITY ASSURANCE

A. Furnish each topsoil material from single source throughout the Work.

B. Perform Work in accordance with RIDOT Standard Specifications for Road & Bridge Construction, latest edition .

PART 2 - PRODUCTS

2.1 MATERIAL

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

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 013000 - Administrative Requirements: Verification of existing conditions before starting work.

B. Verify substrate base has been contoured and compacted.

3.2 PREPARATION

A. Protect landscaping and other features remaining as final Work.

B. Protect existing structures, sidewalks, utilities, paving, and curbs.

3.3 SUBSTRATE PREPARATION

A. Eliminate uneven areas and low spots.

B. Remove debris, loose roots, branches, stones, in excess of 1/2 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 TOPSOIL

A. Place topsoil in areas where seeding, is required. to thickness as scheduled. Place topsoil during dry weather.

B. Fine grade topsoil to eliminate rough or low areas. Maintain profiles and contour of subgrade.

C. Remove roots, weeds, rocks, and foreign material while spreading.

D. Manually spread topsoil close to plant material, to prevent damage.

E. Roll placed topsoil.

F. Remove surplus subsoil and topsoil from site.

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

3.5 TOLERANCES

A. Section 014000 - Quality Requirements: Tolerances.

B. Top of Topsoil: Plus or minus 1/2 inch.

3.6 PROTECTION OF INSTALLED WORK

A. Section 017000 - Execution and Closeout Requirements: Requirements for protecting finished Work.

B. Prohibit construction traffic over topsoil.

3.7 SCHEDULES

A. Compacted topsoil thicknesses:

1. Seeded Grass: 6 inches.

END OF SECTION 329119

SECTION 329200 - TURF AND GRASSES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Seeding.
2. Hydroseeding.
3. Turf renovation.

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 PRE CONSTRUCTION MEETINGS

A. Pre construction meeting: Conduct at Project site .

1.5 INFORMATIONAL SUBMITTALS

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

B. Product Certificates: For fertilizers, from manufacturer.

1.6 CLOSEOUT SUBMITTALS

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

1.7 QUALITY ASSURANCE

A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful turf establishment.

1. Professional Membership: Installer shall be a member in good standing of either the National Association of Landscape Professionals or AmericanHort.
2. Experience: Five years' experience in turf installation in addition to requirements in Section 014000 "Quality Requirements."
3. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
4. Personnel Certifications: Installer's field supervisor shall have certification in one of the following categories from the National Association of Landscape Professionals:
    a. Landscape Industry Certified Technician - Exterior.
    b. Landscape Industry Certified Lawn Care Manager.
    c. Landscape Industry Certified Lawn Care Technician.
5. Pesticide Applicator: State licensed, commercial.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws, as applicable.

B. Bulk Materials:

1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
2. Accompany each delivery of bulk materials with appropriate certificates.

1.9 FIELD CONDITIONS

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

1. Spring Planting: April 15 - May 15 .
2. Fall Planting: September 15 - Dec 1 .

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

A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Rules for Testing Seeds" for purity and germination tolerances.

B. Seed Species:

1. Quality: Seed of grass species as listed below for solar exposure, with not less than 85 percent germination, not less than 95 percent pure seed, and not more than 0.5 percent weed seed:

C. Grass-Seed Mix: Seed mix as follows:

1. Mix A (Lawn Areas): 30% Improved Per. Rye 30% Turf Type Tall Fescue 30% Chewings Fescue 5% Creeping Red Fescue 5% Miniature or Dutch White Clover
   a. Application Rate: 5-7 lbs per 1,000 sq ft or 265 lbs per acre.
   b. Products may be acquired from the following source (or approved equal): :
      1) Allen's Seed Store : 693 S County Trail Exeter, RI 02822 Phone: 401 294 2722

2.2 FERTILIZERS

A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:

1. Composition: fertilizer to have a ratio of 18 Nitrogen (N) - 24 Phosphorous (P) - 12 Potassium (K)

B. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

1. Composition: fertilizer to have a ratio of 18 Nitrogen (N) - 24 Phosphorous (P) - 12 Potassium (K)

2.3 EROSION-CONTROL MATERIALS

A. Erosion-Control Blankets: Biodegradable wood excelsior, straw, or coconut-fiber mat enclosed in a photodegradable plastic mesh. Include manufacturer's recommended steel wire staples, 6 inches long.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to be planted for compliance with requirements and other conditions affecting installation and performance of the Work.

1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
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 the Owner's Representative and replace with new planting soil.

3.2 PREPARATION

A. Protect structures; utilities; sidewalks; pavements; and other facilities, trees, shrubs, and plantings from damage caused by planting operations.

1. Protect adjacent and adjoining areas from hydroseeding and hydromulching overspray.
2. Protect grade stakes set by others until directed to remove them.

3.3 TURF AREA PREPARATION

A. General: Prepare planting area for soil placement and mix planting soil according to Section 329113 "Soil Preparation."

B. Placing Planting Soil: Place and mix planting soil in place over exposed subgrade .

C. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

D. Before planting, obtain the Owner's Representative'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

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 total rate of 5 to 8 lb/1000 sq. ft. .

C. Rake seed lightly into top 1/8 inch of soil, roll lightly, and water with fine spray.

3.6 HYDROSEEDING

A. Hydroseeding: Mix specified seed, fertilizer , and fiber mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.

1. Mix slurry with fiber-mulch manufacturer's recommended tackifier.
2. Spray-apply slurry uniformly to all areas to be seeded in a one-step process. Apply slurry at a rate so that mulch component is deposited at not less than 1500-lb/acre dry weight, and seed component is deposited at not less than the specified seed-sowing rate.

3.7 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 to a height of 1-1/2 to 2 inches .

3.8 SATISFACTORY TURF

A. Turf installations shall meet the following criteria as determined by the Owner's Representative:

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.

3.10 MAINTENANCE SERVICE

A. Turf Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in "Turf Maintenance" Article. Begin maintenance immediately after each area is planted and continue until acceptable turf is established, but for not less than the following periods:

1. Seeded Turf: 90 days from date of Substantial Completion .
    a. When initial maintenance period has not elapsed before end of planting season, or if turf is not fully established, continue maintenance during next planting season.

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

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. Balled and Potted Stock: Plants dug with firm, natural balls of earth in which they are grown and placed, unbroken, in a container. Ball size is not less than diameter and depth recommended by ANSI Z60.1 for type and size of plant required.

D. Container-Grown Stock: Healthy, vigorous, well-rooted plants grown in a container, with a well-established root system reaching sides of container and maintaining a firm ball when removed from container. Container shall be rigid enough to hold ball shape and protect root mass during shipping and be sized according to ANSI Z60.1 for type and size of plant required.

E. Finish Grade: Elevation of finished surface of planting soil.

F. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. They also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant. Some sources classify herbicides separately from pesticides.

G. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. Pests include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.

H. Planting Area: Areas to be planted.

I. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth. See Section 329113 "Soil Preparation" for drawing designations for planting soils.

J. Plant; Plants; Plant Material: These terms refer to vegetation in general, including trees, shrubs, vines, ground covers, ornamental grasses, bulbs, corms, tubers, or herbaceous vegetation.

K. Root Flare: Also called "trunk flare." The area at the base of the plant's stem or trunk where the stem or trunk broadens to form roots; the area of transition between the root system and the stem or trunk.

L. Stem Girdling Roots: Roots that encircle the stems (trunks) of trees below the soil surface.

M. Subgrade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.

1.4 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 PRE CONSTRUCTION MEETINGS

A. Pre construction Meeting: Conduct meeting at Project site 100 General Street, Providence.

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 format of each required species and size of plant material as it will be furnished to Project. Take photographs from an angle depicting true size and condition of the typical plant to be furnished. Include a scale rod or other measuring device in each photograph. For species where more than 5 plants are

required, include a minimum of three photographs showing the average plant, the best quality plant, and the worst quality plant to be furnished. Identify each photograph with the full scientific name of the plant, plant size, and name of the growing nursery.

B. Samples for Verification: For each of the following:

1. Organic Compost Mulch: [**1-quart**] volume of each organic mulch required; in sealed plastic bags labeled with composition of materials by percentage of weight and source of mulch. Each Sample shall be typical of the lot of material to be furnished; provide an accurate representation of color, texture, and organic makeup.
2. Proprietary Root-Ball-Stabilization Device: One unit.
3. Slow-Release, Tree-Watering Device: One unit of each size required.

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 the Owner's Representative, 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: the Owner's Representative 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. the Owner's Representative 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 the Owner's Representative 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. Do not prune trees and shrubs before delivery. Protect bark, branches, and root systems from sun scald, drying, wind burn, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of plants during shipping and delivery. Do not drop plants during delivery and handling.

D. Handle planting stock by root ball.

E. Wrap trees and shrubs with burlap fabric over trunks, branches, stems, twigs, and foliage to protect from wind and other damage during digging, handling, and transportation.

F. Deliver plants after preparations for planting have been completed, and install immediately. If planting is delayed more than six hours after delivery, set plants and trees in their appropriate aspect (sun, filtered sun, or shade), protect from weather and mechanical damage, and keep roots moist.

1. 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 21- June 15. .
2. Fall Planting: September 15- December 1 .

C. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions and warranty requirements.

1.12 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 .
2. Warranty Periods: From date of Substantial Completion .
   a. Trees, Shrubs, Vines, and Ornamental Grasses: 12 months.
   b. Ground Covers, Biennials, Perennials, and Other Plants: 12 months.
   c. Annuals: Three 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 the Owner's Representative, 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.

2.2 MULCHES

A. Organic Mulch: Free from deleterious materials and suitable as a top dressing of trees and shrubs, consisting of one of the following:

1. Type: [**Ground or shredded bark**] .
2. Size Range: 3 inches maximum, 1/2 inch minimum .
3. Color: Natural. 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**] [**softwood with specified wood pressure-preservative treatment**], free of knots, holes, cross grain, and other defects, 2-by-2-inch nominal by length indicated, pointed at one end.
2. Guys and Tie Wires: ASTM A 641/A 641M, Class 1, galvanized-steel wire, two-strand, twisted, 0.106 inch in diameter.

2.4 TREE-WATERING DEVICES

A. Slow-Release Watering Device: Standard product manufactured for drip irrigation of plants and emptying its water contents over two to nine hours two to three weeks 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: dark chocolate green .

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.

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 the Owner's Representative and replace with new planting soil.

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

3.2 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities and turf areas and existing plants from damage caused by planting operations.

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

3.3 PLANTING AREA ESTABLISHMENT

A. General: Prepare planting area for soil placement and mix planting soil according to Section 329113 "Soil Preparation."

B. Placing Planting Soil: Place and mix planting soil in-place over exposed subgrade .

C. Before planting, obtain the Owner's Representative'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 the Owner's Representative, broadcast dry product uniformly over prepared soil at application rate according to manufacturer's written recommendations .

3.4 EXCAVATION FOR TREES AND SHRUBS

A. Planting Pits and Trenches: Excavate circular planting pits.

1. Excavate planting pits with sides sloping inward at a 45-degree angle. Excavations with vertical sides are unacceptable. Trim perimeter of bottom leaving center area of bottom raised slightly to support root ball and assist in drainage away from center. Do not further disturb base. Ensure that root ball will sit on undisturbed base soil to prevent settling. Scarify sides of planting pit smeared or smoothed during excavation.
2. Excavate approximately three times as wide as ball diameter for balled and burlapped container-grown stock.
3. Do not excavate deeper than depth of the root ball, measured from the root flare to the bottom of the root ball.

4. If area under the plant was initially dug too deep, add soil to raise it to the correct level and thoroughly tamp the added soil to prevent settling.
5. Maintain angles of repose of adjacent materials to ensure stability. Do not excavate subgrades of adjacent paving, structures, hardscapes, or other new or existing improvements.
6. Maintain supervision of excavations during working hours.
7. Keep excavations covered or otherwise protected , 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. Obstructions: Notify the Owner's Representative if unexpected rock or obstructions detrimental to trees or shrubs are encountered in excavations.

1. Hardpan Layer: Drill 6-inch- diameter holes, 24 inches apart, into free-draining strata or to a depth of 10 feet, whichever is less, and backfill with free-draining material.

C. Drainage: Notify the Owner's Representative if subsoil conditions evidence unexpected water seepage or retention in tree or shrub planting pits.

D. 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 mixed with excavated soil.
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. Container-Grown Stock: Set each plant plumb and in center of planting pit or trench with root flare 1 inch above adjacent finish grades.

1. Backfill: Planting soil . 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.

3.8 GROUND COVER AND PLANT PLANTING

A. Set out and space ground cover and plants other than trees, shrubs, and vines as indicated on Drawings in even rows with triangular spacing.

B. Use planting soil mixed with excavated soil for backfill.

C. Dig holes large enough to allow spreading of roots.

D. For rooted cutting plants supplied in flats, plant each in a manner that minimally disturbs the root system but to a depth not less than two nodes.

E. Work soil around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water.

F. Water thoroughly after planting, taking care not to cover plant crowns with wet soil.

G. Protect plants from hot sun and wind; remove protection if plants show evidence of recovery from transplanting shock.

3.9 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 36-inch radius around trunks or stems. Do not place mulch within 3 inches of trunks or stems.
2. Organic Mulch in Planting Areas: Apply 3-inch average thickness of organic mulch 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.

3.10 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.

3.11 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 the Owner's Representative.

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 the Owner's Representative.

B. Remove and replace trees that are more than 25 percent dead or in an unhealthy condition before the end of the corrections period or are damaged during construction operations that Architect determines are incapable of restoring to normal growth pattern.

1. Provide new trees of same size as those being replaced for each tree of 4 inches or smaller in caliper size.
2. Species of Replacement Trees: consult with Landscape Architect .

3.12 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.

3.13 MAINTENANCE SERVICE

A. Maintenance Service for Trees and Shrubs: Provide maintenance by skilled employees of landscape Installer. Maintain as required in "Plant Maintenance" Article. Begin maintenance immediately after plants are installed and continue until plantings are acceptably healthy and well established, but for not less than maintenance period below:

1. Maintenance Period: 12 months from date of Substantial Completion .

END OF SECTION 329300

SECTION 334200 - STORMWATER CONVEYANCE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Storm drainage piping.
2. Channel Drains and Area Drains.
3. Bedding and cover materials.

B. Related Requirements:

1. Section 31213 -Rough Grading.
2. Section 312316.13 - Trenching: Execution requirements for trenching as required by this Section.
3. Section 321313 - Concrete Paving.

1.2 DEFINITIONS

A. ABS: Acrylonitrile butadiene styrene.

1.3 UNIT PRICES

A. Pipe and Fittings:

1. Basis of Measurement: By linear foot .
2. Basis of Payment: Includes excavating , removing soft subsoil, bedding and fill , pipe and fittings, and accessories. .

1.4 SUBMITTALS

A. Product Data: Submit manufacturer information describing pipe, pipe accessories.

B. Qualifications Statement: For manufacturer.

1.5 QUALITY ASSURANCE

A. Manufacturers Qualifications: Company specializing in manufacturing products specified in this Section with minimum three years' documented experience.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.

B. Store materials according to manufacturer instructions.

C. Protection:

1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
2. Provide additional protection according to manufacturer instructions.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Perform Work according to:

1. The State of Rhode Island DOT standards.

2.2 STORM DRAINAGE PIPING

A. PVC Piping:

1. Pipe:
   a. Inside Nominal Diameter: 6 inches.
   b. Sch 40.
2. Fittings: PVC.
3. Joints:
   a. Type: Snap fittings.
   b. Drain Cover.

