



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

# **REQUEST FOR PROPOSALS**

**Item Description: ARDOENE PARK IMPROVEMENTS - REBID**

**Date to be opened: OCTOBER 13, 2020 2:00 PM**

**Issuing Department: PARKS DEPARTMENT**

## **QUESTIONS**

- Please direct questions relative to the bidding process, how to fill out forms, and how to submit a bid (Pages 1-8) to Purchasing Agent Patti Jordan.
  - Phone: (401) 680-5264
  - Email: [pjordan@providenceri.gov](mailto:pjordan@providenceri.gov)
    - Please use the subject line “**RFP Question**”
- Please direct questions relative to the Minority and Women’s Business Enterprise Program and the corresponding forms (Pages 9-13) to the MBE/WBE Outreach Director for the City of Providence, Grace Diaz
  - Phone: (401) 680-5766
  - Email: [gdiaz@providenceri.gov](mailto:gdiaz@providenceri.gov)
    - Please use subject line “**MBE WBE Forms**”
- Please direct questions relative to the specifications outlined (beginning on page 14) to the issuing department’s subject matter expert:
  - **Brian F. Byrnes – Deputy Superintendent of Parks**
  - **401-660-9308**
  - [Bbyrnes@providenceri.gov](mailto:Bbyrnes@providenceri.gov)

**Pre-bid Conference (NON-MANDATORY)**

**September 28, 2020 10:00 a.m. - 143 Narragansett Ave (Site)**



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**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 3<sup>rd</sup> floor of City Hall.

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

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

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

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

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



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**BID PACKAGE CHECKLIST**

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

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

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

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

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

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

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



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**NOTICE TO VENDORS**

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



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**BID TERMS**

1. Financial assurances may be required in order to be a successful bidder for Commodity or Construction and Service contracts. If either of the first two checkboxes below is checked, the specified assurance must accompany a bid, or the bid will not be considered by the Board of Contract and Supply. The third checkbox indicates the lowest responsible bidder will be contacted and required to post a bond to be awarded the contract.
  - a)  A certified check for \$\_\_\_\_\_ must be deposited with the City Clerk as a guarantee that the Contract will be signed and delivered by the bidder.
  - b)  A bid bond in the amount of **5%** per centum (%) of the proposed total price, must be deposited with the City Clerk as a guarantee that the contract will be signed and delivered by the bidder; and the amount of such bid bond shall be retained for the use of the City as liquidated damages in case of default.
  - 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.

FORM 1: BIDDERS BLANK



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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 #: \_\_\_\_\_

E-Mail Address: \_\_\_\_\_

Agrees to bid on (Items(s) to be bid): \_\_\_\_\_

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

Please visit <http://www.naics.com/search/> and identify the NAICS Code(s) for items being bid on. Enter the NAICS code(s) here or in parentheses next to each item listed immediately above: \_\_\_\_\_

Delivery Date (when 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 Representative

\_\_\_\_\_  
Title



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**BID FORM 2: Certification of Bidder**  
(Non-Discrimination/Hiring)

Upon behalf of \_\_\_\_\_(Firm or Individual Bidding),

I, \_\_\_\_\_(Name of Person Making Certification),

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

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

I affirm by signing below that I am duly authorized on behalf of Bidder, on  
this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_\_.

\_\_\_\_\_  
Signature of Representative

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



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**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 Representative

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



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

**Waiver Requests:**

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

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

**Verifying MBE/WBE Certification**

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

**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



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the Adobe program. The fillable PDFs must be completed in Adobe in order to be saved properly. Google Chrome and similar platforms do not allow for the forms to be saved as filled PDFs. Therefore, please download the blank forms to your computer, then fill them out and save.

**Assistance with Form Requirements**

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

**Contract Requirements:**

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

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

**Questions?**

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



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**MBE/WBE PARTICIPATION AFFIDAVIT**

Item Discussion (as seen on RFP):

\_\_\_\_\_

Prime Bidder: \_\_\_\_\_

Prime Bidder (Company) Phone Number: \_\_\_\_\_

Prime Bidder (Company) Zip Code: \_\_\_\_\_

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](http://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
					\$
					\$
					\$
					\$
					\$
					\$
<b>A. MBE SUBCONTRACTED AMOUNT:</b>					\$
<b>B. WBE SUBCONTRACTED AMOUNT:</b>					\$
<b>C. NON MBE WBE SUBCONTRACTED AMOUNT:</b>					\$
<b>D. DOLLAR AMOUNT OF WORK DONE BY THE PRIME CONTRACTOR:</b>					\$
<b>E. TOTAL AMOUNT OF BID (SUM OF A, B, &amp; C):</b>					\$
<b>F. PERCENTAGE OF BID SUBCONTRACTED TO MBEs AND WBEs. (Divide A by D and multiply result by 100).</b>					%

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

\_\_\_\_\_  
Signature of Prime Contractor

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

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



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**MBE/WBE WAIVER REQUEST FORM**

**Fill out this form only if you are subcontracting and did not meet the 20% MBE/WBE participation goal.**

**State-certified MBE or WBE Prime Bidders are NOT REQUIRED to fill out this form.**

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

Prime Bidder: \_\_\_\_\_

Company Trade: \_\_\_\_\_

Item Discussion (as seen on RFP):  
\_\_\_\_\_  
\_\_\_\_\_

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

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

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

\_\_\_\_\_  
Signature of Prime Contractor

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

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

\_\_\_\_\_  
Signature of City of Providence  
MBE/WBE Outreach Director

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

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



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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



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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 ARDOENE PARK IMPROVEMENTS REBID bid affecting the cost of work, and with the Contract Documents (which includes the Invitation for Bids, Instructions to Bidders, Form of Bid Bond, Form of Agreements, form of Non-Collusive Affidavit, Addenda (if any), Drawings, Technical Specification, Form of Surety Bond(s); as prepared by the Providence Parks Department, and on file in the office of the City Clerk 3<sup>rd</sup> Floor, City Hall, Providence, RI 02903, hereby proposes to furnish all supervision, technical personnel, labor, materials, machinery, tools, equipment and services including utility and transportation services, and to perform such other required work for the ARDOENE PARK IMPROVEMENTS REBID 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.



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**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)*  
**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):

<u>Addendum No.</u>	<u>Date</u>	<u>Addendum No.</u>	<u>Date</u>
_____	_____, 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  
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**SUPPLEMENTAL BID FORM**

**ARDOENE PARK IMPROVEMENTS - REBID**

**BASE BID:** Ardoene Park is located in the Reservoir neighborhood of Providence, at Narragansett Avenue and Woodmont Street. The City of Providence is seeking qualified bidders to perform the following scope of work that shall include but is not limited to the following: Remove and replace basketball court, Remove and replace perimeter fencing, provide field improvements including Furnish and Install irrigation, infield repair and outfield fine grading, Remove and replace bit conc. walkway, Furnish and install player's benches at basketball courts.