B. Channel Drain

1. 5" Dura-Slope Channel Drain:
   a.
   b. Type: Smooth interior.
   c. Inside Nominal Diameter: 4 inches.
2. Fittings: PE.
3. Joints: Comply with ASTM F405 AASHTO M252.

2.3 CLEANOUTS

A. Shaft and Top Section:

1. Material: Reinforced cast-in-place concrete pipe sections.
2. Joints: Lipped male/female ; dry.
3. Nominal Shaft Diameter: 4 inches.

B. Cleanout Lids and Frames:

1. Manufacturers:
   a. NDS
   b. IPS Corporation.
   c. Josam Company.
   d. Zurn Industries, LLC.
2. Materials: Cast iron.
3. Lid:
   a. Hinged.
   b. Design: Linear grill .

C. Base Pad:

1. Material: Cast-in-place concrete, as specified in Section 033000 "Cast-in-Place Concrete" .

2.4 MATERIALS

A. Bedding and Cover:

1. Bedding: #2 Crushed Stone as specified in Section 312316.13 .
2. Cover: 3/4" Crushed Stone , as specified in Section 312316.13 .
3. Soil Backfill from above Pipe to Finish Grade: Loam as specified in Section 312316.13.
4. Subsoil: No rocks more than 6 inches in diameter, frozen earth, or foreign matter.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that excavation base is ready to receive Work of this Section.

B. Verify that excavations, dimensions, and elevations are as indicated on layout drawings Drawings.

3.2 PREPARATION

A. Section 017000 - Execution and closeout Requirements: Requirements for installation preparation.

B. Correct over-excavation with coarse aggregate .

C. Remove large stones and other hard matter that could damage piping or impede consistent backfilling or compaction.

3.3 INSTALLATION

A. Excavation and Bedding:

1. Excavate trench to 12 inches 6 inches below pipe invert, and as specified in Section 312316.13 "Trenching."
2. Hand trim excavation for accurate placement of piping to indicated elevations.
3. Place bedding material at trench bottom.
4. Level materials in continuous layers not exceeding 8-inch compacted depth.
5. Maintain optimum moisture content of bedding material to attain required compaction density.
6. Level fill materials in continuous layers not exceeding 8 inches in depth, and compact to 95 percent maximum density.
7. Place geotextile fabric over compacted bedding.

B. Piping:

1. Excavate trench 10 6" inches below pipe invert, and as specified in Section 312316.13 - Trenching .
2. Install 3/4" crushed stone at sides and over top of pipe.
3. Install top cover and compact to 95% maximum density.
4. Back Filling and Compaction:
   a. Do not displace or damage pipe while compacting..
5. Installation Standards: Install Work according to RIDOT Standard Specifications for Road and Bridge Construction standards.

3.4 TOLERANCES

A. Section 014000 - Quality Requirements: Requirements for tolerances .

B. Maximum Variation from Indicated Pipe Slope: [1/8 inch] in [10 feet]

3.5 FIELD QUALITY CONTROL

A. Section 014000 - Quality Requirements: Requirements for inspecting and testing.

B. Inspection:

1. Request inspection by Owner's Representative prior to placing aggregate cover over pipe.

C. Testing:

1. Piping:
   a. Infiltration and Exfiltration Testing: As specified in Section 330505.33 - Infiltration and Exfiltration Testing.
2. If tests indicate the Work does not meet specified requirements, remove Work, replace, and retest.

3.6 PROTECTION

A. Section 017000 - Execution and Closeout Requirements for protecting finished Work.

B. Protect pipe and aggregate cover from damage or displacement until backfilling operation is in progress.

END OF SECTION 334200

LOCUS MAP

SOURCE: Google Earth

PROVIDENCE, RI

PARK IMPROVEMENTS AT GENERAL STREET PARK

HONORABLE
JORGE O. ELORZA,
MAYOR

WENDY NILSSON,
SUPERINTENDENT OF PARKS

DAVID SALVATORE
CITY COUNCILOR

PROVIDENCE PARKS
play · relax · explore

GENERAL CONSTRUCTION NOTES

1. BASE INFORMATION OBTAINED FROM GOOGLE EARTH, GIS, AND REGISTERED PROFESSIONAL SURVEY #2445.03 PRODUCED BY CROSSMAN ENGINEERING, 151 CENTERVILLE ROAD, WARWICK, RI 02886, ON JUNE 16, 2020.
2. ANY ERRORS OR DISCREPANCIES ON THE DRAWINGS, SHOP DRAWINGS, AND DETAILS ARE TO BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE BEFORE THE WORK HAS COMMENCED.
3. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF ALL LOCATIONS AND DIMENSIONS. DISCREPANCIES BETWEEN LAYOUT DIMENSIONS ON PLANS AND ACTUAL MEASUREMENTS IN FIELD ARE TO BE REPORTED TO THE OWNER'S REPRESENTATIVE BEFORE CONSTRUCTION BEGINS.
4. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE PRIOR TO DEMOLITION OR INSTALLATION OF ANY PORTION OF THE SITE WORK .
5. THE CONTRACTOR SHALL STAKE OUT ALL LAYOUTS OF PROPOSED WORK FOR APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCING WORK.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL CONTROL POINTS AND BENCHMARKS DURING CONSTRUCTION INCLUDING BENCHMARK LOCATIONS AND ELEVATIONS AT CRITICAL AREAS. THE LOCATION OF ALL CONTROL POINTS AND BENCHMARKS SHALL BE COORDINATED WITH THE OWNER'S REPRESENTATIVE.
7. UNLESS OTHERWISE SPECIFIED ON THE PLANS AND DETAILS/SPECIFICATIONS, ALL SITE CONSTRUCTION MATERIALS AND METHODOLOGIES ARE TO CONFORM TO THE MOST RECENT VERSION OF THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS (THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION 2015 EDITION).
8. CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE LAWS AND REGULATIONS REGARDING NOISE, VIBRATION, DUST, SEDIMENTATION CONTAINMENT, AND TRENCH WORK.
9. THE CONTRACTOR SHALL RESTORE ALL SURFACES EQUAL TO THEIR ORIGINAL CONDITION AFTER CONSTRUCTION IS COMPLETE. AREAS NOT DISTURBED BY CONSTRUCTION SHALL BE LEFT NATURAL. THE CONTRACTOR SHALL TAKE CARE TO PREVENT DAMAGE TO SHRUBS, TREES, AND OTHER LANDSCAPING OR NATURAL FEATURES, WHEREAS THE PLANS DO NOT SHOW ALL LANDSCAPING FEATURES. EXISTING CONDITIONS MUST BE VERIFIED BY THE CONTRACTOR IN ADVANCE OF THE WORK.
10. ALL UNPAVED AREAS DISTURBED BY THE WORK SHALL HAVE A MINIMUM OF 4-INCHES OF LOAM INSTALLED AND SEEDED WITH GRASS SEED AS SHOWN ON THE PLAN AND/OR DIRECTED BY THE LANDSCAPE ARCHITECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING ANY LOAM AND SEEDED AREAS UNTIL LAWN GROWTH IS ESTABLISHED AND APPROVED BY THE LANDSCAPE ARCHITECT AND/OR OWNER'S REPRESENTATIVE.
11. THE CONTRACTOR SHALL REGULARLY INSPECT THE PERIMETER OF THE PROPERTY TO CLEAN UP AND REMOVE ANY LOOSE CONSTRUCTION DEBRIS BEFORE IT LEAVES THE SITE. ALL DEMOLITION DEBRIS SHALL BE PROMPTLY REMOVED FROM THE SITE TO AN APPROVED DUMP SITE. ALL TRUCKS LEAVING THE SITE SHALL BE COVERED.
12. CONCRETE TRUCKS SHALL NOT BE WASHED ONSITE. ANY CEMENT OR CONCRETE DEBRIS LEFT IN THE DISTURBED AREA SHALL BE REMOVED BY HAND AT THE CONTRACTOR'S EXPENSE.
13. IF ANY DEVIATION OR ALTERATION OF THE WORK PROPOSED ON THESE DRAWINGS IS REQUIRED, THE CONTRACTOR IS TO IMMEDIATELY CONTACT AND COORDINATE WITH THE LANDSCAPE ARCHITECT AND THE OWNER'S REPRESENTATIVE.
14. AT THE END OF CONSTRUCTION, THE CONTRACTOR SHALL REMOVE ALL CONSTRUCTION DEBRIS AND SURPLUS MATERIAL FROM THE SITE. A THOROUGH INSPECTION OF THE WORK PERIMETER IS TO BE MADE AND ALL DISCARDED MATERIALS, BLOWN OR WATER CARRIED DEBRIS, SHALL BE COLLECTED AND REMOVED FROM THE SITE.
15. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SITE FOR THE SAFETY OF THE GENERAL PUBLIC AND TO PROTECT PROPERTY AGAINST VANDALISM AND THEFT.
16. THE CONTRACTOR MUST OBTAIN ALL REQUIRED CITY, STATE AND FEDERAL PERMITS.
17. THE PROVIDENCE PARKS DEPARTMENT ASSUMES NO RESPONSIBILITY IF THE WORK IS NOT INSTALLED AS PER THE PLANS OR IF FIELD CHANGES ARE MADE WITHOUT THE KNOWLEDGE AND APPROVAL OF THE OWNER'S REPRESENTATIVE.

SHEET SCHEDULE

LEGEND

×97.96	EXISTING GRADE
+97.83	PROPOSED GRADE
–98–	EXISTING CONTOUR
	PROPOSED CONTOUR
	EXISTING TREES
	TREE PROTECTION FENCE
LOW	LIMIT OF WORK
SS	SILT SOCK
W W	WATER LINE
ELEC ELEC	ELECTRICAL UTILITY LINE

ISSUED FOR BID 11/21/22

PROVIDENCE
PARKS DEPARTMENT

DALRYMPLE BOATHOUSE
ROGER WILLIAMS PARK
PROVIDENCE, RI 02905

NO.	REVISION	DATE

COVER SHEET

PARK IMPROVEMENTS AT GENERAL STREET PARK

ONE RECREATION WAY, PROVIDENCE, RI 02904

FILE: GeneralSt-2022-L1-Cover.dwg

DATE: November 9, 2022

SCALE: NTS

DRAWN BY: CR

CHECKED/ APPROVED: MG

SHEET NO. L-1

1 OF 13

DEMOLITION PLAN NOTES

1. ALL SITE PREPARATION NECESSARY TO COMPLETE THIS PROJECT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH PROVIDENCE PARKS DEPARTMENT TO DEVELOP A SUITABLE DEMOLITION PLAN, WHICH WILL MINIMIZE PARK DISTURBANCE AND ALLOW ALL FACILITIES TO REMAIN IN OPERATION DURING THE ENTIRETY OF CONSTRUCTION.
3. UNLESS OTHERWISE NOTED, THE CONTRACTOR IS RESPONSIBLE FOR THE RELOCATION, DEMOLITION, REMOVAL AND DISPOSAL, IN A LOCATION APPROVED BY ALL GOVERNING AUTHORITIES, OF ALL EXISTING SITE ELEMENTS AND STRUCTURES INCLUDING BUT NOT LIMITED TO BITUMINOUS CONCRETE, CEMENT CONCRETE, GRAVEL, CURBS, WALKWAYS, SIDEWALKS, BERMS, FENCES, BOLLARDS, POSTS, PLANTING BEDS, TREES, SHRUBS, UTILITIES, DRAINAGE STRUCTURES AND ALL OTHER STRUCTURES SHOWN WITHIN THE LIMITS, AND WHERE NEEDED, TO ALLOW FOR NEW CONSTRUCTION. ALL ELEMENTS TO BE REMOVED SHALL BE UNDERCUT TO SUITABLE MATERIAL AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL PER SPECIFICATIONS.
4. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL DEBRIS FROM THE SITE AND DISPOSING OF THE DEBRIS IN A PROPER AND LEGAL MANNER.
5. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND.OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS ARE BASED ON RECORDS OF VARIOUS UTILITY COMPANIES, AND WHEREVER POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY IN THE CITY, AND "DIGSAFE" (1-800-344-7233) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK IN PREVIOUSLY UNALTERED AREAS TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RESOLVE CONFLICTS BETWEEN THE PROPOSED UTILITIES AND FIELD-LOCATED UTILITIES AND SHALL REPORT ANY DISCREPANCIES TO THE LANDSCAPE ARCHITECT IMMEDIATELY. THE OWNER ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED, INCOMPLETELY OR INACCURATELY SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ACCURATE RECORDS OF THE LOCATION AND ELEVATION OF ALL WORK INSTALLED AND EXISTING UTILITIES FOUND DURING CONSTRUCTION FOR THE PREPARATION OF THE AS-BUILT PLAN.
6. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL EXISTING UTILITIES IN WORKING ORDER AND FREE FROM DAMAGE DURING THE ENTIRE DURATION OF THE PROJECT. ALL COST RELATED TO THE REPAIR OF UTILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. EXCAVATION REQUIRED WITHIN THE PROXIMITY OF EXISTING UTILITY LINES SHALL BE DONE BY HAND. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITY LINE OR STRUCTURES INCURRED DURING CONSTRUCTION OPERATIONS AT NO COST TO THE OWNER.
7. THE CONTRACTOR SHALL MAINTAIN CONTINUOUS ACCESS AND OPERATION FOR SURROUNDING FACILITIES, AS DEEMED BY THE OWNER, AT ALL TIMES DURING DEMOLITION OF THE EXISTING FACILITIES.
8. PRIOR TO DEMOLITION OCCURRING, ALL EROSION CONTROL DEVICES AND TREE PROTECTIVE MEASURES ARE TO BE INSTALLED.
9. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING NUISANCE DUSTS AT ALL TIMES THROUGHOUT THE PROJECT.

MATERIALS PLAN NOTES

1. ALL LINES AND DIMENSIONS ARE PARALLEL OR PERPENDICULAR TO THE LINES FROM WHICH THEY ARE MEASURED UNLESS OTHERWISE INDICATED.
2. STORAGE AREAS FOR CONTRACTOR'S EQUIPMENT AND MATERIALS SHALL BE ON AND WITHIN LIMITS OF WORK AS SHOWN ON THE PLANS AND AS APPROVED BY THE OWNER'S REPRESENTATIVE.
3. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD AND REPORT ANY DISCREPANCIES IN THE PLAN TO THE OWNER'S REPRESENTATIVE PRIOR TO STARTING WORK.
4. ALL LAYOUTS FOR WALKS AND PATHS SHALL BE ADEQUATELY STAKED BY THE CONTRACTOR AND APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
5. BOULDERS LOCATION TO BE APPROVED BY LANDSCAPE ARCHITECT IN THE FIELD PRIOR TO INSTALLATION
6. LOG STUMPS LOCATION TO BE APPROVED BY LANDSCAPE ARCHITECT IN THE FIELD PRIOR TO INSTALLATION

LAYOUT PLAN NOTES

1. ALL LINES AND DIMENSIONS ARE PARALLEL OR PERPENDICULAR TO THE LINES FROM WHICH THEY ARE MEASURED UNLESS OTHERWISE INDICATED.
2. STORAGE AREAS FOR CONTRACTOR'S EQUIPMENT AND MATERIALS SHALL BE ON AND WITHIN LIMITS OF WORK AS SHOWN ON THE PLANS AND AS APPROVED BY THE OWNER'S REPRESENTATIVE.
3. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD AND REPORT ANY DISCREPANCIES IN THE PLAN TO THE OWNER'S REPRESENTATIVE PRIOR TO STARTING WORK.
4. ALL LAYOUTS FOR WALKS AND PATHS SHALL BE ADEQUATELY STAKED BY THE CONTRACTOR AND APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
5. GRANITE BLOCKS, BOULDERS, LOGS, STUMPS, AND PLAY EQUIPMENT TO BE LOCATED AND APPROVED BY LANDSCAPE ARCHITECT IN THE FIELD PRIOR TO INSTALLATION.

EROSION & SEDIMENT CONTROL NOTES

1. THE SITE CONSTRUCTION FOREMAN SHALL BE DESIGNATED AS THE ON-SITE PERSONNEL RESPONSIBLE FOR THE DAILY INSPECTION AND MAINTENANCE OF ALL ESC MEASURES AND SHALL IMPLEMENT ALL NECESSARY MEASURES TO CONTROL EROSION AND PREVENT SEDIMENT FROM LEAVING THE SITE.
2. THE CONTRACTOR SHALL INSTALL ALL ESC MEASURES AS SHOWN ON THE DESIGN PLANS AND AS DETERMINED NECESSARY IN THE FIELD BY OWNER'S REPRESENTATIVE BEFORE ANY CONSTRUCTION ACTIVITIES ARE TO BEGIN. THESE MEASURES SHALL BE CHECKED, MAINTAINED/REPLACED AS NECESSARY DURING THE ENTIRE CONSTRUCTION PERIOD OF THE PROJECT. SUCH MEASURES SHALL REPRESENT THE LIMIT OF WORK. WORKERS SHALL BE INFORMED THAT NO CONSTRUCTION ACTIVITY IS TO OCCUR BEYOND THE LIMIT OF WORK AT ANY TIME THROUGH THE CONSTRUCTION PERIOD.
3. A MINIMUM SURPLUS OF 100 FEET OF EROSION CONTROL BARRIER (SILT FENCE&/OR SILT SOCK) SHALL BE STOCKPILED ONSITE AT ALL TIMES.
4. THE CONTRACTOR SHALL PROTECT THE ADJACENT AREA FROM SEDIMENTATION DURING PROJECT CONSTRUCTION OPERATIONS.
5. A CONSTRUCTION EXIT SHALL BE CONSTRUCTED TO SHED DIRT FROM CONSTRUCTION VEHICLE TIRES. THE CONSTRUCTION EXIT SHALL BE REPLACED/CLEANED AS NEEDED TO MAINTAIN ITS EFFECTIVENESS.
6. THE LIMIT OF ALL CLEARING, GRADING AND DISTURBANCES SHALL BE KEPT TO A MINIMUM WITHIN THE PROPOSED AREA OF CONSTRUCTION. THE CONTRACTOR SHALL PHASE THE SITE WORK IN A MANNER TO MINIMIZE AREAS OF EXPOSED SOIL.
7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MONITOR LOCAL WEATHER REPORTS DURING CONSTRUCTION AND PRIOR TO SCHEDULING EARTHMOVING OR OTHER CONSTRUCTION ACTIVITIES WHICH WILL LEAVE LARGE DISTURBED AREAS UNSTABILIZED. IF INCLEMENT WEATHER IS PREDICTED, THE CONTRACTOR SHALL USE THEIR BEST PROFESSIONAL JUDGEMENT AND SHALL BE RESPONSIBLE FOR ENSURING THAT NECESSARY EROSION CONTROL DEVICES ARE INSTALLED AND FUNCTIONING PROPERLY TO MINIMIZE EROSION FROM ANY IMPENDING WEATHER EVENTS.
8. SOIL ESC MEASURES SHALL BE INSPECTED AND MAINTAINED ON A WEEKLY BASIS AND AFTER EACH RAINFALL EVENT OF 0.25 INCH OR GREATER DURING CONSTRUCTION TO ENSURE THAT THE ESC MEASURES ARE INTACT AND FUNCTIONING PROPERLY. IDENTIFIED DEFICIENCIES SHALL BE CORRECTED IMMEDIATELY NO LATER THAN 24 HOURS AFTER IDENTIFICATION.
9. SOIL STOCKPILES LEFT OVERNIGHT SHALL BE SURROUNDED ON THEIR PERIMETERS WITH SILT SOCK.
10. DISTURBED AREAS AND SLOPES SHALL NOT BE LEFT UNATTENDED OR EXPOSED FOR EXCESSIVE PERIODS OF TIME SUCH AS THE INACTIVE WINTER SEASON. THE CONTRACTOR SHOULD PROVIDE APPROPRIATE STABILIZATION PRACTICES ON ALL DISTURBED AREAS AS SOON AS POSSIBLE BUT NOT MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT AREA HAS TEMPORARILY OR PERMANENTLY CEASED. TEMPORARY AREAS HAVING A SLOPE GREATER THAN 3:1 SHALL BE REINFORCED WITH EROSION BLANKETS OR APPROVED EQUAL UNTIL THE SITE IS PROPERLY STABILIZED. TEMPORARY SWALES MAY ALSO BE REQUIRED IF DETERMINED NECESSARY IN THE FIELD BY OWNER'S REPRESENTATIVE.
11. THE CONTRACTOR SHALL CONTAIN ALL SEDIMENT ONSITE. ALL EXITS FROM THE SITE WILL BE SWEPT AS NECESSARY INCLUDING ANY SEDIMENT TRACKING. PAVED AREAS SHALL BE SWEPT AS NEEDED TO REMOVE SEDIMENT AND POTENTIAL POLLUTANTS WHICH MAY ACCUMULATE DURING SITE WORK.
12. ACCUMULATED SEDIMENT SHALL BE REMOVED FROM ALL ESC MEASURES AND DISPOSED OF IN A PRE-APPROVED LOCATION BY THE CONTRACTOR.
13. DUST SHALL BE CONTROLLED BY WATERING OR OTHER APPROVED METHODS AS NECESSARY.

PLANTING NOTES

1. ALL NEW PLANT MATERIALS SHALL CONFORM TO THE MINIMUM GUIDELINES ESTABLISHED FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC. IN ADDITION, ALL NEW PLANT MATERIAL FOR THE PROJECT SHALL BE OF SPECIMEN QUALITY.
2. ALL NEW PLANTS TO BE BALLED AND BURLAPPED OR CONTAINER GROWN, UNLESS OTHERWISE NOTED ON THE PLANT LIST.
3. THE CONTRACTOR SHALL SUPPLY ALL NEW PLANT MATERIAL IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTING SHOWN ON THE DRAWINGS.
4. ANY PROPOSED SUBSTITUTIONS OF PLANT SPECIES SHALL BE MADE WITH PLANTS OF EQUIVALENT OVERALL FORM, HEIGHT, BRANCHING HABIT, FLOWER, LEAF, COLOR, FRUIT AND CULTURE, AND ONLY AFTER WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT.
5. ALL NEW PLANTS SHALL BE TAGGED AND APPROVED BY THE LANDSCAPE ARCHITECT AT THE NURSERY PRIOR TO DIGGING OR DELIVERY TO THE SITE.
6. CONTRACTOR SHALL LOCATE AND VERIFY ALL EXISTING UTILITY LINES PRIOR TO PLANTING AND SHALL REPORT ANY CONFLICTS TO THE LANDSCAPE ARCHITECT.
7. STAKE LOCATIONS OF ALL PROPOSED PLANTING FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO THE COMMENCEMENT OF PLANTING. INDIVIDUAL STAKES SHALL BE PLACED FOR TREES AND SHRUBS. EDGE OF PLANTING BEDS SHALL BE PAINTED. NOTIFY LANDSCAPE ARCHITECT 24 HOURS PRIOR TO DESIRED APPROVAL.
8. ALL NEW PLANTS SHALL BE SUPPLIED AND INSTALLED DURING THE PERIODS OF APRIL 1 - JUNE 15 AND/OR SEPTEMBER 1 - NOVEMBER 15 PER SPECIFICATIONS.
9. PREPARE ALL INDIVIDUAL TREE PITS AND SHRUB PLANTING BEDS TO A MINIMUM DEPTH OF EIGHTEEN INCHES (18") WITH SPECIFIED PLANTING MIX: 50% SCREENED TOPSOIL, 40% EXISTING SOIL AND 10% COMPOST. BLEND COMPOST INTO TOP 4" OF SOIL. PLANTING MIX SHALL BE FREE OF LUMPS, STONES, PLANTS, ROOTS, AND OTHER FOREIGN MATTER.
10. ALL SHRUB BEDS AND INDIVIDUAL TREE PITS SHALL RECEIVE THREE (3) INCHES OF BARK MULCH PER SPECIFICATIONS. PERENNIAL AND GROUNDCOVER BEDS SHALL RECEIVE TWO INCHES (2"). PROVIDE LANDSCAPE ARCHITECT WITH SAMPLE FOR APPROVAL.
11. ALL BURLAP, TWINE AND WIRE SHALL BE COMPLETELY REMOVED OR CUT AWAY AT TIME OF INSTALLATION.
12. PRUNE TREES IN ACCORDANCE WITH THE SPECIFICATIONS.
13. PLANT WARRANTY SHALL BE FOR ONE FULL GROWING SEASON FROM THE TIME OF INSTALL.
14. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ALL DAMAGED, STOLEN, DEAD, DECLINING OR LOST MATERIAL UNTIL COMPLETION OF MAINTENANCE PERIODS OR GUARANTEE PERIODS.
15. IF NO IRRIGATION SYSTEM IS PLANNED, AN APPROPRIATE WATERING SCHEDULE SHALL BE ESTABLISHED BY THE LANDSCAPE CONTRACTOR FOR ALL PLANT MATERIAL BASED UPON PLANT SPECIES REQUIREMENTS AND PROVIDED IN WRITING TO THE LANDSCAPE ARCHITECT AND OWNER FOR REVIEW AND APPROVAL. THE APPROVED SCHEDULE SHOULD BE FOLLOWED UNTIL COMPLETION OF PLANT MAINTENANCE PERIODS OR WARRANTY PERIODS.
16. ALL VEGETATION AND DEBRIS SHALL BE REMOVED FROM PROPOSED PLANTING AREAS PRIOR TO PLANTING AND BACKFILLING. CONTRACTOR SHALL REMOVE ALL WEEDS AND DEBRIS FROM SITE AS WORK PROGRESSES AND UNTIL COMPLETION OF PLANT MAINTENANCE PERIODS OR WARRANTY PERIODS.
17. ALL AREAS TO BE SEEDED OR SODDED SHALL RECEIVE SIX INCHES (6") OF LOAM, MEASURED AFTER INSTALLATION, PRIOR TO SEEDING.
18. ALL EXISTING LAWN AREAS DESIGNED TO REMAIN SHALL BE AERATED, FERTILIZED AND OVERSEEDED, AS DIRECTED BY THE LANDSCAPE ARCHITECT.
19. IN ADDITION TO LOCATIONS DEFINED FOR SEED ON THE PLANTING PLAN, THE CONTRACTOR SHALL BE RESPONSIBLE FOR SEEDING ANY DISTURBED AREAS.
20. A DETAILED PLANT MAINTENANCE MANUAL SHALL BE ESTABLISHED BY THE LANDSCAPE CONTRACTOR FOR ALL PLANT MATERIAL BASED UPON PLANT SPECIES REQUIREMENTS AND PROVIDED IN WRITING TO THE LANDSCAPE ARCHITECT AND OWNER FOR REVIEW AND APPROVAL. INFORMATION THEREIN SHALL INCLUDE REQUIRED PRUNING SCHEDULE, FERTILIZING AND PROPOSED INTEGRATED PEST MANAGEMENT (IPM) AS NECESSARY. THE APPROVED MAINTENANCE SHOULD BE FOLLOWED UNTIL COMPLETION OF PLANT MAINTENANCE PERIODS OR WARRANTY PERIODS.
21. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING CLOSE COORDINATION WITH OWNER, GENERAL CONTRACTOR, RELATED SUBCONTRACTORS, LANDSCAPE ARCHITECT, AND ALL SITE WORK RELATED ITEMS.

PLANTING PLAN SCHEDULE

KEY	BOTANICAL NAME	COMMON NAME	SIZE	QY.
TREES				
AR	ACER RUBRUM	RED MAPLE	2.5-3"	2
LT	LIRIODENDRON TULIPERA	TULIP TREE	2.5-3"	2
UA	ULMUS AMERICANA	AMERICAN ELM	2.5-3"	1

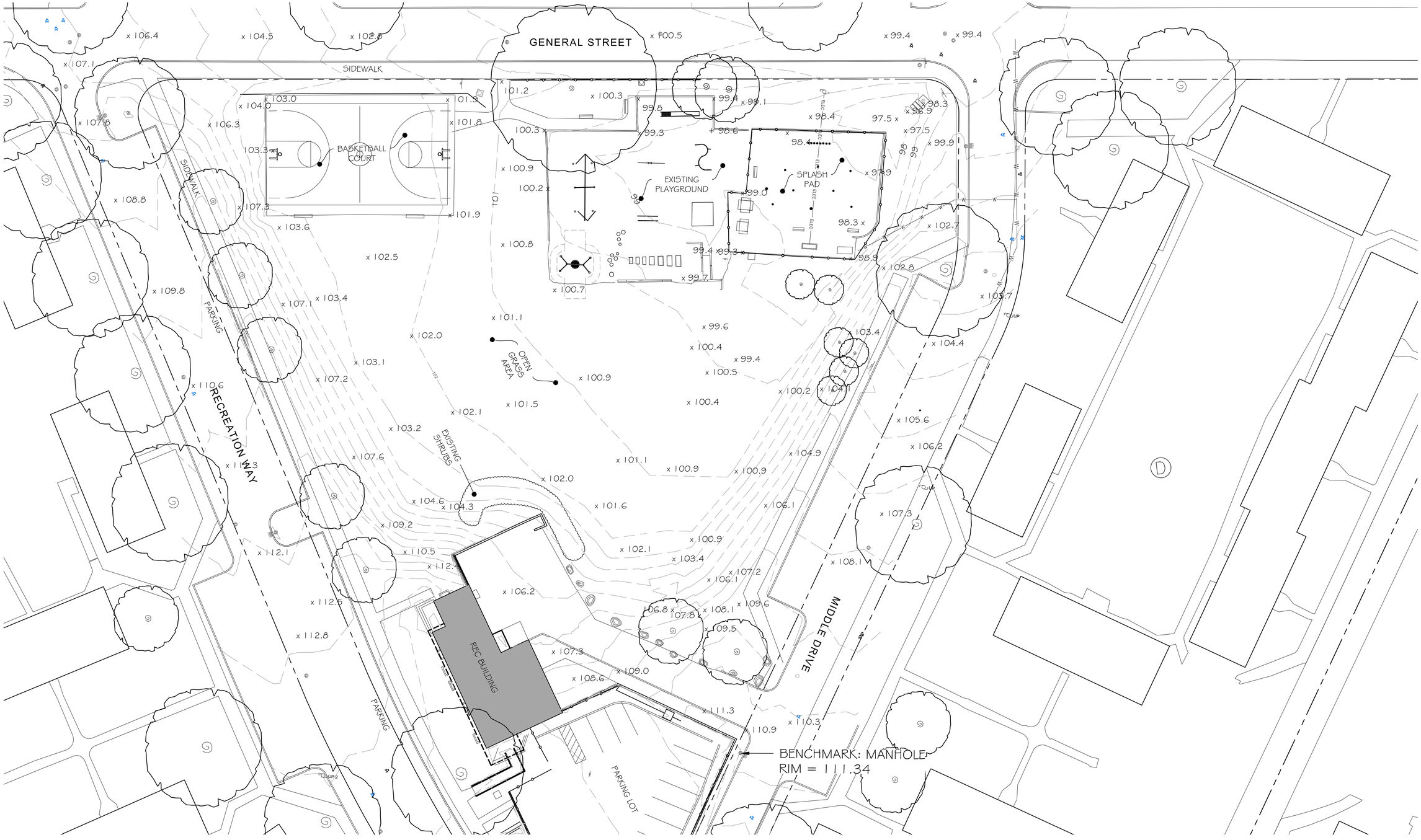
PROVIDENCE PARKS DEPARTMENT
DALRYMPLE BOATHOUSE
ROGER WILLIAMS PARK
PROVIDENCE, RI 02905