Add Alternates include Furnish and install wood guard rail, remove and replace galvanized chain link fabric and rail protection at outfield fence, remove and replace backstop fence fabric, furnish and install protective netting, playground equipment, native boulder seating and engineered wood fiber mulch and remove and replace player's benches at dugouts.

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.

**BASE BID:** SPECIFIC SCOPE OF WORK FOR THE BASE BID (NO ALTERNATES)

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

\_\_\_\_\_  
\_\_\_\_\_ Dollars

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

CONTINGENCY: (+\$10,000) \_\_\_\_\_) Dollars

**BASE BID WITH CONTINGENCY:**

\_\_\_\_\_  
\_\_\_\_\_  
(\$ \_\_\_\_\_) Dollars

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



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**ADD ALTERNATES:**

1. Remove and Replace outfield galvanized chain link fence fabric and fence top protection. Replace top rail and all missing caps and fasteners – per lump sum

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

2. Remove and Replace galvanized chain link fence fabric and overhang at backstop. Scrape and paint (2 coats) existing poles to remain– per lump sum

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

3. Remove existing and replace (4) 8’ players’s benches in dugouts; Surface mount complete on existing concrete pad

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

4. Furnish and Install (1) Timber Stacks Eugene, modified for 2-5 age group usage – Model #ZZXX1320 from Playworld or approved equal, Complete in use zone – per lump sum

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

5. Improve outfield to include fill depressions with ½”screened loam, deep type aerate and disperse plugs, dethatch, top dress with 50/50 sand and loam mix, slice seed and fertilize – per lump sum

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

6. Furnish and Install wood guard rail – per lump sum

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

7. Furnish and Install boulders in playground – quantities as per detail – per lump sum

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

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



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8. Furnish and Install 40' height protective barrier netting as provided by Beacon Athletics or approved equal - complete with engineered footings (approx. 150 LF) – per lump sum

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

9. Remove and dispose two manhole covers and concrete surrounds – fill void to meet existing grade complete – per lump sum

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

**UNIT PRICES:**

1. Furnish and Install (3) Native Boulders sized at 30-36”

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

2. Furnish and Install (3) Native Boulders sized at 36-42”

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

3. Furnish and Install (3) Native Boulder sized at 42-48”

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

4. Remove existing and Replace 5’ wide 3” bituminous concrete walkway

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

5. Furnish and Install athletic field seed mix and loam with rough grading (Complete)

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

6. Loam (6”) Fine Grade and Seed

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

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



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7. Sod infield and infield/outfield line with 4' sod (standard) roll

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

8. Furnish and Install 1/2" screened loam (Complete)

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

9. Furnish and Install baseball field irrigation system

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

10. Rebuild pitcher's mound and regrade with proprietary infield mix

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

11. Remove and Dispose chain link fence

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

12. Furnish and Install 4' height 4 gauge black welded wire steel fence

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

13. Furnish and Install 6' height 4 gauge black welded wire steel fence

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

14. Remove and Replace 6' height galvanized chain link fence and 10' wide service gate

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

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



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15. Furnish and Install 12' height black vinyl chain link fence

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

16. Furnish and Install 40' height protective barrier netting, hot dip galvanized, approx. 150 LF

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

**17. Remove and replace 3" bituminous concrete basketball court – per lump sum**

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

18. Seal, top coat, and paint basketball courts – per lump sum

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

19. Scrape, prime and brush (2) coats outdoor zinc paint on basketball hoop posts – per lump sum

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

20. Furnish and Install (4) polycarbonate backboards w/ retrofit hardware, True Bounce model XL or approved equal – per each

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

21. Furnish and Install (4) 92" players benches on 10'x2' concrete pad

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

22. Loam and seed disturbed areas – per square foot

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

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



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

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



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**BID DOCUMENTS:**

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

**DRAWINGS:**

- L-1 – COVER SHEET
- L-2 – EXISTING CONDITIONS PLAN
- L-3 – DEMOLITION PLAN
- L-4 - GRADING PLAN
- L-5– IRRIGATION PLAN
- L-6 – SITE CONSTRUCTION PLAN
- L-7 – CONSTRUCTION DETAILS
- L-8– CONSTRUCTION DETAILS
- L-9– CONSTRUCTION DETAILS
- L-10- CONSTRUCTION DETAILS

**TECHNICAL SPECIFICATION:**

- 011000 GENERAL REQUIREMENTS
- 015639 TEMPORARY TREE AND PLANT PROTECTION
- 024119 SELECTIVE DEMOLITION
- 116800 PLAY FIELD EQUIPMENT AND STRUCTURES
- 116833 ATHLETIC FIELD EQUIPMENT
- 311000 SITE CLEARING
- 312000 EARTH MOVING
- 321216 ASPHALT PAVING
- 321220.10 BASKETBALL COURT FINISHING
- 321816.13 PLAYGROUND PROTECTIVE SURFACING
- 321823.10 INFIELD SKIN SURFACE
- 323113 CHAIN LINK FENCES AND GATES
- 323116.10 ORNAMENTAL WELDED WIRE FENCES AND GATES
- 323300 SITE FURNISHINGS
- 328400 PLANTING IRRIGATION
- 329113 SOIL PREPARATION
- 329200 TURF AND GRASSES
- 329223 SODDING

**ADDITIONAL INFORMATION REQUIRED WITH BID:**

- Qualifications to Perform Work – See Form Below for Information Required



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- 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 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.



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Questions regarding this bid package shall be submitted via e-mail to **Patti Jordan** at [pjordan@providenceri.gov](mailto:pjordan@providenceri.gov) and **Brian Byrnes, Deputy Superintendent of Parks** at [bbyrnes@providenceri.gov](mailto:bbyrnes@providenceri.gov) , no later than five (5) working days before the bid opening date.

Brian Byrnes is the project contact and can be reached at 401-660-9308.

**TECHNICAL SPECIFICATIONS**

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

**Federal Labor Standards**  
**U.S. Department of Housing & Urban Development**

**Applicability**

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

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

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

- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears a relationship to the wage rates contained in the wage determination.



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(b) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140.)

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

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

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

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

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

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



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Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017.)

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

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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

C. Health and Safety

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

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



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

Questions regarding this bid shall be sent via e-mail to Brian Byrnes at [bbyrnes@providenceri.gov](mailto:bbyrnes@providenceri.gov). Questions and responses will be sent to all bidders.

"General Decision Number: RI20200001 08/14/2020

Superseded General Decision Number: RI20190001

State: Rhode Island

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

Counties: Rhode Island Statewide.