NO.	REVISION	DATE

NOTES

PARK IMPROVEMENTS AT GENERAL STREET PARK
ONE RECREATION WAY, PROVIDENCE, RI 02904

DATE: November 9, 2022
SCALE: NTS
DRAWN BY: CR
CHECKED/ APPROVED: MG
SHEET NO. L-2
2 OF 13



EXISTING CONDITIONS LEGEND

- EXISTING CONTOUR LINE (1 FT)
- x 68.52 — EXISTING SPOT ELEVATION
- PROPERTY LINE (APPROXIMATE)
- W W — WATER LINE (APPROXIMATE)
- ELEC ELEC — ELECTRICAL LINE (APPROXIMATE)
- SD SD — SEWER LINE (APPROXIMATE)
- D D — STORM DRAIN LINE (APPROXIMATE)
- X — CHAINLINK FENCE (HEIGHT VARIES) AND FENCE GATES
- MH — MANHOLE COVER
- ELECTRICAL POLE
- D — DRAINS
- TR — TRASH RECEPTACLE
- BENCHES (MATERIAL AND MOUNT VARIES)
- TREE

N W E S

0 10' 20' 40'

SCALE: 1"=20'

PROVIDENCE PARKS DEPARTMENT

DALRYMPLE BOATHOUSE
ROGER WILLIAMS PARK
PROVIDENCE, RI 02905

NO.	REVISION	DATE

EXISTING CONDITIONS

PARK IMPROVEMENTS AT GENERAL STREET PARK

ONE RECREATION WAY, PROVIDENCE, RI 02904

FILE: GeneralSt-2022-L-3_ExCon.dwg

DATE: November 9, 2022

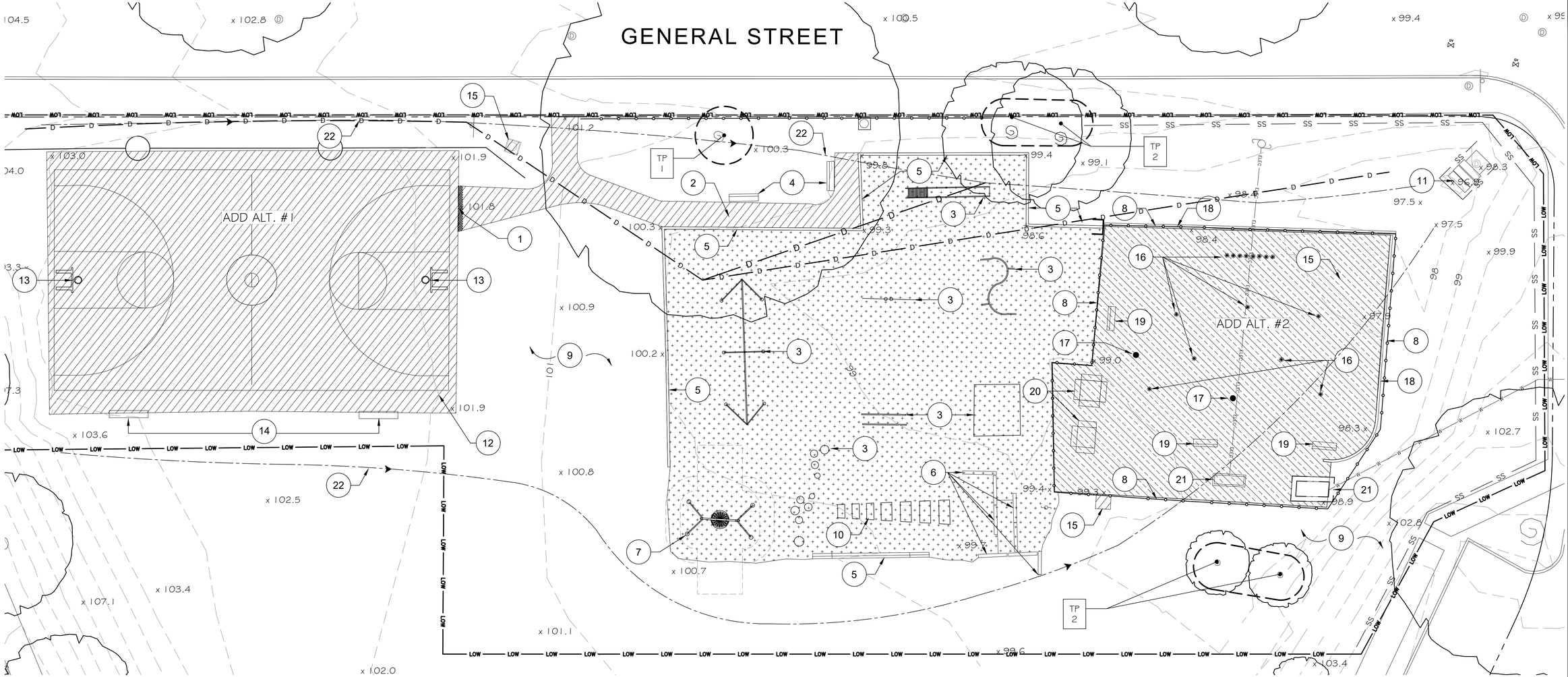
SCALE: 1"=20'

DRAWN BY: CR

CHECKED/ APPROVED: MG

SHEET NO. L-3

3 OF 13



DEMOLITION LEGEND

- x101.52 — EXISTING SPOT GRADE
- EXISTING CONTOUR
- LOW — LIMIT OF WORK
- W — WATER LINE
- ELEC — ELECTRICAL UTILITY LINE
- SS — SILT SOCK — (2 / L9)
- TP X QTY. — TREE PROTECTION — (1 / L9)
- TREE AND STUMP TO BE REMOVED AND DISPOSED OF BY OTHERS
- SAWCUT — (3 / L-9)
- BITUMINOUS CONCRETE AND 4" CEMENT CONCRETE TO BE REMOVED & DISPOSED
- CONCRETE TO BE SAWCUT, REMOVED & DISPOSED, ADD/ALT. #2
- WOOD PLAY MULCH TO BE REMOVED & DISPOSED TO DEPTH OF 12"
- CHAINLINK FENCE
- LIMIT OF REMOVAL
- D — 6" PVC DRAIN PIPE, BASE BID
- D — TRENCH LOCATION - 6" PVC DRAIN PIPE, IF ADD ALT. #2 IS ACCEPTED

DEMOLITION ITEMS

1. SAW CUT THE EXISTING BITUMINOUS ASPHALT WALKWAY AT BASKETBALL COURT, AND R&D EXISTING BITUMINOUS ASPHALT WALKWAY.
2. REMOVE & DISPOSE OF EXISTING BITUMINOUS ASPHALT WALKWAY
3. REMOVE & DISPOSE OF PLAY STRUCTURE.
4. REMOVE & DISPOSE OF IN-GROUND MOUNT BENCH.
5. REMOVE & DISPOSE OF WOOD PLAY EDGE.
6. REMOVE & STOCKPILE GRANITE CURB TO BE REPURPOSED AT OUTDOOR CLASSROOM
7. EXISTING SWING SHALL BE PROTECTED DURING CONSTRUCTION.
8. REMOVE & DISPOSE OF CLF SURROUNDING THE SPLASH PAD. STOCKPILE GATES AND HINGES.
9. AREA TO BE RE-GRADED: STRIP TURF, SCREEN AND AMEND SOIL.
10. REMOVE AND STOCKPILE TIRE TUNNEL PLAY FEATURE.
11. CLEAN DRAIN INLET TO ENSURE IT IS PROPERLY FUNCTIONING AND FREE OF TOP SOIL AND DEBRIS.
12. ADD/ALT. #1, REMOVE & DISPOSE BIT. CONC. COURT, MAINTAIN GRAVEL BASE. BASE BID NO WORK.
13. ADD/ALT. #1, BASKETBALL STANCHIONS, BACKBOARDS, AND HOOPS TO BE REMOVED AND STOCKPILED, STRIPED, SANDED AND REPAINTED. BASE BID NO WORK.
14. ADD/ALT. #1, REMOVE AND RESET PLAYERS BENCHES. BASE BID NO WORK.
15. ADD ALT. #2, REMOVE & DISPOSE OF SPLASH PAD CONCRETE, AND CONCRETE PADS. BASE BID NO WORK.
16. ADD/ALT. #2, REMOVE & DISPOSE WATER PLAY FEATURES, ALL PIPING & COUPLINGS. BASE BID NO WORK.
17. ADD/ALT. #2, REMOVE AND STOCKPILE VORTEX ACTIVATOR AND VORTEX AQUA DOME. BASE BID NO WORK.
18. ADD/ALT. #2, REMOVE & STOCKPILE CONCRETE CURB. BASE BID NO WORK.
19. ADD/ALT. #2, REMOVE & STOCKPILE BENCHES. BASE BID NO WORK.
20. ADD/ALT. #2, REMOVE & STOCKPILE PICNIC TABLES. BASE BID NO WORK.
21. ADD/ALT. #2, REMOVE & DISPOSE EXISTING MANIFOLD, STOCKPILE WATER METER & BACKFLOW PREVENTER; REMOVE & DISPOSE CONCRETE PAD; DISCONNECT WATER LINES; REMOVE & DISPOSE UTILITY CABINET. BASE BID NO WORK.
22. BIOSWALE AND TRENCH FOR DRAINAGE

N W E S

0 5' 10' 20'

PROVIDENCE PARKS DEPARTMENT

DALRYMPLE BOATHOUSE
ROGER WILLIAMS PARK
PROVIDENCE, RI 02905

NO.	REVISION	DATE

DEMOLITION PLAN

PARK IMPROVEMENTS AT GENERAL STREET PARK

ONE RECREATION WAY, PROVIDENCE, RI 02904

DATE: November 9, 2022

SCALE: 1"=10'

DRAWN BY: CR

CHECKED/ APPROVED: MG

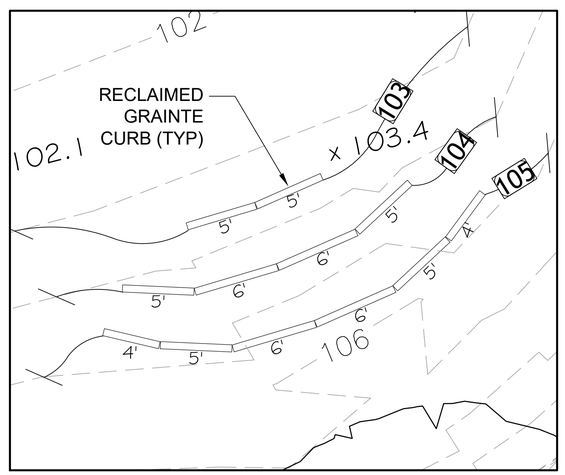
SHEET NO. L-4

4 OF 13

GENERAL STREET

GRADING NOTES

1. ALL CUT AND FILL SLOPES SHALL BE 4:1 OR LESS UNLESS OTHERWISE NOTED.
2. EXISTING GRADE CONTOUR INTERVALS ARE SHOWN AT 1 FOOT.
3. CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.
4. PROPOSED ELEVATIONS ARE SHOWN TO FINISH PAVEMENT OR GRADE UNLESS NOTED OTHERWISE.
5. ALL EARTHWORK AND SITE PREPARATION SHALL BE DONE IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF ANY SUBSURFACE INVESTIGATION OR GEOTECHNICAL REPORTS PREPARED FOR THIS SITE.
6. DRAINAGE PIPING SHALL BE HIGH DENSITY POLYETHYLENE PIPE AND CONFORM TO AASHTO M294.
7. BACKFILL ADJACENT TO PIPES AND STRUCTURES SHALL BE OF TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL. BACKFILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED SIX INCHES IN THICKNESS AND COMPACTED TO A DENSITY OF 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN ±2% OF OPTIMUM. ALL COMPACTION IS TO BE DETERMINED BY AASHTO METHOD T-99. TESTING OF BACKFILL MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
8. ALL WALKWAYS SLOPED AT 2% MAXIMUM, TYP.



2 L-5 ENLARGEMENT: OUTDOOR CLASSROOM ADD ALT. #4

1" = 5'

GRADING LEGEND

+99.35	EXISTING GRADE
102	PROPOSED GRADE
--102--	EXISTING CONTOUR
—102—	PROPOSED CONTOUR
	CATCHBASIN / DRAINAGE INLET
— D —	4" PVC DRAIN PIPE
D	DRAIN MANHOLE
— LOW —	LIMIT OF WORK
— SS —	SILT SOCK

N W E S

10 5' 10' 20'

PROVIDENCE PARKS DEPARTMENT

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ROGER WILLIAMS PARK
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GRADING PLAN