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

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.80 for calendar year 2020 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, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.80 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 calendar year 2020. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/03/2020
1	01/24/2020
2	02/21/2020
3	03/06/2020
4	03/13/2020
5	05/01/2020
6	05/22/2020
7	06/05/2020
8	06/19/2020
9	07/24/2020
10	08/14/2020

ASBE0006-006 12/01/2019

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).....\$ 36.60 22.40

ASBE0006-008 09/01/2019

Rates Fringes

Asbestos Worker/Insulator  
 Includes application of all insulating materials, protective coverings, coatings & finishes to all types of mechanical systems.\$ 43.60 29.90

B0IL0029-001 01/01/2017

	Rates	Fringes
BOILERMAKER.....	\$ 42.42	24.92

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BRR1003-001 06/01/2020

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

-----  
BRR1003-002 03/01/2020

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

-----  
BRR1003-003 03/01/2020

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

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CARP0330-001 06/05/2020

	Rates	Fringes
CARPENTER (Includes Soft Floor Layer).....	\$ 39.13	28.60
Diver Tender.....	\$ 40.13	28.60
DIVER.....	\$ 50.73	28.60
Piledriver.....	\$ 39.13	28.60
WELDER.....	\$ 40.13	28.60

FOOTNOTES:

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

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

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

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

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CARP1121-002 01/06/2020

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

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ELEC0099-002 06/01/2020

	Rates	Fringes
ELECTRICIAN.....	\$ 41.61	57.24%
Teledata System Installer.....	\$ 31.21	13.10%+14.93

FOOTNOTES:

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

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

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ELEV0039-001 01/01/2020

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 53.25	34.765+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.

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ENGI0057-001 06/01/2020

	Rates	Fringes
Operating Engineer: (power plants, sewer treatment plants, pumping stations, tunnels, caissons, piers, docks, bridges, wind turbines, subterranean & other marine and heavy construction work)		
GROUP 1.....	\$ 42.55	26.95+a
GROUP 2.....	\$ 40.55	26.95+a
GROUP 3.....	\$ 36.17	26.95+a
GROUP 4.....	\$ 33.32	26.95+a
GROUP 5.....	\$ 39.60	26.95+a
GROUP 6.....	\$ 30.40	26.95+a
GROUP 7.....	\$ 24.40	26.95+a
GROUP 8.....	\$ 36.25	26.95+a
GROUP 9.....	\$ 40.17	26.95+a

a. BOOM LENGTHS, INCLUDING JIBS:

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

a. PAID HOLIDAYS:

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

a. FOOTNOTES:

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

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Cranes, lighters, boom trucks and derricks

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

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ENGI0057-002 05/01/2020

	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.....	\$ 35.70	26.95+a
GROUP 2.....	\$ 30.40	26.95+a
GROUP 3.....	\$ 24.40	26.95+a
GROUP 4.....	\$ 30.98	26.95+a
GROUP 5.....	\$ 34.68	26.95+a
GROUP 6.....	\$ 34.30	26.95+a
GROUP 7.....	\$ 29.95	26.95+a
GROUP 8.....	\$ 31.33	26.95+a
GROUP 9.....	\$ 33.28	26.95+a

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

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

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

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

GROUP 2: Well point installation crew

GROUP 3: Utility engineers and signal persons

GROUP 4: Oiler on cranes

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

GROUP 6: Roller,skid steer loaders, street sweeper

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

GROUP 8: Stone crusher

GROUP 9: Mechanic & welder

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ENGI0057-003 06/01/2020

BUILDING CONSTRUCTION

	Rates	Fringes
Power Equipment Operator		
GROUP 1.....	\$ 41.82	26.95+a
GROUP 2.....	\$ 39.82	26.95+a
GROUP 3.....	\$ 39.60	26.95+a
GROUP 4.....	\$ 35.60	26.95+a
GROUP 5.....	\$ 32.75	26.95+a
GROUP 6.....	\$ 38.90	26.95+a
GROUP 7.....	\$ 38.47	26.95+a

GROUP 8.....\$ 35.79 26.95+a

a. BOOM LENGTHS, INCLUDING JIBS:

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

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

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

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

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

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

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

GROUP 4: Fireman & oiler on cranes

GROUP 5: Oiler on crawler backhoe

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

GROUP 7: Well point installation crew

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

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IRON0037-001 09/16/2019

	Rates	Fringes
IRONWORKER.....	\$ 36.27	28.98

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LABO0271-001 06/02/2019

BUILDING CONSTRUCTION

	Rates	Fringes
LABORER		
GROUP 1.....	\$ 31.80	25.05
GROUP 2.....	\$ 32.05	25.05
GROUP 3.....	\$ 32.55	25.05
GROUP 4.....	\$ 32.80	25.05
GROUP 5.....	\$ 33.80	25.05

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

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LAB00271-002 06/02/2019

HEAVY AND HIGHWAY CONSTRUCTION

	Rates	Fringes
LABORER		
COMPRESSED AIR		
Group 1.....	\$ 49.23	23.50
Group 2.....	\$ 38.75	23.50
Group 3.....	\$ 51.23	23.50
FREE AIR		
Group 1.....	\$ 41.30	23.50
Group 2.....	\$ 38.75	23.50
Group 3.....	\$ 43.30	23.50
LABORER		
Group 1.....	\$ 31.80	23.05
Group 2.....	\$ 32.05	23.05
Group 3.....	\$ 32.80	23.05
Group 4.....	\$ 25.30	23.05
Group 5.....	\$ 33.80	23.05
OPEN AIR CAISSON, UNDERPINNING WORK AND BORING CREW		
Bottom Man.....	\$ 37.80	23.05
Top Man & Laborer.....	\$ 36.85	23.05
TEST BORING		
Driller.....	\$ 38.25	23.05
Laborer.....	\$ 36.85	23.05

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

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PAIN0011-005 06/01/2020

	Rates	Fringes
PAINTER		
Brush and Roller.....	\$ 35.62	22.55
Epoxy, Tanks, Towers, Swing Stage & Structural Steel.....	\$ 37.62	22.55
Spray, Sand & Water Blasting.....	\$ 38.62	22.55
Taper.....	\$ 36.37	22.55
Wall Coverer.....	\$ 36.12	22.55

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PAIN0011-006 06/01/2020

	Rates	Fringes
GLAZIER.....	\$ 39.18	22.55

FOOTNOTES:

SWING STAGE: \$1.00 per hour additional.

PAID HOLIDAYS: Labor Day & Christmas Day.

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PAIN0011-011 06/01/2020

	Rates	Fringes
Painter (Bridge Work).....	\$ 52.25	22.55

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PAIN0035-008 06/01/2011

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

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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.

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PLAS0040-002 07/01/2019

HEAVY AND HIGHWAY CONSTRUCTION

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

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PLAS0040-003 07/01/2019

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

PLUM0051-002 03/02/2020

	Rates	Fringes
Plumbers and Pipefitters.....	\$ 43.69	30.05

ROOF0033-004 06/01/2020

	Rates	Fringes
ROOFER.....	\$ 39.15	27.31

SFRI0669-001 01/02/2020

	Rates	Fringes
SPRINKLER FITTER.....	\$ 45.67	24.74

\* SHEE0017-002 07/01/2020

	Rates	Fringes
Sheet Metal Worker.....	\$ 38.29	36.72

TEAM0251-001 05/01/2019

HEAVY AND HIGHWAY CONSTRUCTION

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

FOOTNOTES:

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

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

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

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

TRUCK DRIVER CLASSIFICATIONS

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

GROUP 2: Two-axle on low beds

GROUP 3: Two-axle dump truck

GROUP 4: Three-axle dump truck

GROUP 5: Four- and five-axle equipment

GROUP 6: Low-bed or boom trailer.

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

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

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

GROUP 10: Tractor trailer

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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 [www.dol.gov/whd/govcontracts](http://www.dol.gov/whd/govcontracts).

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

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

Union Rate Identifiers

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

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

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates

the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

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

#### Union Average Rate Identifiers

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

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

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#### WAGE DETERMINATION APPEALS PROCESS

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

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

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have 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"

Division	Section Title	Pages
SPECIFICATIONS GROUP		
<i>General Requirements Subgroup</i>		
<b>DIVISION 01</b>	<b>- GENERAL REQUIREMENTS</b>	
010000	GENERAL REQUIREMENTS	16
015639	TEMPORARY TREE AND PLANT PROTECTION	5
<i>Facility Construction Subgroup</i>		
<b>DIVISION 02</b>	<b>- EXISTING CONDITIONS</b>	
024119	SELECTIVE DEMOLITION	3
<b>DIVISION 11</b>	<b>- EQUIPMENT</b>	
116800	PLAY FIELD EQUIPMENT AND STRUCTURES	4
116883	ATHLETIC FIELD EQUIPMENT	2
<i>Site and Infrastructure Subgroup</i>		
<b>DIVISION 31</b>	<b>- EARTHWORK</b>	
311000	SITE CLEARING	4
312000	EARTH MOVING	6
<b>DIVISION 32</b>	<b>- EXTERIOR IMPROVEMENTS</b>	
321216	ASPHALT PAVING	5
321220.10	BASKETBALL COURT FINISHING	5
321816.13	PLAYGROUND PROTECTIVE SURFACING	3
321823.10	INFIELD SKIN SURFACE	4
323113	CHAIN LINK FENCES AND GATES	6
323116.10	ORNAMENTAL WELDED WIRE FENCES AND GATES	5
323300	SITE FURNISHINGS	3
328400	PLANTING IRRIGATION	28
329113	SOIL PREPARATION	7

329200	TURF AND GRASSES	6
329223	SODDING	4

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.

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

#### E. PROJECT INFORMATION

##### 1. OWNER

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

b. Superintendent of Parks: Wendy Nilsson

##### 2. OWNER'S REPRESENTATIVE

a. Brian Byrnes, bbyrnes@providenceri.gov, 401-680-7202

### 1.2 PROJECT LOCATION

A. 143 Narragansett Avenue, Providence, RI, 02905

### PART 2 - PRODUCTS

#### 2.1 CONTRACTOR USE OF PREMISES

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

1. The Contractor shall maintain vehicular access and utility service to the abutting properties at all times throughout the course of the construction.

2. The Contractor shall assume full responsibility for security of all materials and equipment on the site, including those of the subcontractors.



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

## 2.2 OWNER OCCUPANCY REQUIREMENTS

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

## 2.3 MOBILIZATION, SITE PREPARATION, & DEMOLITION

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

## 2.4 CONSTRUCTION STAGING/STOCKPILE AREAS

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

## 2.5 MATERIALS AND EQUIPMENT:

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



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

## 2.6 TEMPORARY CONSTRUCTION FACILITIES AND UTILITIES

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

## 2.7 SITE MAINTENANCE

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

## 2.8 TRAFFIC CONTROL

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

## 2.9 DEMOBILIZATION

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



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

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

### PART 3 - EXECUTION

#### 3.1 GENERAL REQUIREMENTS

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

#### 3.2 CHANGE ORDER PROCEDURE

##### A. DESCRIPTION

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



### 3.3 CHANGE SUBMITTALS

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

### 3.4 COMPLIANCE

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

### 3.5 PROCESSING CHANGES INITIATED BY THE OWNER'S REPRESENTATIVE

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



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

### 3.6 PROCESSING CHANGES INITIATED BY THE CONTRACTOR

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

### 3.7 EXECUTING CHANGED WORK

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

### 3.8 TERMINATIONS AND DELAYS

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



### 3.9 INSPECTION OF WORK

#### A. DESCRIPTION

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

### 3.10 CONSTRUCTION SCHEDULES

#### A. DESCRIPTION



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

### 3.11 CONSTRUCTION SCHEDULE

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

### 3.12 PERIODIC SCHEDULE UPDATES

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

### 3.13 SUBMITTAL PROCEDURES

#### A. DESCRIPTION

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



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

### 3.14 DRAWINGS

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



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

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

### 3.15 SAMPLES

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

### 3.16 PRODUCT DATA

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

#### B. SUBMITTAL LOG

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

### 3.17 QUALITY CONTROL DESCRIPTION

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



### 3.18 WORKMANSHIP

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

### 3.19 MANUFACTURER'S INSTRUCTIONS

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

### 3.20 MANUFACTURER'S CERTIFICATES

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

### 3.21 TESTING LABORATORY SERVICES (NIC)

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

### 3.22 MANUFACTURER'S FIELD SERVICES

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

### 3.23 AUTHORITY OF OWNER'S REPRESENTATIVE

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



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

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

### 3.24 COORDINATION OF DRAWINGS AND SPECIFICATIONS

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

### 3.25 COOPERATION WITH UTILITIES

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

### 3.26 INDEPENDENT TESTING AND INSPECTION (NIC)

- A. Not Applicable under this Contract



### 3.27 REQUIREMENTS

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

### 3.28 MATERIAL AND EQUIPMENT

#### A. DESCRIPTION

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

### 3.29 MANUFACTURER REQUIREMENTS

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

### 3.30 TRANSPORTATION AND HANDLING

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

### 3.31 STORAGE AND PROTECTION

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



### 3.32 SUBSTITUTIONS

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

### 3.33 REJECTED MATERIALS AND DEFECTIVE WORK

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

### 3.34 PROJECT CLOSEOUT

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



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

### 3.35 WARRANTIES

#### A. DESCRIPTION

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

#### B. DEFINITIONS

1. Standard Warranties



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

#### C. WARRANTY REQUIREMENTS

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

#### D. WARRANTY PERIOD

1. All warranties required by the Contract documents shall commence on the date of Final Acceptance

END OF SECTION 010000



## SECTION 015639 - TEMPORARY TREE AND PLANT PROTECTION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes general protection and pruning of existing trees and plants that are affected by execution of the Work, whether temporary or permanent construction.