PARK IMPROVEMENTS AT GENERAL STREET PARK

ONE RECREATION WAY, PROVIDENCE, RI02904

DATE: October 13, 2022

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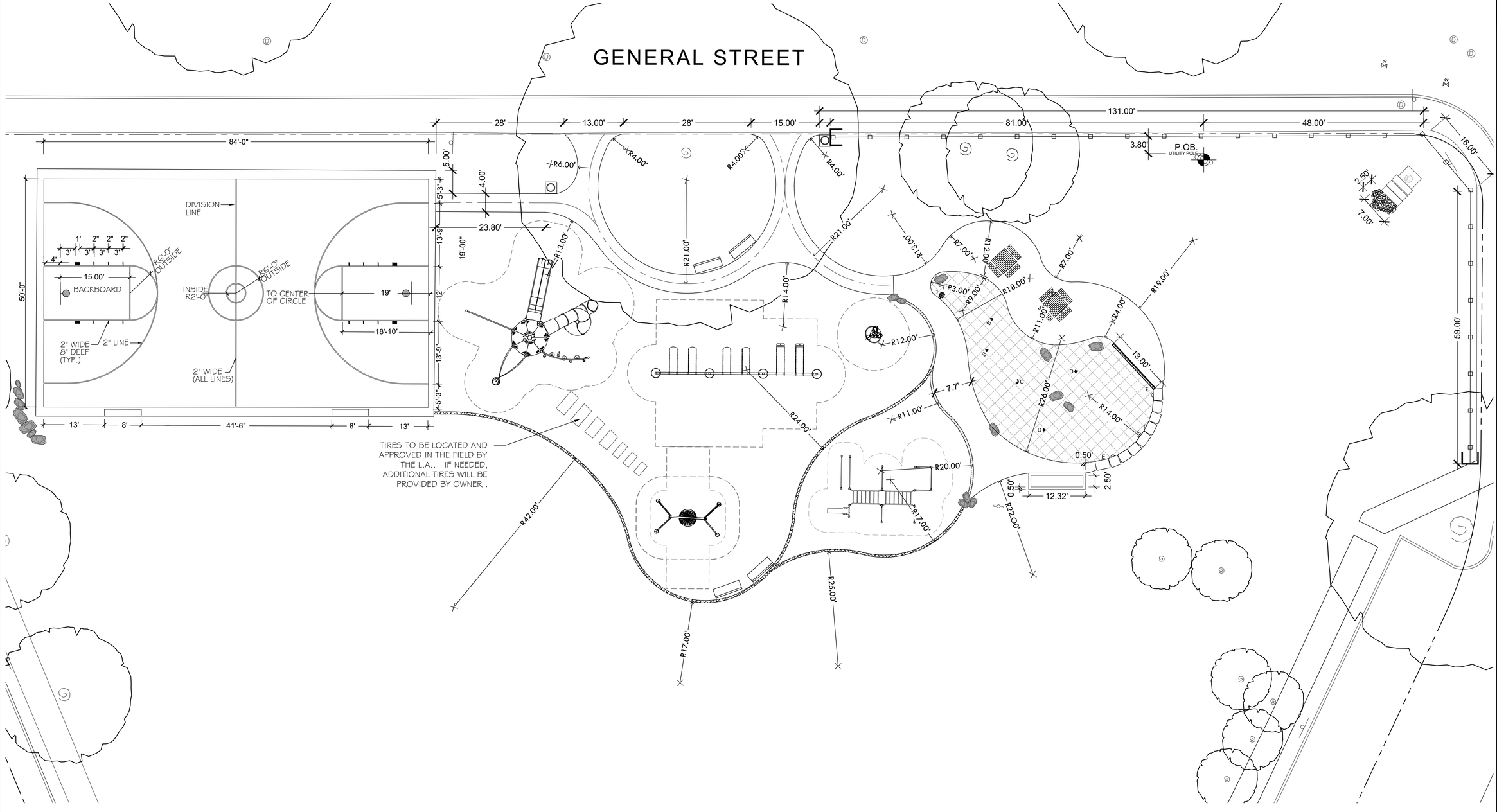
SHEET NO. L-5

5 OF 13



NOTES

SEE SHEET L-2 FOR LAYOUT NOTES
SEE SHEET L-10 FOR OUTDOOR CLASSROOM LAYOUT DETAIL 16

LAYOUT PLAN LEGEND

- P.O.B. (LOCATION) — POINT OF BEGINNING
- CENTERLINE
- PLAY EQUIPMENT USE ZONE
- PROPOSED FENCE
- X' — DIMENSION
- R X' — RADIUS
- LIFE FLOOR -SAFETY SURFACE TILES
- LIMIT OF PROPOSED FENCE

N W E S

0 5' 10' 20'

PROVIDENCE PARKS DEPARTMENT

DALRYMPLE BOATHOUSE
ROGER WILLIAMS PARK
PROVIDENCE, RI 02905

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LAYOUT PLAN

PARK IMPROVEMENTS AT GENERAL STREET PARK

ONE RECREATION WAY, PROVIDENCE, RI 02904

DATE: November 9, 2022
SCALE: 1"=10'
DRAWN BY: CR
CHECKED/ APPROVED: MG
SHEET NO. L-6
6 OF 13

NOTES:

1. ALL COATINGS AND STRIPING TO BE ACRYLIC PER SPECIFICATIONS.

2. THE CONTRACTOR SHALL CONFIRM COURT COLORS WITH OWNER PRIOR TO INSTALLATION.

GENERAL STREET

F&I CARY CO. 55 GAL. TRASH RECEPTACLE MODEL # 26GBTR5/ETR55/DL32 ON 30"x30" CONCRETE PAD OR APPROVED EQUAL (13 / L-10)

REINSTALL STOCKPILED (2) BENCHES INGROUND MOUNT (12 / L-10)

F&I CARY CO. 55 GAL. TRASH RECEPTACLE MODEL # 26GBTR5/ETR55/DL32 ON 30"X30" CONCRETE PAD OR APPROVED EQUAL (13 / L-10)

(D) (21 / L-11) F&I LSI WEE PLANET

(15 / L-10) F&I BOULDERS

(11 / L-10) F&I 4' HT. FENCE (4 GA. WELDED WIRE MESH)

ADD ALT. #1

NAVY COLOR COATING

NAVY COLOR COATING

ORANGE COLOR COATING

ORANGE COLOR COATING

ORANGE COLOR COATING

NAVY COLOR COATING

WHITE (ALL LINES)

NAVY COLOR COATING

NAVY COLOR COATING

(9 / L-10) F&I 2" BIT. CONC. PAVING

(8 / L-9) ADD ALT. #3 - F&I PRECAST CONCRETE CURB W/ REVEAL. BASE BID NO WORK.

ADD ALT. #2 - REINSTALL (2) STOCKPILED SURFACE MOUNT PICNIC TABLES. BASE BID NO WORK.

FURNISH & INSTALL RIVERSTONE, SET IN CONC. AT BASE OF DRAIN (6 / L-9)

ADD ALT. #2

OCEAN

SEA FOAM

OCEAN

AVIATOR

LIMELIGHT

(15 / L-10) ADD ALT. #2 F&I BOULDERS WITHIN SPLASH PAD AREA. BASE BID NO WORK.

(18 / L-11) ADD ALT. #2 NDS DURA-SLOPE CHANNEL DRAIN. BASE BID NOW WORK.

(32 / L-12) ADD ALT. #2 LIFE FLOOR SAFETY SURFACE TILES. BASE BID NO WORK

(29 / L-12) ADD ALT. #2 - F&I GRANITE BLOCK SEAT WALL. BASE BID NO WORK.

LIFE FLOOR SAFTEY TILE - COLORS

(12 / L-10) ADD ALT. #1 - RE-INSTALL (2) STOCKPILED PLAYERS BENCHES. BASE BID NO WORK.

(10 / L-10) (17 / L-10) ADD ALT. #1 - FURNISH & INSTALL NEW BITUMINOUS CONCRETE BASKETBALL COURT; TOP COAT, PAINT, AND STRIPE NEW COURT. RE-INSTALL STOCKPILED BASKETBALL HOOPS AND STANCHIONS. BASE BID NO WORK.

(15 / L-10) F&I BOULDERS

F&I LSI SUPER NETPLEX #6258 W/ SOL SPINNER (27 / L-12)

RELOCATED TIRE TUNNEL

F&I LSI SINGLE POST THREE BAY SWING (22 / L-11)

ADD ALT. #3

F&I PRECAST CONCRETE CURB W/ 6" REVEAL (8 / L-9)

REINSTALL (2) DUMOR BENCHES INGROUND MOUNT (12 / L-10)

DEDUCT ALT. #1 - PRECAST CONCRETE CURB BASE BID F&I

ADD ALT. #3 - F&I PRECAST CONCRETE CURB W/ REVEAL. BASE BID NO WORK. (8 / L-9)

F&I BOULDERS (15 / L-10)

ADD ALT. #2 - F&I 4" CONCRETE PAVING BASE BID NO WORK. (14 / L10)

ADD ALT. #3 - F&I KOMPAN COMBI 4 BASE BID NO WORK. (20 / L-11)

ADD ALT. #2 - F&I STAINLESS ENCLOSURE ON CONCRETE PAD, NEW COMMAND CENTER & MANIFOLD W/ PIPING TO ALL FEATURES. BASE BID NO WORK. SEE SHEET L-13 (14 / L10) (35 / L12)

MATERIALS PLAN NOTES

1. ALL LINES AND DIMENSIONS ARE PARALLEL OR PERPENDICULAR TO THE LINES FROM WHICH THEY ARE MEASURED UNLESS OTHERWISE INDICATED.
2. STORAGE AREAS FOR CONTRACTOR'S EQUIPMENT AND MATERIALS SHALL BE ON AND WITHIN LIMITS OF WORK AS SHOWN ON THE PLANS AND AS APPROVED BY THE OWNER'S REPRESENTATIVE.
3. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD AND REPORT ANY DISCREPANCIES IN THE PLAN TO THE OWNER'S REPRESENTATIVE PRIOR TO STARTING WORK.
4. ALL LAYOUTS FOR WALKS AND PATHS SHALL BE ADEQUATELY STAKED BY THE CONTRACTOR AND APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
5. BENCHES TO BE LOCATED AND APPROVED BY LANDSCAPE ARCHITECT IN THE FIELD PRIOR TO INSTALLATION.

MATERIALS PLAN LEGEND

- BITUMINOUS CONCRETE PAVING
- CONCRETE PAVING
- ENGINEERED WOOD FIBER MULCH
- PRE-CAST CONCRETE CURB W/ 6" REVEAL/FLUSH CONDITION -BASE BID
- PRE-CAST CONCRETE CURB, FLUSH - ADD ALT. #3
- LIFE FLOOR SAFETY SURFACE TILES
- NATIVE LANDSCAPE BOULDERS, QUANTITIES PER DETAIL
- 4' WELDED WIRE FENCE

N W E S

0 5' 10' 20'

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ROGER WILLIAMS PARK
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MATERIALS PLAN

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DATE: November 9, 2022

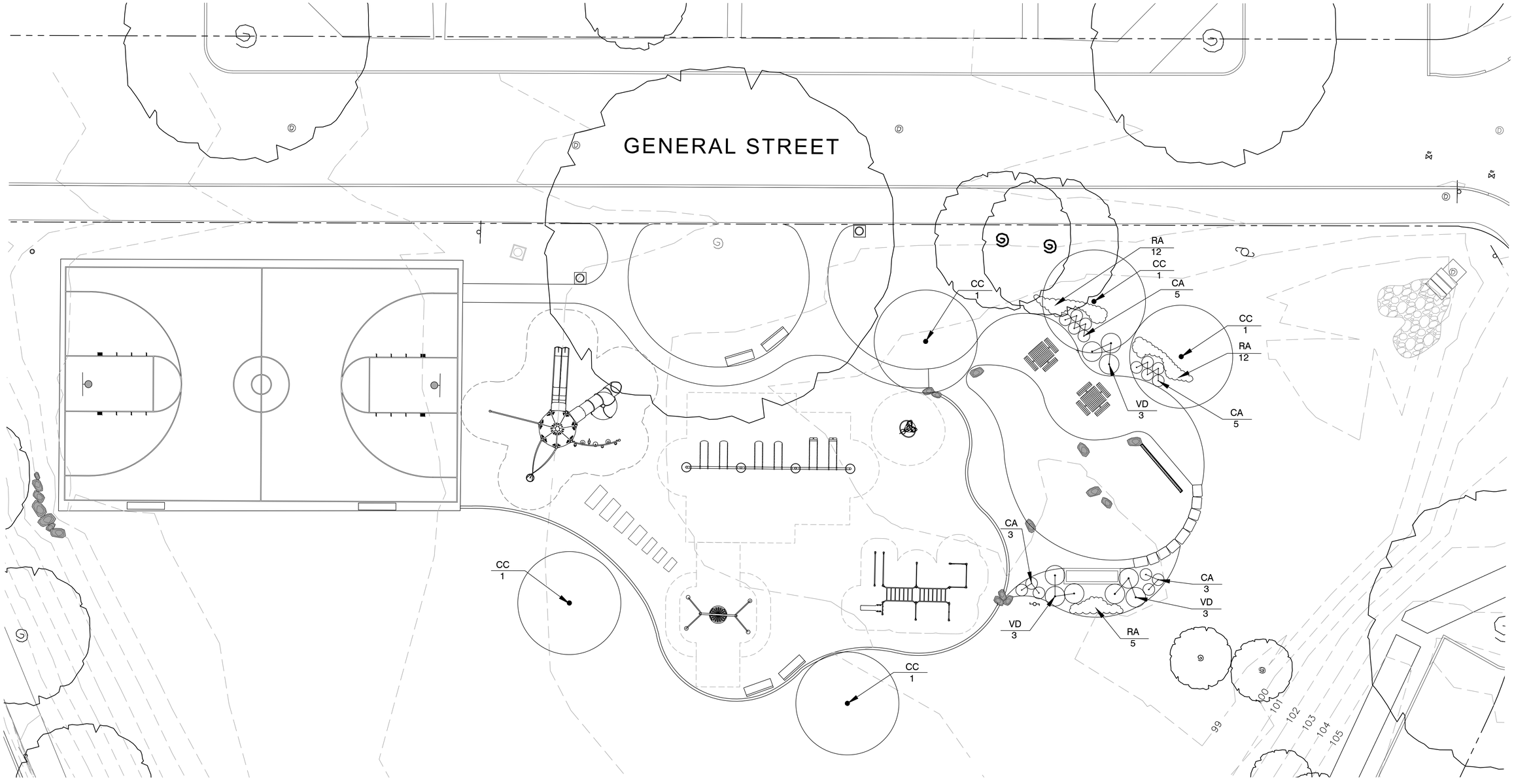
SCALE: 1"=10'

DRAWN BY: CR

CHECKED/ APPROVED: MG

SHEET NO. L-7

7 OF 13

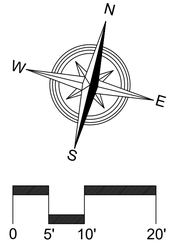


PLANTING PLAN NOTES

1. ALL NEW PLANT MATERIALS SHALL CONFORM TO THE MINIMUM GUIDELINES ESTABLISHED FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC. IN ADDITION, ALL NEW PLANT MATERIAL FOR THE PROJECT SHALL BE OF SPECIMEN QUALITY.
2. ALL NEW PLANTS TO BE BALLED AND BURLAPPED OR CONTAINER GROWN, UNLESS OTHERWISE NOTED ON THE PLANT LIST.
3. THE CONTRACTOR SHALL SUPPLY ALL NEW PLANT MATERIAL IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTING SHOWN ON THE DRAWINGS.
4. ANY PROPOSED SUBSTITUTIONS OF PLANT SPECIES SHALL BE MADE WITH PLANTS OF EQUIVALENT OVERALL FORM, HEIGHT, BRANCHING HABIT, FLOWER, LEAF, COLOR, FRUIT AND CULTURE, AND ONLY AFTER WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT.
5. ALL NEW PLANTS SHALL BE TAGGED AND APPROVED BY THE LANDSCAPE ARCHITECT AT THE NURSERY PRIOR TO DIGGING OR DELIVERY TO THE SITE.
6. CONTRACTOR SHALL LOCATE AND VERIFY ALL EXISTING UTILITY LINES PRIOR TO PLANTING AND SHALL REPORT ANY CONFLICTS TO THE LANDSCAPE ARCHITECT.
7. STAKE LOCATIONS OF ALL PROPOSED PLANTING FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO THE COMMENCEMENT OF PLANTING. INDIVIDUAL STAKES SHALL BE PLACED FOR TREES AND SHRUBS. EDGE OF PLANTING BEDS SHALL BE PAINTED. NOTIFY LANDSCAPE ARCHITECT 24 HOURS PRIOR TO DESIRED APPROVAL.
8. ALL NEW PLANTS SHALL BE SUPPLIED AND INSTALLED DURING THE PERIODS OF APRIL 15 - MAY 31 AND/OR SEPTEMBER 1 - NOVEMBER 15 PER SPECIFICATIONS.
9. PREPARE ALL INDIVIDUAL TREE PITS AND SHRUB PLANTING BEDS TO A MINIMUM DEPTH OF EIGHTEEN INCHES (18") WITH SPECIFIED PLANTING MIX: 50% SCREENED TOPSOIL, 40% EXISTING SOIL AND 10% COMPOST. BLEND COMPOST INTO TOP 4" OF SOIL. PLANTING MIX SHALL BE FREE OF LUMPS, STONES, PLANTS, ROOTS, AND OTHER FOREIGN MATTER.
10. ALL SHRUB BEDS AND INDIVIDUAL TREE PITS SHALL RECEIVE THREE (3) INCHES OF BARK MULCH PER SPECIFICATIONS. PERENNIAL AND GROUNDCOVER BEDS SHALL RECEIVE TWO INCHES (2"). PROVIDE LANDSCAPE ARCHITECT WITH SAMPLE FOR APPROVAL.
11. ALL BURLAP, TWINE AND WIRE SHALL BE COMPLETELY REMOVED OR CUT AWAY AT TIME OF INSTALLATION.