#### 1.3 DEFINITIONS

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

#### 1.4 PRE- ONSTRUCTION MEETINGS

- A. Pre-construction Conference: Conduct conference at Project site .
  - 1. Review methods and procedures related to temporary tree and plant protection including, but not limited to, the following:
    - a. Tree-service firm's personnel, and equipment needed to make progress and avoid delays.
    - b. Arborist's responsibilities.
    - c. Coordination of Work and equipment movement with the locations of protection zones.
    - d. Trenching by hand or with air spade within protection zones.
    - e. Field quality control and maintenance.
    - f. Coordination by Parks Department City Forester and Forestry crews.



## 1.5 ACTION SUBMITTALS

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

## 1.6 QUALITY ASSURANCE

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

## 1.7 FIELD CONDITIONS

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

## PART 2 - PRODUCTS

### 2.1 MATERIALS

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



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

### PART 3 - EXECUTION

#### 3.1 PREPARATION

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

#### 3.2 PROTECTION ZONES

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

#### 3.3 EXCAVATION

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



installation of utilities. Cut roots as required for root pruning. If excavating by hand, use narrow-tine spading forks to comb soil and expose roots.

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

### 3.4 ROOT PRUNING

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

### 3.5 REGRADING

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



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

### 3.6 REPAIR AND REPLACEMENT

- A. General: Repair or replace trees, shrubs, and other vegetation indicated to remain or to be relocated that are damaged by construction operations, in a manner approved by Owner's Representative.
  - 1. Submit details of proposed pruning and repairs.
  - 2. Perform repairs of damaged trunks, branches, and roots within 24 hours according to arborist's written instructions.
  - 3. Replace trees and other plants that cannot be repaired and restored to full-growth status, as determined by Owner's Representative. Replacement trees to be equal to the total diameter of mature tree by multiple equal diameter specimens.
- B. Trees: Remove and replace trees tha damaged during construction operations that Owner's Representative determines are incapable of restoring to normal growth pattern.
  - 1. Small Trees: Provide new trees of same size and species as those being replaced for each tree that measures 4" or smaller in caliper size.
  - 2. Large Trees: Provide multiple trees of 2-1/2" - 3" caliper size to equal total diameter of tree being replaced. .
    - a. Species: As determined by Owner's Representative.
  - 3. Plant and maintain new trees as specified in Section 329300 "Plants."
- C. Soil Aeration: Where directed by Owner's Representative, aerate surface soil compacted during construction. Aerate to loosen soil 10 feet beyond drip line and no closer than 36" to tree trunk with air spade.

### 3.7 DISPOSAL OF SURPLUS AND WASTE MATERIALS

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

END OF SECTION 015639



## SECTION 024119 - SELECTIVE DEMOLITION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Conditions, 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. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.
- C. 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 PREINSTALLATION MEETINGS

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



1. Inspect and discuss condition of construction to be selectively demolished.

#### 1.6 FIELD CONDITIONS

- A. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- B. Notify Owner Representative of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- C. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
  1. Hazardous materials will be removed by Owner before start of the Work.
  2. If suspected hazardous materials are encountered, do not disturb; immediately notify Owner Representative. Hazardous materials will be removed by Owner under a separate contract.
- D. 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.

##### 3.2 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. Dispose of demolished items and materials promptly.
- B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.



3.3 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- A. Bituminous Concrete: Demolish in small sections. Using power-driven saw, cut concrete to a depth of at least **3/4 inch** at junctures with construction to remain. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete. Neatly trim openings to dimensions indicated.

3.4 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction.
  - 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.
- B. Burning: Do not burn demolished materials.

END OF SECTION 024119



## SECTION 116800 - PLAY FIELD EQUIPMENT AND STRUCTURES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes playground equipment as follows:
  - 1. Freestanding playground equipment.

#### 1.3 DEFINITIONS

- A. Definitions in ASTM F 1487 apply to Work of this Section.
- B. IPEMA: International Play Equipment Manufacturers Association.

#### 1.4 PRECONSTRUCTION MEETINGS

- A. Preconstruction Conference: Conduct conference 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.
- D. Samples for Verification: For each type of exposed finish on the following products:
  - 1. Include Samples of accessories to verify color and finish selection.



2. Posts and Rails: Minimum 6 inches long.
3. Platforms: Minimum 6 inches square.
4. Molded Plastic: Minimum 3 inches square.

#### 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.
  2. Wood-Preservative Treatment: Include certification by treating plant that states type of preservative solution and pressure process used, net amount of preservative retained, and compliance with applicable standards.

#### 1.7 CLOSEOUT SUBMITTALS

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

#### 1.8 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: Two varies from date of Substantial Completion.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- A. Playground equipment and components shall have the IPEMA Certification Seal.
- B. The following playground equipment and components shall have the IPEMA Certification Seal:
  1. Playworld Timber Stacks Eugene - #ZZXX1320, modified for use by age group 2-5

#### 2.2 PERFORMANCE REQUIREMENTS

- A. Safety Standard: Provide playground equipment according to ASTM F 1487 .



## 2.3 MATERIALS

- A. Hardware: Manufacturer's standard; commercial-quality; corrosion-resistant; hot-dip galvanized steel and iron, stainless steel, or aluminum; of a vandal-resistant design.
- B. Fasteners: Manufacturer's standard; corrosion-resistant; hot-dip galvanized or zinc-plated steel and iron, or stainless steel; permanently capped; and theft resistant.

## 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.
  - 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 soil.
- C. Post Set with Concrete Footing: Comply with Section 033000 "Cast-in-Place Concrete" **ACI 301** dry-packaged concrete-mix manufacturer's written instructions 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.

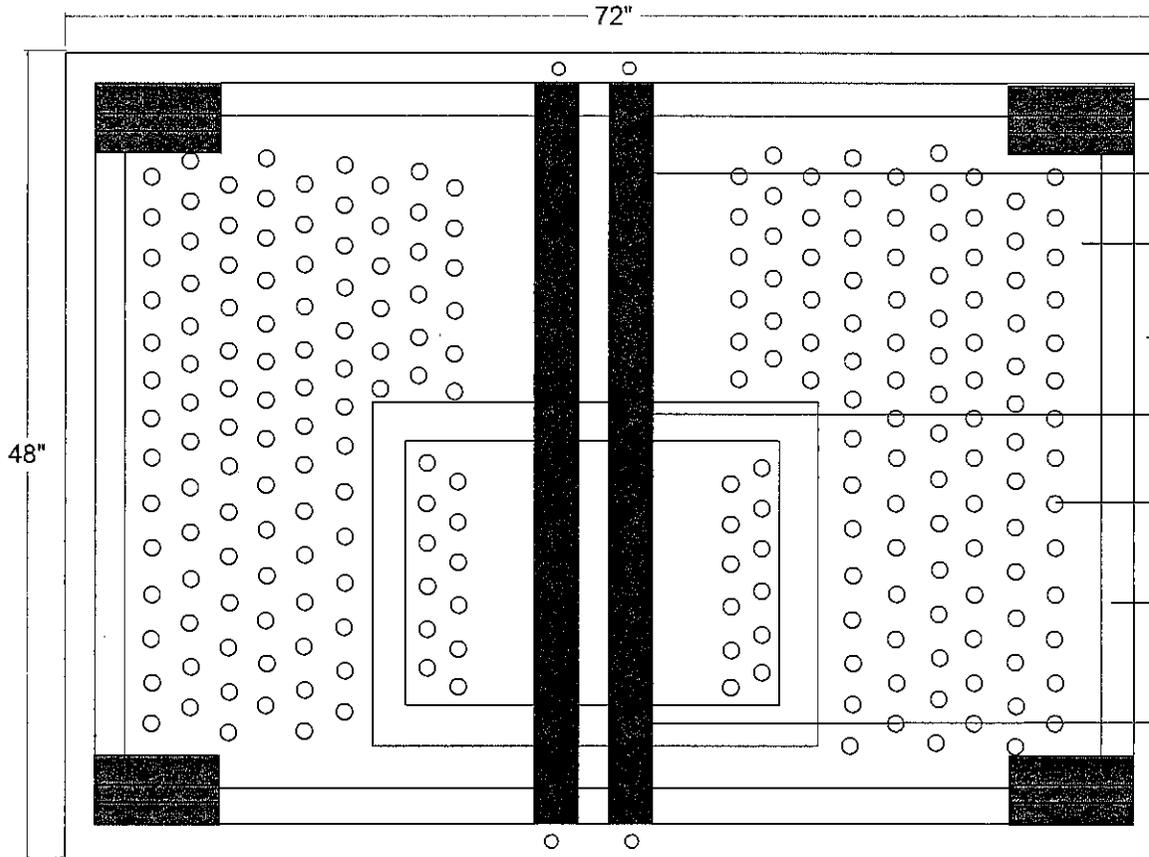


2. Embedded Items: Follow equipment manufacturer's written instructions and drawings to ensure correct installation of anchorages for equipment.
3. Finishing Footings: Smooth top, and shape to shed water.

END OF SECTION 116800

# 48" x 72" XL7042 Retrofit for Gooseneck poles

Made with Quiet Technology



Stainless steel fasteners at all points

4" x 9" solid aluminum corner blocks

1" x 2" solid aluminum struts spaced for the existing gooseneck hole pattern

1/2" thick abrasive resistant polycarbonate backboard surface

Solid aluminum extruded frame

Attachment through holes set according to the existing spacing

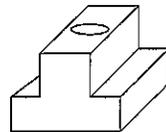
1/2" through holes

color striping available please verify color

5" x 5" hole pattern

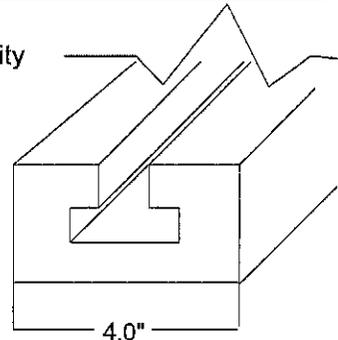
Comes with pole clamp and pair of diagonal supports

Be sure to inspect the existing pole condition for safety and security prior to placing an order. This is the buyers responsibility !



Typical Stainless Steel "T" Nut

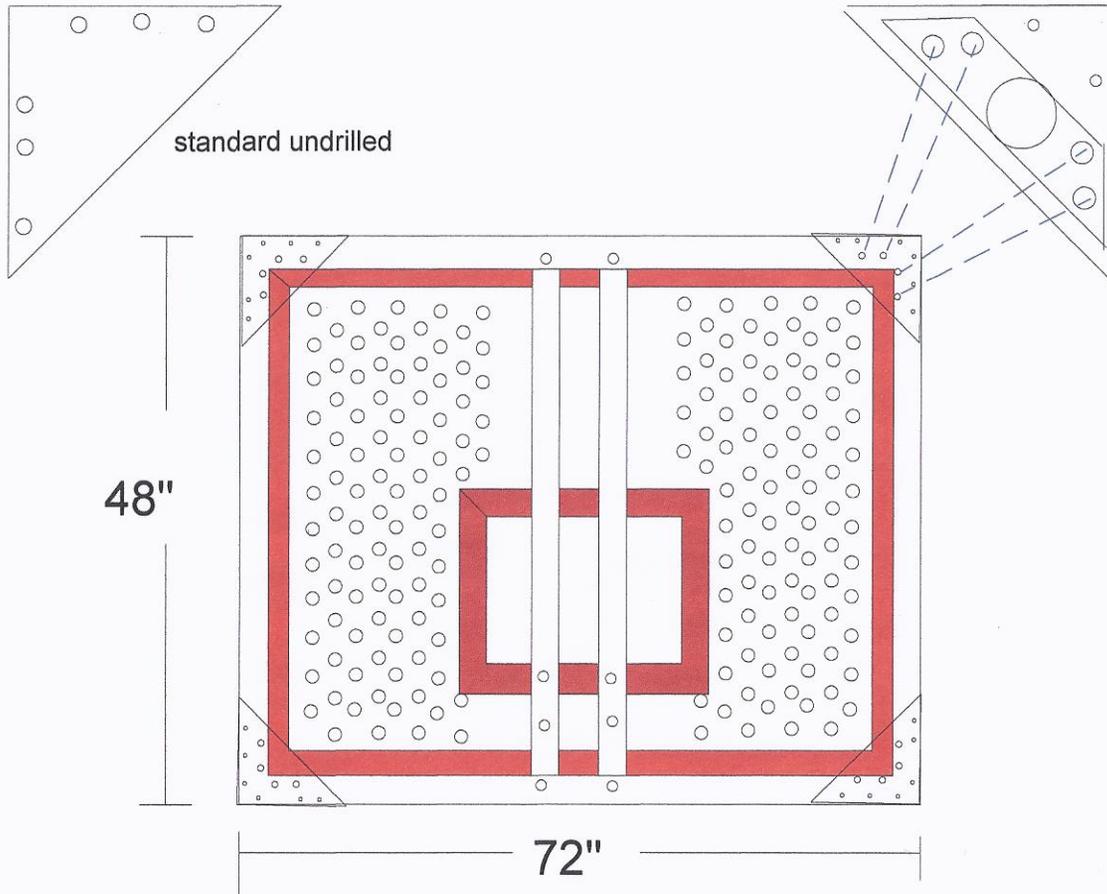
Used in the top corners



Typical Corner Block Solid Aluminum Block

<b>True Bounce Inc</b>	XL7042 perforated backboard gooseneck retro fit	
	Drawn By: Wayne Newton	
56 Conduit Street New Bedford, MA Ph 866-873-3715 Fax 877-841-3715	Drawing date: 6/12/2004	Scale: N/A
	Revised: 11/04/09	Revised By: WN

# NYC Four Corner Mount Dual Pole System



5" x 5" rim bolt pattern standard

The attachment holes may vary

Corner plates come undrilled

Please measure prior to ordering

If no measurements are given

Plates will not be drilled

10-1/4" x 10-1/4" x 1/4" Aluminum plate

4-7/16" holes for mounting the diagonal plates  
at each corner typical at every corner.