PLANTING PLAN SCHEDULE

KEY	BOTANICAL NAME	COMMON NAME	SIZE	QY.
TREES				
CC	CRATAEGUS CRUS-GALLI VAR. INERMIS	CRUSADER HAWTHORN	2.5-3"	5
SHRUBS & GROUNDCOVER				
CA	CLETHRA ALNIFOLIA 'SUGARTINA'	'SUGARTINA' SUMMERSWEET	#3	16
VD	VIBURNUM DENTATUM 'MARESII'	'MARIESII' ARROWWOOD	#3	9
RA	RHUS AROMATICA 'GRO-LOW'	'GRO-LOW' FRAGRANT SUMAC	#3	29



PROVIDENCE
PARKS DEPARTMENT

DALRYMPLE BOATHOUSE
ROGER WILLIAMS PARK
PROVIDENCE, RI 02905

NO.	REVISION	DATE

PLANTING PLAN

PARK IMPROVEMENTS AT GENERAL STREET PARK

ONE RECREATION WAY, PROVIDENCE, RI02904

DATE: October 13, 2022

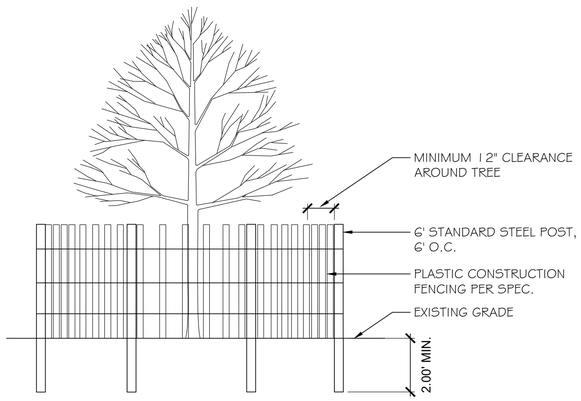
SCALE: 1" = 10'

DRAWN BY: CR

CHECKED/ APPROVED: MG

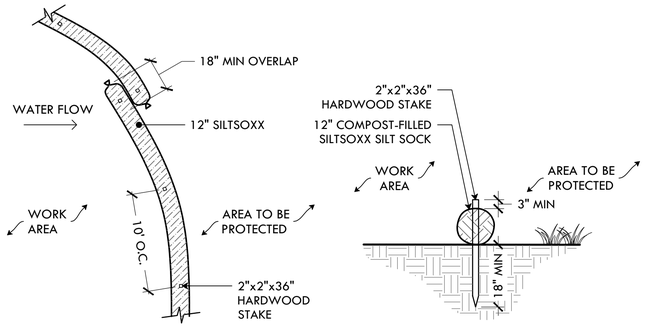
SHEET NO. L-8

8 OF 12



1 L-9 TREE PROTECTION

NOT TO SCALE

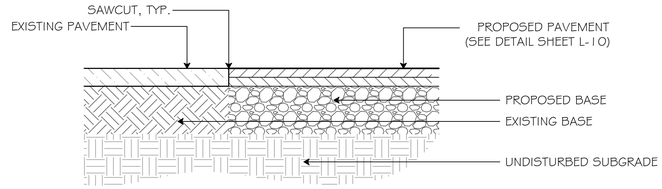


NOTES:

1. SILT SOCK SHALL BE SILTSOXX BY FILTREXX OR LANDSCAPE ARCHITECT APPROVED EQUAL.
2. FILL MATERIAL TO MEET MANUFACTURER'S SPECIFICATIONS
3. FOLLOWING CONSTRUCTION AND SITE STABILIZATION, COMPOST MATERIAL SHALL BE DISPERSED ON SITE, IN LOCATION SELECTED BY THE LANDSCAPE ARCHITECT.

2 L-9 SILT SOCK

NOT TO SCALE

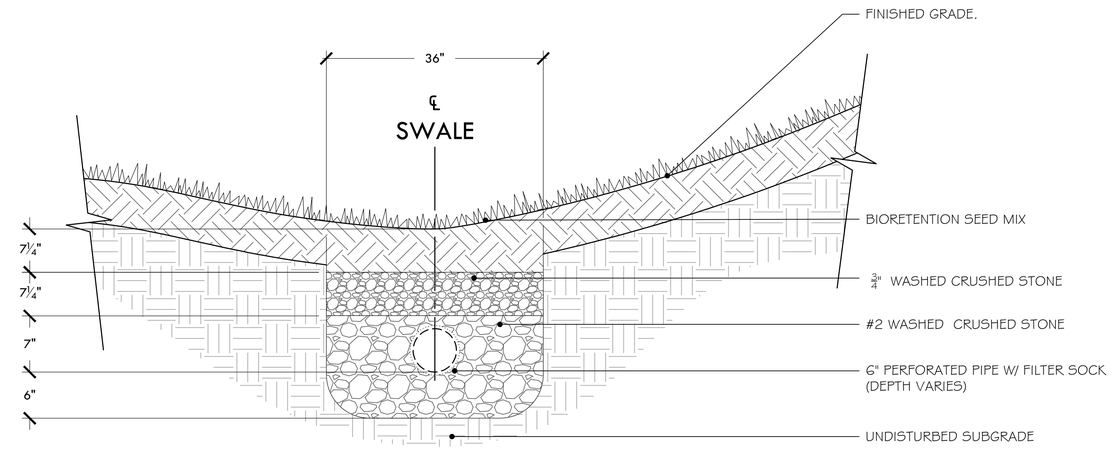


NOTES:

1. DISTURBED AREAS SHALL NOT EXTEND BEYOND THE SAWCUT.
2. CLEAN SAWED JOINTS WITH COMPRESSED AIR
3. APPLY JOINT SEAL MATERIAL FILLING FROM THE BOTTOM UP
4. THE HOT-SEAL MATERIAL SHALL COMPLETELT FILL THE SAWCUT SUCH THAT AFTER COOLING THE LEVEL OF THE SEALER WILL NOT BE GREATER 1/8" BELOW THE PAVEMENT SURFACE
5. CARE SHALL BE TAKEN DURING SEALING TO INSURE THAT THE FINAL APPEARANCE WILL PRESENT A NEAT LINE

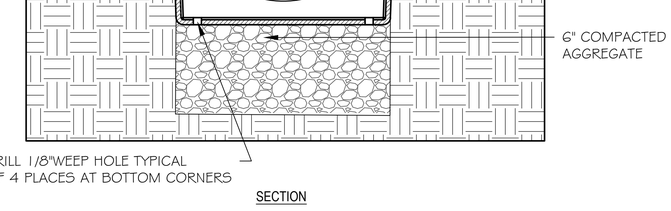
3 L-9 SAWCUT AND REPAIR

NOT TO SCALE



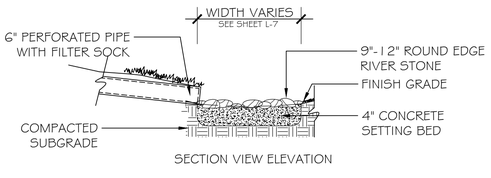
4 L-9 SWALE WITH 6" DIA. SUB-SURFACE PERFORATED DRAIN PIPE

NOT TO SCALE



5 L-9 12" CATCH BASIN

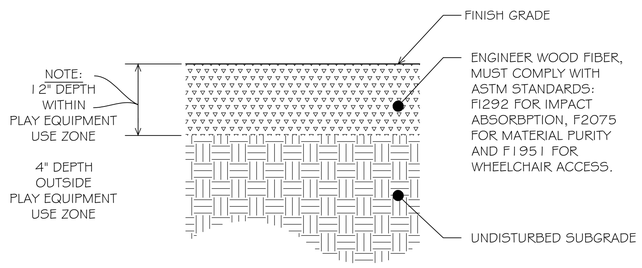
NOT TO SCALE



NOTE:
RINSE RIVER STONE PRIOR TO ON-SITE DELIVERY. STONE SHALL BE FREE FROM FOREIGN DEBRIS. RIVER STONE SHALL BE CAREFULLY PLACED NOT DUMP.

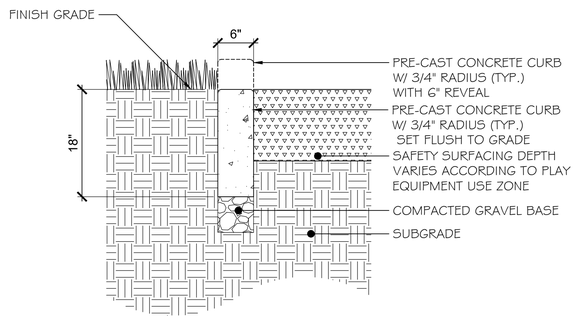
6 L-9 RIVER STONES AT DRAIN INLET IN CONCRETE SETTING BED

NOT TO SCALE



7 L-9 ENGINEERED WOOD FIBER MULCH

1" = 1'-0"



8 L-9 PRE-CAST CURB EDGE - 6" REVEAL/ FLUSH CONDITIONDS

1" = 1'-0"

PROVIDENCE PARKS DEPARTMENT

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CONSTRUCTION DETAILS

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ONE RECREATION WAY, PROVIDENCE, RI 02904

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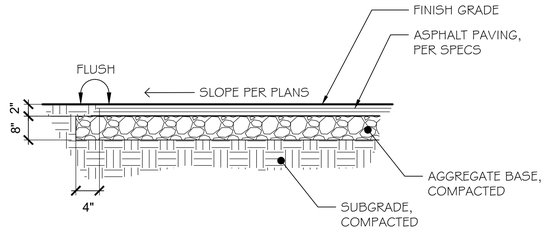
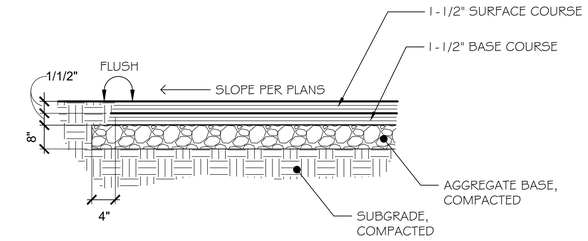
SHEET NO. L-9

9 OF 13



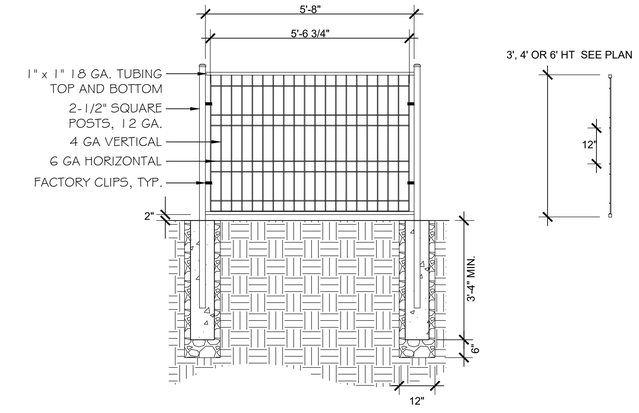
9 L-10 BITUMINOUS ASPHALT WALKWAY PAVING N.T.S.

1/2" = 1'-0"



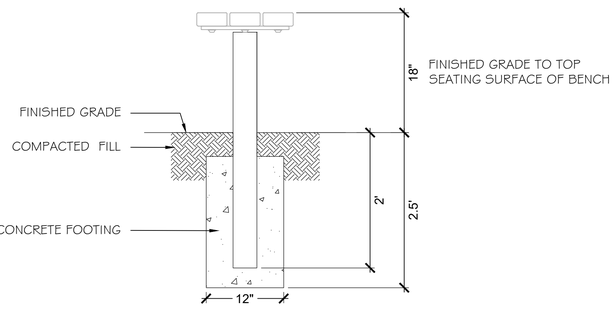
N.T.S.

10 L-10 BITUMINOUS ASPHALT PAVING - BASKETBALL COURT ADD ALT. #1



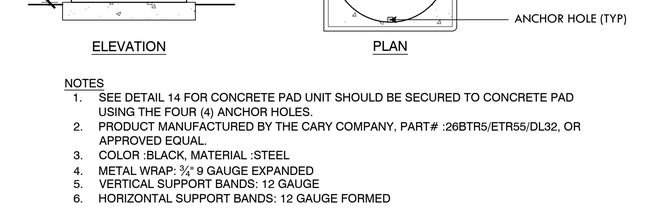
11 L-10 4' HT. WELDED WIRE FENCE

1/2" = 1'-0'



12 L-10 INGROUND MOUNT BENCH FOOTING

1" = 1'-0"

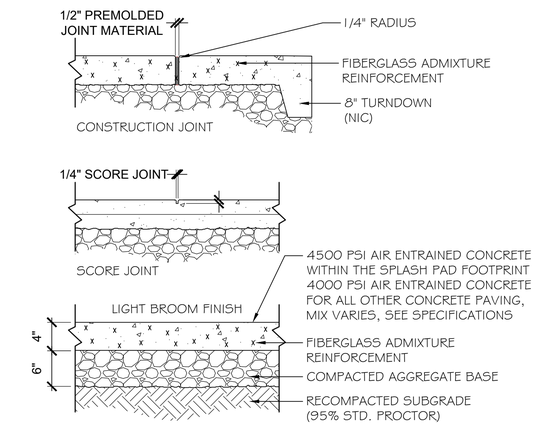


NOTES

1. SEE DETAIL 14 FOR CONCRETE PAD UNIT SHOULD BE SECURED TO CONCRETE PAD USING THE FOUR (4) ANCHOR HOLES.
2. PRODUCT MANUFACTURED BY THE CARY COMPANY, PART# :26BTR5/ETR55/DL32, OR APPROVED EQUAL.
3. COLOR :BLACK, MATERIAL :STEEL
4. METAL WRAP: ¾" 9 GAUGE EXPANDED
5. VERTICAL SUPPORT BANDS: 12 GAUGE
6. HORIZONTAL SUPPORT BANDS: 12 GAUGE FORMED

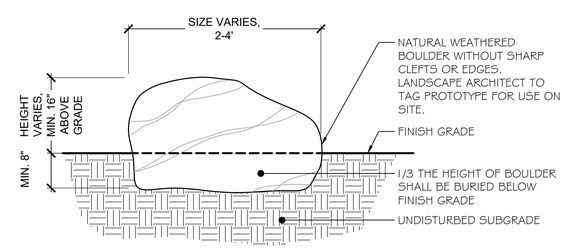
13 L-10 55 GAL. TRASH RECEPTACLE W/ LID

NOT TO SCALE



14 L-10 CONCRETE PAD

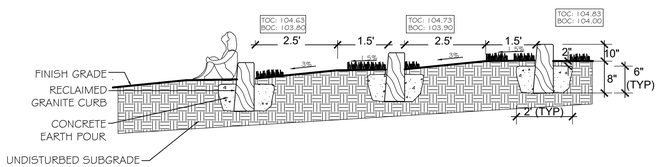
NOT TO SCALE



BOULDER QUANTITIES:
S: ±24"W x ±30"L x 24"H = 10
L: ±24"W x ±36"L x 24-36"H = 8

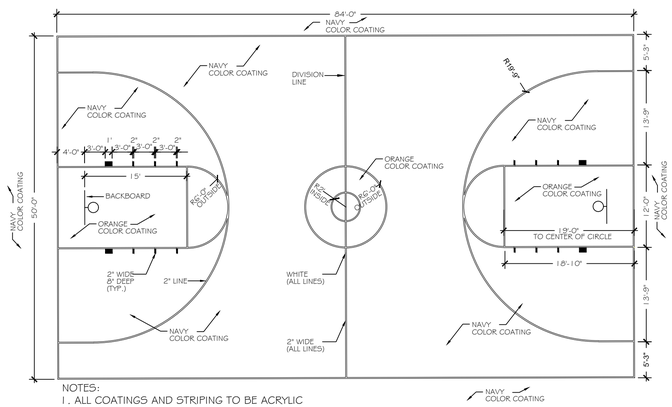
15 L-10 LANDSCAPE BOULDER

NOT TO SCALE



16 L-10 OUTDOOR CLASSROOM - GRANITE SEATING ADD ALT. #4

1" = 1'-0"



NOTES:
1. ALL COATINGS AND STRIPING TO BE ACRYLIC PER SPECIFICATIONS.