Solid aluminum extruded frame

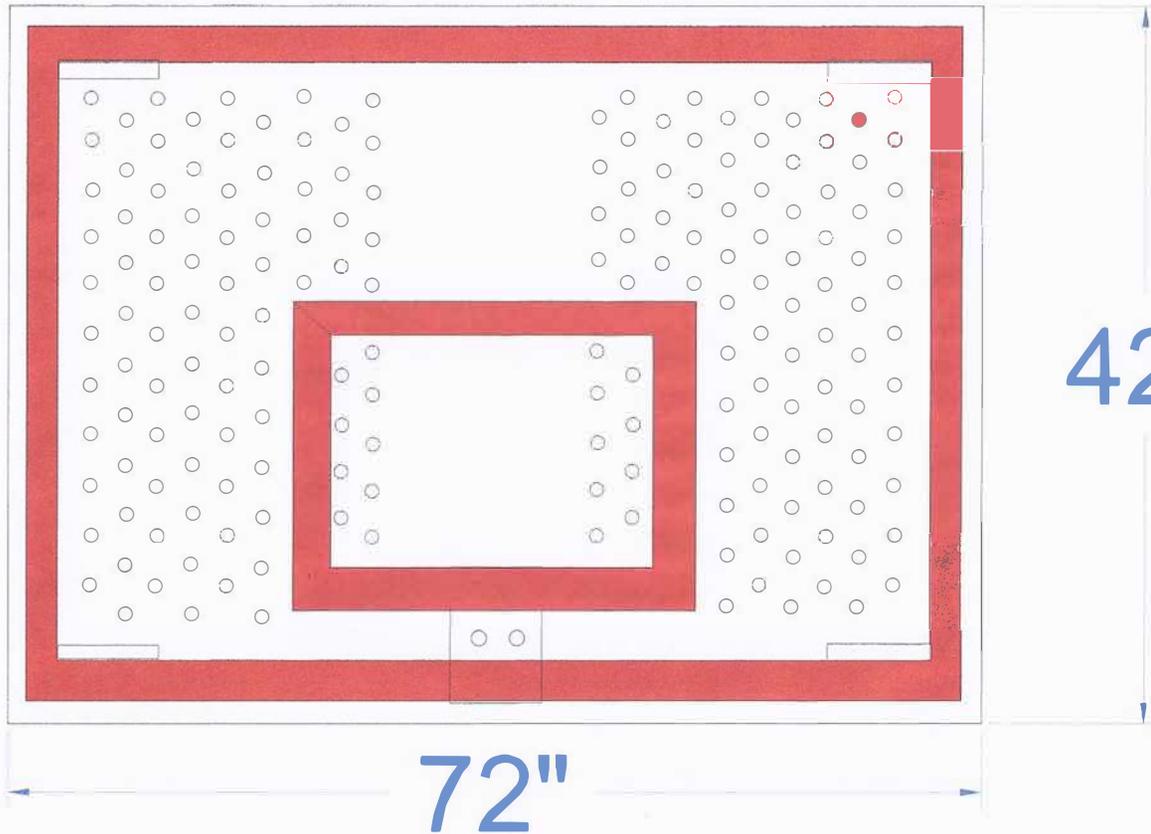
Red striping on perimeter and shot box

Each corner is attached with 8- 1/4 20  
bolts with nylon locking nuts. All hardware is  
stainless steel.

2 1"x2" solid aluminum struts fasten both top and bottom  
1/2" holes through the surface of the backboard

Scale: <b>N/A</b>	Style # NYC Dual Pole System	Date: 2/27/06
 <b>TrueBounce Inc.</b> <small>Performance Matters</small> <small>51 Cowell Street New Bedford, MA 02745 Tel/Fax Office 855-872-3715 Tel/Fax Fax 877-845-3715</small>	XL7048 NY Kit Drawn by: <b>Wayne Newton</b>	Revisions WN 8/12/08 5/4/11
	<small>Confidential and proprietary The information on this drawing is confidential and proprietary and shall not be copied or otherwise used in any way without the consent of TrueBounce</small>	

# XL7042



4" x 9" slotted solid aluminum corner blocks

1/2" thick abrasive resistant polycarbonate sheet with typical TrueBounce hole pattern

1/2" through holes

Mounts to PA555, PA554, PA444 and PA665 PA666 TrueBounce pole systems

Dual safety bolt holes through drilled to attach the backboard to the pole for easy removal of the rim without the worry of the backboard becoming detached from the pole

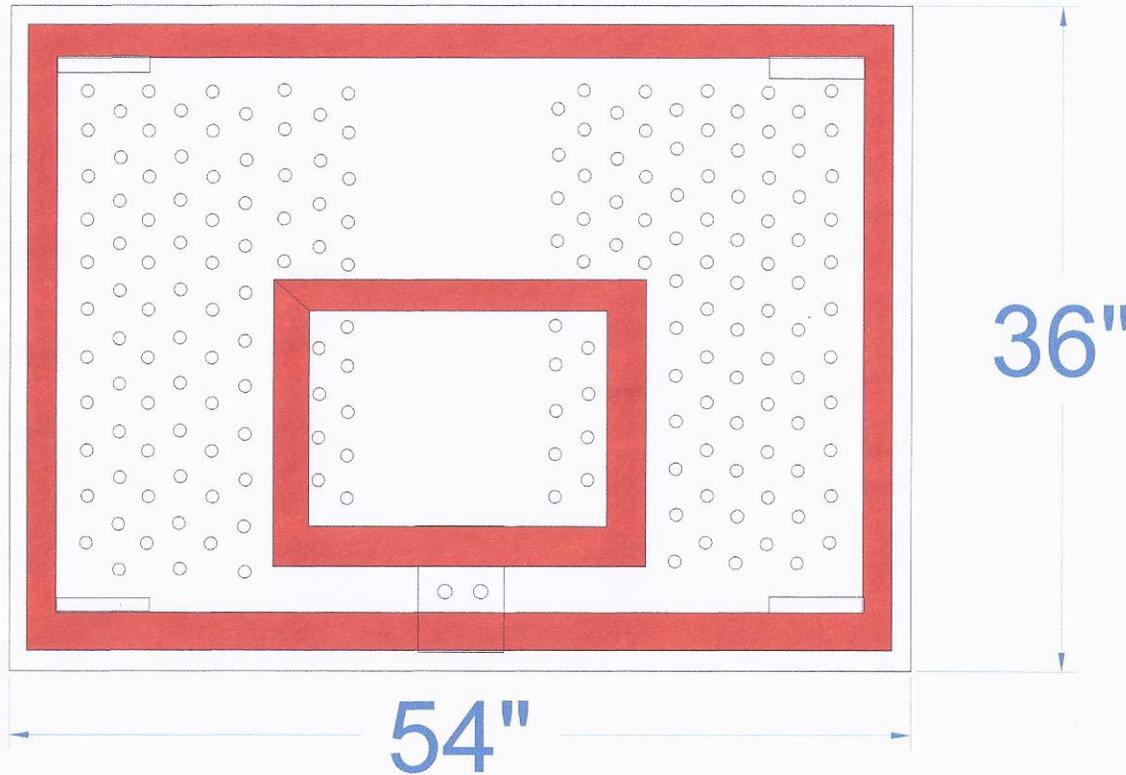
1-1/2" x 6" x 7-3/4" solid aluminum rim support block with safety holes  
Stainless steel fasteners at all points