2. THE CONTRACTOR SHALL CONFIRM COURT COLORS WITH OWNER.

17 L-10 BASKETBALL COURT STRIPING/PAINTING ADD ALT. #1

NOT TO SCALE

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SHEET NO. L-10

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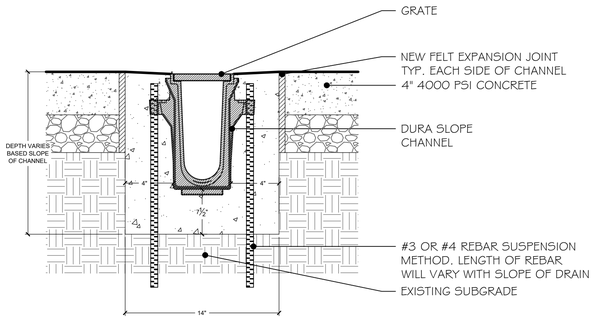
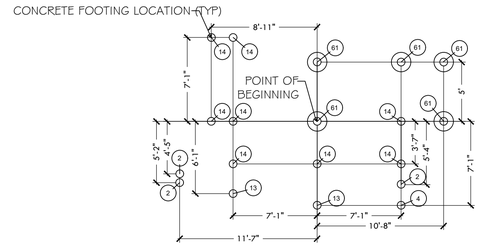


MANUFACTURER NOTES:
1. EXPANSION AND CONTRACTION CONTROL JOINTS ARE RECOMMENDED TO PROTECT THE CHANNEL AND SURROUNDING CONCRETE. CONSULT WITH AN ENGINEER NECESSARY.
2. MINIMUM CONCRETE COMPRESSIVE STRENGTH OF 4000 PSI AND VIBRATION TO ELIMINATE AIR POCKETS IS RECOMMENDED.
3. RECESS CHANNEL AND GRATE 1/8" FOR PEDESTRIAN TRAFFIC.
4. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
5. DO NOT SCALE DRAWING.

18 L-11 NDA-DURA-SLOPE CHANNEL DRAIN ADD ALT. #2

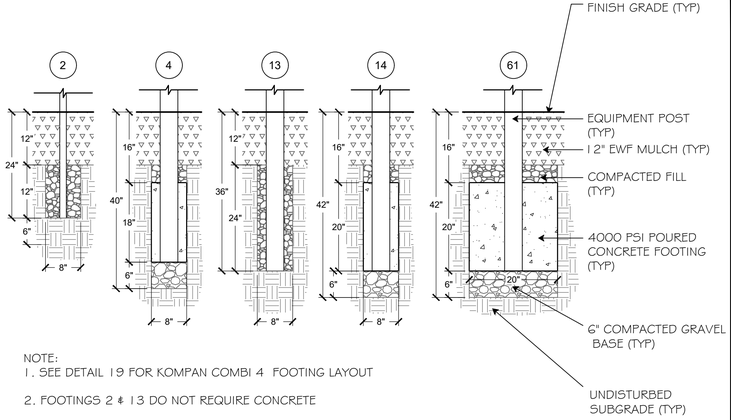
NOT TO SCALE



NOTES:
1. FOOTING ID NUMBERS REFER TO FOOTING NUMBERS IN DETAIL
2. FOOTINGS No. 2 AND 13 DO NOT REQUIRE CONCRETE FOOTINGS

19 L-11 KOMPAN - COMBI 4 FOOTING LOCATIONS ADD ALT. #3

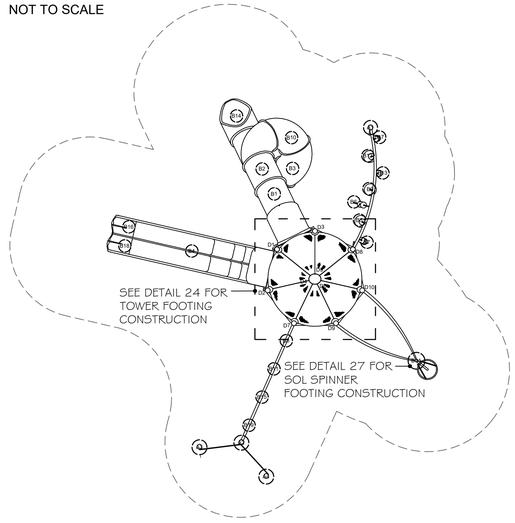
NOT TO SCALE

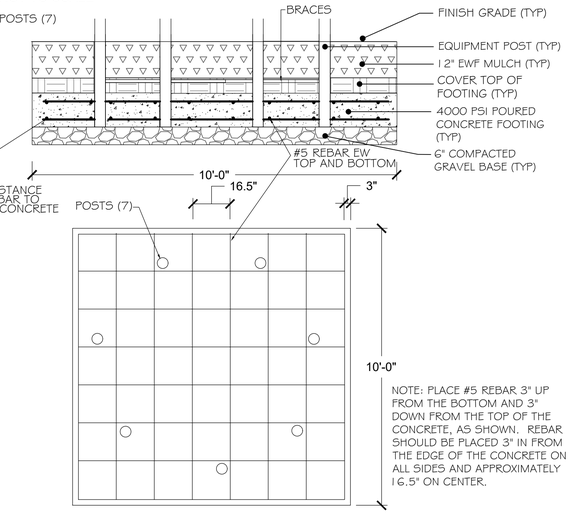


NOTE:
1. SEE DETAIL 19 FOR KOMPAN COMBI 4 FOOTING LAYOUT
2. FOOTINGS 2 & 13 DO NOT REQUIRE CONCRETE

20 L-12 KOMPAN - COMBI 4 FOOTING TYPES ADD ALT. #3

NOT TO SCALE



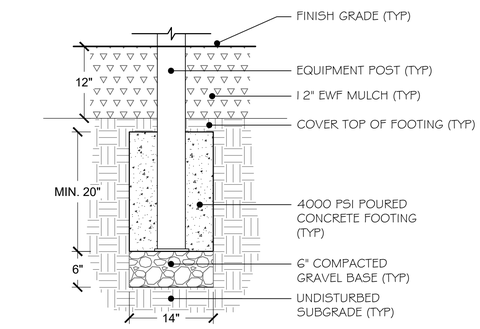


21 L-11 LSI-WEE PLANET CLIMBER - FOOTING

NOT TO SCALE

24 L-11 LSI-SUPER NETPLEX TOWER FOOTINGS

NOT TO SCALE



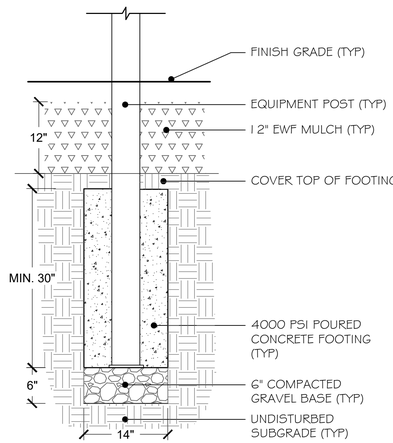
22 L-11 LSI-SINGLE POST THREE BAY SWING FOOTINGS

NOT TO SCALE

SUPER NETPLEX FOOTING
DIRECT BURY
DETAIL - A1 ,A3, A4

25 L-11 LSI-SUPER NETPLEX - DIRECT BURY FOOTINGS,A1,A3,A4

NOT TO SCALE



SUPERPLEX FOOTING
DETAIL - A2

26 L-11 LSI- SUPER NETPLEX FOOTING DETAIL - A2

NOT TO SCALE

PROVIDENCE PARKS DEPARTMENT

DALRYMPLE BOATHOUSE
ROGER WILLIAMS PARK
PROVIDENCE, RI 02905

NO.	REVISION	DATE

CONSTRUCTION DETAILS

PARK IMPROVEMENTS AT GENERAL STREET PARK

ONE RECREATION WAY, PROVIDENCE, RI 02904

DATE: November 9, 2022

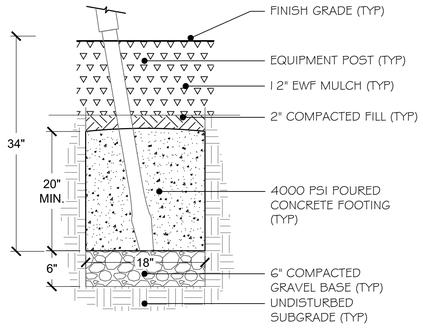
SCALE: AS SHOWN

DRAWN BY: CR

CHECKED/ APPROVED: MG

SHEET NO. L-11

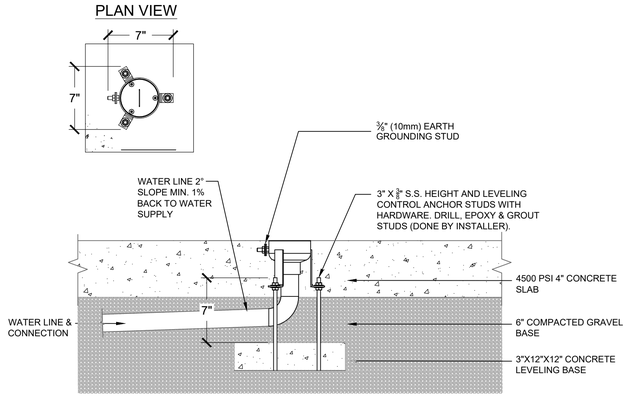
11 OF 13



SOL SPINNER FOOTING

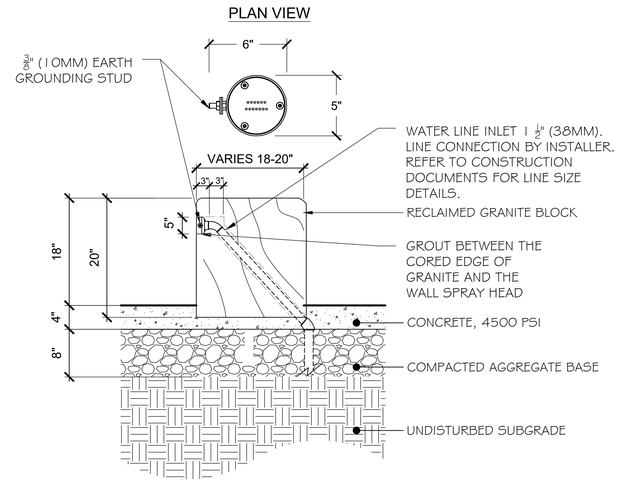
27 L-12 LSI- SOL SPINNER FOOTING

NOT TO SCALE



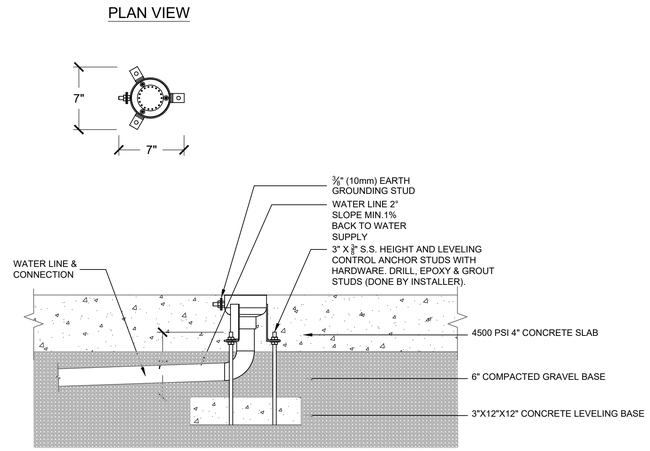
28 L-12 VORTEX JET STREAM NO. 2 ADD ALT. # 2

NOT TO SCALE



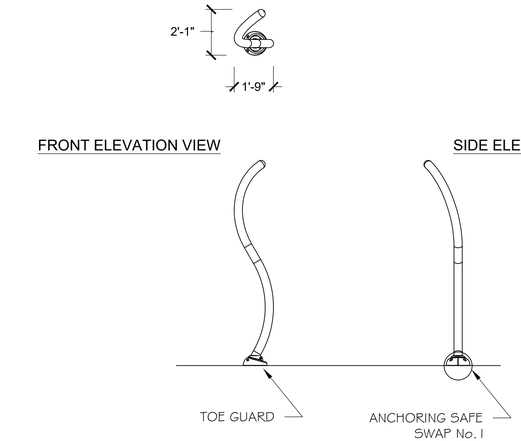
29 L-12 VORTEX WALL SPRAY - GRANITE BLOCK DETAIL ADD ALT. #2

NOT TO SCALE



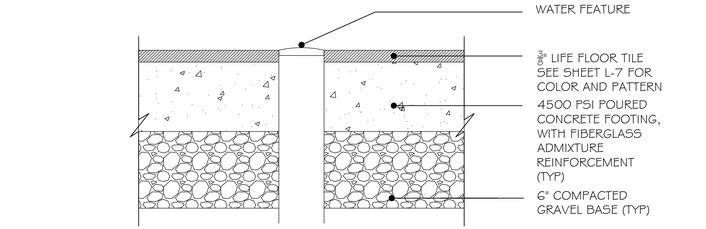
30 L-12 VORTEX SIDE WINDER ADD ALT. #2

NOT TO SCALE



31 L-12 VORTEX SILHOUETTE NO.4 ADD ALT. #2

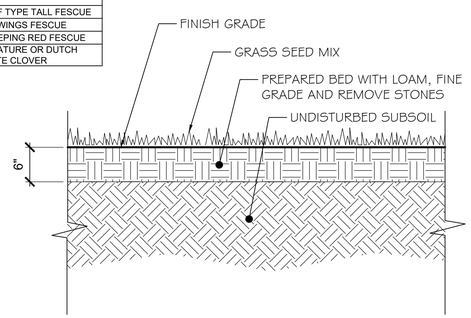
NOT TO SCALE



32 L-12 CONCRETE PAD WITH LIFE FLOOR SURFACING ADD ALT. #2

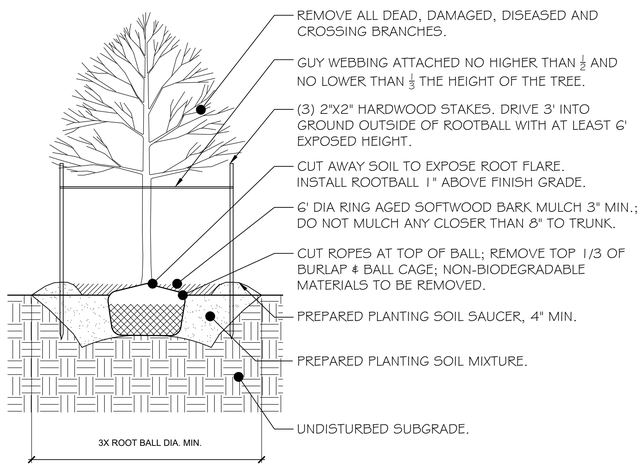
NOT TO SCALE

GRASS SEED MIX	
30%	IMPROVED PERENNIAL RYE
30%	TURF TYPE TALL FESCUE
30%	CHEWINGS FESCUE
5%	CREEPING RED FESCUE
5%	MINIATURE OR DUTCH WHITE CLOVER



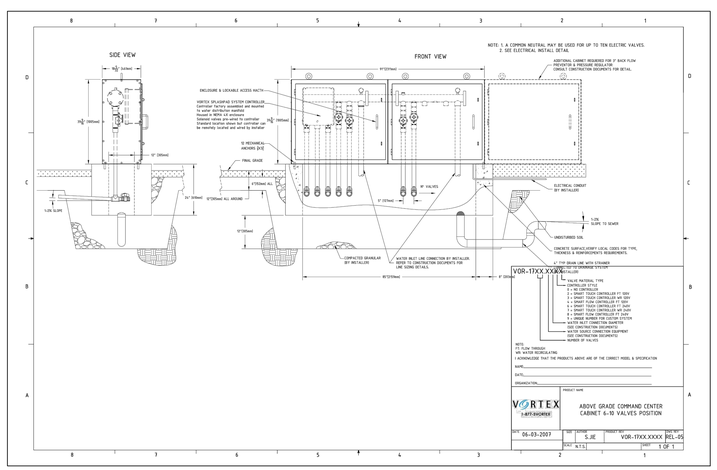
33 L-12 LOAM AND SEED

NOT TO SCALE



34 L-12 TREE PLANTING

NOT TO SCALE



35 L-12 VORTEX COMMAND CENTER ADD ALT. #2

NOT TO SCALE

NO.	REVISION	DATE

CONSTRUCTION DETAILS

PARK IMPROVEMENTS AT GENERAL STREET PARK

ONE RECREATION WAY, PROVIDENCE, RI 02904

DATE: November 9, 2022

SCALE: AS SHOWN

DRAWN BY: CR

CHECKED/ APPROVED: MG

SHEET NO. L-12

1 PIPING

1.1 WDS CONFIGURATION ARE SCHEMATIC AND MAY BE MOVED OR ADJUSTED ON SITE BY VORTEX CERTIFIED INSTALLER TO ADJUST FOR SITE CONDITIONS

1.2 ANY REQUIRED BACKFLOW PREVENTER, PRESSURE REGULATORWATER AND WATER METER ON THE CITY WATER MAIN SHALL BE PROVIDED BY INSTALLER.

1.3 ALL PIPE LINES TO FEATURES TO HAVE A 1% MINIMUM RECOMMENDED SLOPE FOR PROPER WINTERIZATION.

1.4 ALL LINE SIZING (FEATURE CONNECTION TABLE) ASSUMES A MAXIMUM DISTANCE OF 100 FEET BETWEEN THE WATER DISTRIBUTION MANIFOLD AND THE FURTHEST PLAY PRODUCT. DISTANCES ABOVE 100 FEET MAY REQUIRE AN INCREASE IN LINE SIZING. PLEASE CONTACT VORTEX.

1.5 FINAL LOCATION OF DRAIN AND LINE ROUTING ARE TO BE DETERMINED BY OTHERS.

1.6 PRESSURE LINES ARE RECOMMENDED TO BE SCHEDULE 80 PVC OR PEX, AND NON-PRESSURE LINES TO BE SCHEDULE 40, UNLESS OTHERWISE REQUESTED BY LOCAL CODE.

1.7 DRAINAGE LINES ARE RECOMMENDED TO BE SDR 35, UNLESS OTHERWISE REQUESTED BY LOCAL CODE.

1.8 PIPING SHOULD BE INSPECTED AFTER TRANSPORTATION FOR CUTS, SCRATCHES, GOUGES OR SPLITS; DAMAGED SECTIONS MUST BE DISCARDED OR CUT OUT.

1.9 PIPE SHALL BE INSTALLED BELOW THE FROST LEVEL NOT LESS THAN 12" (ASTM F-645) UNLESS OTHERWISE REQUESTED BY LOCAL CODE.

1.10 PIPE INSTALLATION MINIMUM COVER SHOULD BE EVALUATED ACCORDING TO ASTM D-2774, UNLESS OTHERWISE REQUESTED BY LOCAL CODE.

1.11 SPECIAL CONSIDERATIONS SHOULD BE TAKEN FOR THERMAL CONDITIONS, EXPANSION AND CONTRACTIONS DUE TO TEMPERATURE SHOULD BE EVALUATED BEFORE THE INSTALLATION BY THE CONTRACTOR.

1.12 VALVE NUMBER 1 IS LOCATED TO THE LEFT OF THE MANIFOLD FACING THE SOLENOID.

1.13 MINIMUM 50 PSI REQUIRED AT THE INLET OF THE BACKFLOW PREVENTER AND PRESSURE REGULATING DEVICE.

1.14 MAXIMUM FLOW CAPACITY OF MANIFOLD IS 72 GPM

1.15 TOTAL FLOW OF THE FEATURE IS 71 GPM.

1.16 FACTORY MAXIMUM SEQUENCING FLOW IS 50 GPM ACTUAL FLOW MAY VARY DUE TO SITE CONDITIONS.

2 ELECTRICAL

2.1 WIRING FROM THE CONTROLLER TO EACH ACTIVATOR SHALL BE #22 AWG. A TOTAL OF FIVE (5) CONDUCTORS PER ACTIVATOR.CABLE LENGTH UP TO 246' (75m), PROVIDED BY VORTEX.

2.2 ALL CONNECTIONS TO THE CONTROLLER AND OTHER VORTEX ELECTRICAL PANEL SHALL BE PERFORMED USING AN APPROVED NEMA 4X CONNECTOR.

2.3 WIRE FROM MAIN POWER TO VORTEX PANEL TO BE DETERMINED BY OTHERS RESPECTING THE LOCAL CODE.

2.4 MAINTAIN A MINIMUM CLEARANCE ZONE OF 36" IN FRONT OF ELECTRICAL PANEL, UNLESS OTHERWISE REQUESTED BY LOCAL CODE.

2.5 USE #8 BARE COPPER BONDING WIRE BETWEEN FEATURES TO A GROUNDING ROD IN THE SOIL, TIED INTO REBAR GRID, OR AS PER LOCAL CODE.

2.6 AS PER ELECTRICAL CONSTRUCTION AND SAFETY CODES: CONTROLLER CONTROLLER AND ANY OTHER ELECTRICAL ENCLOSURES MUST BE HARD-WIRED TO A GROUND FAULT CIRCUIT INTERRUPTER (GFCI) FROM THE INPUT POWER SOURCE.

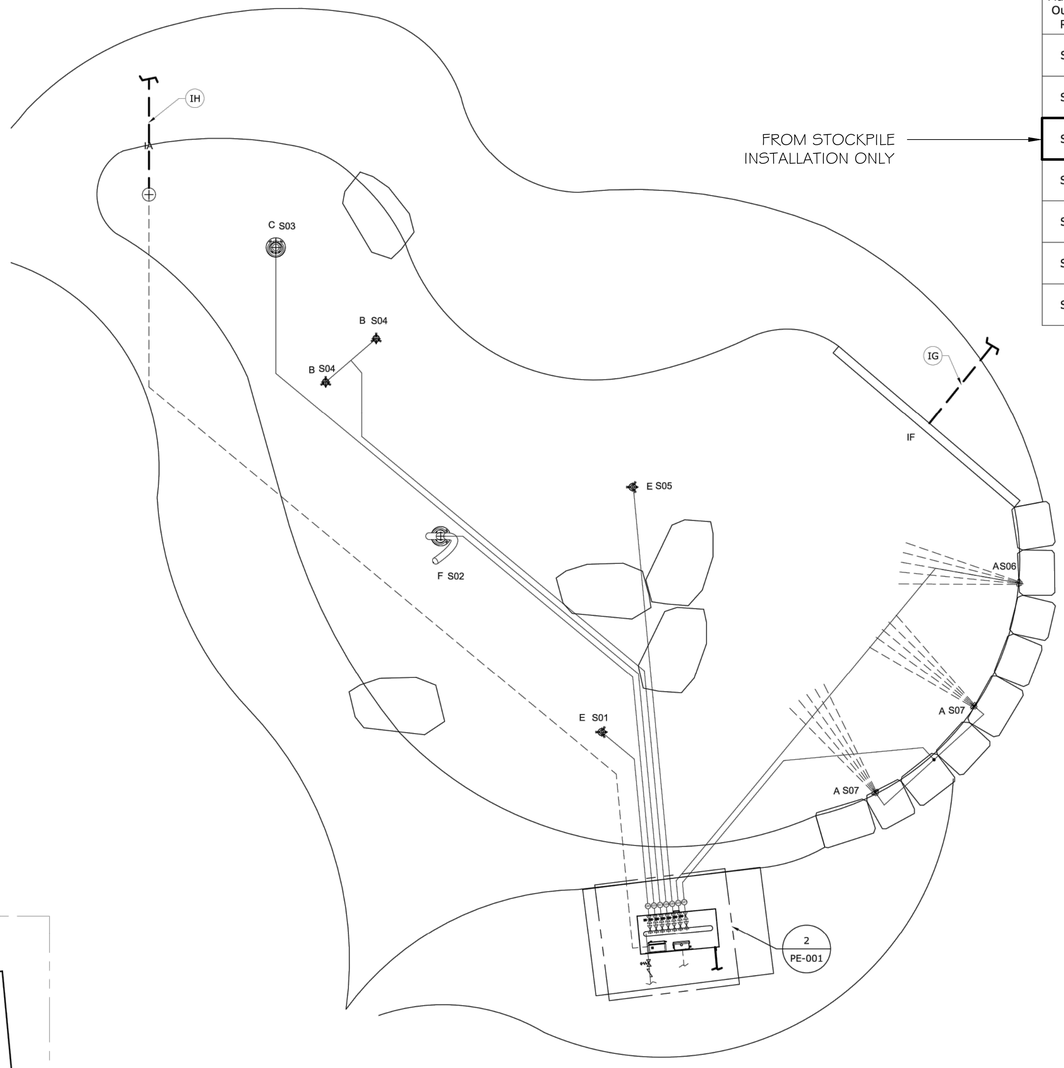
2.7 ALL ELECTRICAL WORK SHOULD BE PERFORMED BY A LICENCE ELECTRICIAN IN ACCORDANCE TO LOCAL ELECTRICAL CONSTRUCTION AND SAFETY CODES.

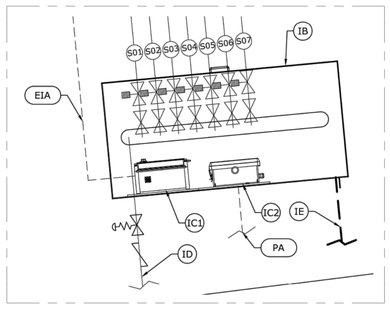
2.8 THE MAESTROPRO CONTROL PANEL IS POWERED THROUGH A MAESTROPRO POWER BOX.

2.9 THE POWER CABLE TO MAESTROPRO POWER BOX IS SUPPLIED BY INSTALLER.

2.10 THE MAESTROPRO CONTROL PANEL INTEGRATES 24 DIGITAL OUTPUTS WITH 24 VAC AND 12 DIGITAL INPUTS.

2.11 FOR REMOTE ACCESS ABILITY, A HARD CONNECTION TO AN EXISTING NETWORK IS REQUIRED USING A CAT 5 CABLE OR A CELLULAR NANO-SIM CARD WITH DATA-PLAN.





2 PE-001 PLUMBING & ELECTRICAL LAYOUT
SCALE: 3/4"=1'-0"

1 PE-001 PLUMBING & ELECTRICAL LAYOUT
SCALE: 1/4"=1'-0"

WATER LINE
DRAIN LINE
ELECTRICAL LINE

Feature Connection Table

Manifold Output Ref.	Solenoid Valve	Feature Ref.	Feature	Qty	Line Size	Gpm	Output (IC1)
S01	1 1/2" Std	E	Side Winder VOR 7518	1	1 1/2"	6.5	1
S02	1 1/2" Std	F	Silhouette N°4 VOR 7776	1	1 1/2"	9	2
S03	1 1/2" Std	C	Aqua Dome N°1 VOR 0555	1	1 1/2"	14	3
S04	1 1/2" Std	B	Jet Stream N°2 VOR 0325	2	1 1/2"	8	4
S05	1 1/2" Std	E	Side Winder VOR 7518	1	1 1/2"	6.5	5
S06	1 1/2" Std	A	Wall Spray VOR 0302	1	1 1/2"	9	6
S07	1 1/2" Std	A	Wall Spray VOR 0302	2	1 1/2"	18	7

Electrical Line Connections Power

Product Code	From	To	# Conductors	Gauge/Type	Note
PA	Main Power Line (by Owner)	IC2-120VAC (Existing)	3	TBD (by Other)	120V, 1 Phase, 60Hz, 10Amps Breaker Recommended ± 10% Voltage Drop is Acceptable

Electrical Line Connections Controller Inputs

Procuct Code	From	To	# Conductors	Gauge/Type	Note
EIA	IC1-Input 1	IA	5	22	Foot Activator 24 VDC, Max 345 mA, 246' (75m) Long Cable (by Vortex)

Product Legend

Product Ref.	Product	Qty
IA	Foot Activator VOR 0606	1
IB	Water Distribution System; ECCC Cabinet Command Center 32499D2205R01	1
IC1	MaestroPro Controller 33907.3100R01 (Existing)	1
IC2	MaestroPRO Power Box (Existing)	1
ID	2"City Water Line (by Installer)	1
IE	4" TYP Drain Line With Strainer Connected to Drainage System. Ensure P-Trap is Below Frost Line to Prevent Freezing. (by Installer)	1
IF	Trench Drain (by Other)	1
IG	Drain line To Municipal Drain (by Installer)	1
IH	1/2" Drain line To Municipal Drain (by Installer)	1
	2" Pressure Regulator (by Other)	1
	2" Backflow Preventer (by Other)	1
	1 ½" Solenoid Valve with Ball Valve	7

VORTEX USA Inc.
3500 South Dupont Highway,
Suite EP-101, Dover, Delaware
United States 19901
Phone: +1 (877) 586-7839

General Splashpad

Project Location
Providence, RI

Project Number
32499

Order Number

Date	Revision Description	No.	By
16/Sept/2022	Reissued for Approval	01	SR
16/April/2021	Issued for Approval	00	MM

Drawing Title
Plumbing & Electrical Layout

Drawn by	Verified by
SR	MAB
Scale	Date
---	16/Sept/2022

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