Striping colored to the end users chosen colors

Scale:	Style #	Date:
N/A	XL7042	2/27/06
 <b>TrueBounce Inc.</b> <i>Performance Matters</i>	42" x 72" Backboard	Revisions
	Drawn by: Wayne Newton	WN 8/12/08
<small>56 Conduit Street          New Bedford, MA 02745          Toll Free Office 866-873-3715          Toll Free Fax 877-841-3715</small>	<small>Confidential and proprietary          This information on this drawing          is confidential and proprietary and          can not be copied or altered in any          way without the consent of TrueBounce</small>	



# XL7036



4" x 6" slotted solid aluminum corner blocks

1/2" thick abrasive resistant polycarbonate sheet with typical TrueBounce hole pattern

1/2" through holes

Mounts to PA555, PA554, PA444 and PA665 PA666 TrueBounce pole systems

Dual safety bolt holes through drilled to attach the backboard to the pole for easy removal of the rim without the worry of the backboard becoming detached from the pole

1-1/2" x 6" x 7-3/4" solid aluminum rim support block with safety holes

Stainless steel fasteners at all points

Striping colored to the end users chosen colors

Scale:	N/A	Style #	XL7036	Date:	2/27/06
 <b>TrueBounce Inc.</b> <i>Performance Matters</i>			36" x 54" Backboard		Revisions
			Drawn by: Wayne Newton		WN 8/12/08
58 Conduit Street New Bedford, MA 02745 Toll Free Office 888-873-3715 Toll Free Fax 877-841-3715			Confidential and proprietary The information on this drawing is confidential and proprietary and can not be copied or altered in any way without the consent of TrueBounce		

# TrueBounce Basketball Backboard Bid Specification Examples:

## BASKETBALL SYSTEMS

A: Basketball systems shall be TrueBounce Backboards [with padding], Goal and Support Post as manufactured by TrueBounce, Inc., 56 Conduit Street, New Bedford, MA 02745, phone (509) 999-3020, website: [www.truebounce.com](http://www.truebounce.com), email: [info@truebounce.com](mailto:info@truebounce.com), a Truebounce Dealer: or approved equal.

1. SUPPORT POSTS: TrueBounce Model \_\_\_\_\_ (PA555, PA666, PG454, PG596)

Model PA555 – 5"x5" - 3/8" (thick), powder-coated steel pole with 5' extension. Ring height at 10'.

- a. Form rolled steel hat clamp: fully welded steel hat clamp to extension arm and attached with six (6) 2 ½" x 2 ½" 13 stainless steel bolts with flat washers each side and nylon inserted stainless steel nuts.
- b. Height: Install top of support post to a minimum of 10' 4" above finish grade.
- c. Color: Black
- d. Install as per manufacturer instructions.
- e. [Optional] Post pad – 6' x 2" thick post pad, \_\_\_\_\_ [choose color]. Truebounce Model PP05, or equivalent.

Model PA666 – 6"x6" – 3/8" (thick), powder coated steel pole with 6' extension. Ring height at 10'.

- a. Form rolled steel hat clamps: fully welded steel hat clamps to extension arm and attached with six (6) 2 ½" x 2 ½" 13 stainless steel bolts with flat washers each side and nylon inserted stainless steel nuts.
- b. Height: Install top of support post to a minimum of 10' 4" above finish grade.
- c. Color: Black
- d. Install as per manufacturer instructions.
- e. [Optional] Post pad – 6' x 2" thick post pad, \_\_\_\_\_ [choose color]. Truebounce Model PP06, or equivalent.

Model PG454 – 4 ½" OD galvanized steel gooseneck post with 4' extension. Ring height at 10'.  
[Not recommended for XL7048]

- a. Post shall be 4 ½" O.D. schedule 20 (0.18") wall galvanized tube.
- b. The mounting plate is used as a direct goal attachment for the backboard.
- c. Two braces extending from the upper mounting points of the backboard to the gooseneck extension provided to add rigidity to the system.
- d. Install as per manufacturer's instruction
- e. [Optional] Post pad – 6' x 2" thick post pad, color [choose color]. Truebounce Model PP0456; or equivalent.

## TrueBounce Basketball Backboard Bid Specification Examples:

Model PG596 – 5 9/16" OD galvanized steel gooseneck post with 6' extension. Ring height at 10'.

- a. post shall be 5 9/16" O.D. schedule 40 (0.26") wall galvanized tube.
- b. The mounting plate is used as a direct goal attachment for the backboard.
- c. Two braces extending from the upper mounting points of the backboard to the gooseneck extension provided to add rigidity to the system.
- d. Install as per manufacturer's instruction
- e. [Optional] Post pad – 6' x 2" thick post pad, color [choose color]. Truebounce Model PP056R; or equivalent.



## TrueBounce Basketball Backboard Bid Specification Examples:

### B. BASKETBALL BACKBOARDS

1. Basketball backboards shall be TrueBounce model XL70XX (XL7036, XL7042, XL7048): clear, ½" perforated polycarbonate backboard; or approved equivalent. Install per manufacturer's specifications:

- a. 4" x 9" x 1 ½" "T" slotted solid aluminum corner blocks,
- b. ½" thick, abrasion-resistant, UV protected, polycarbonate with TrueBounce hole pattern,
- c. Dual safety bolt holes through-drilled to attach backboard to pole,
- d. 1 ½" x 6" x 7 ¾" solid aluminum rim block with safety holes,
- e. Stainless steel fasteners at all points,
- f. Color for backboard shot box; \_\_\_\_\_ [choose color],
- g. Color for backboard perimeter; \_\_\_\_\_ [choose color],
- h. Installation as per manufacturer's instructions.
- i. [Optional] To include high density, low-profile backboard pad, \_\_\_\_\_ [color?], Truebounce Model \_\_\_\_\_ [BPLP72 or BPLP54],

### C. BASKETBALL RIM/GOAL

1. Basketball rim/goal shall be TrueBounce model RBXXXX (RB1000, RB120, RB240, RB8550): Install per manufacturer's specifications.

[Options:

RB1000 - Heavy duty **adjustable breakaway** goal with nylon net

RB120 - Standard **single rim** goal

RB240 - Heavy duty **double ring** fixed goal with nylon net

RB8850 - ENDURANCE SLAM FRONT MOUNT GOAL (w/ Net)

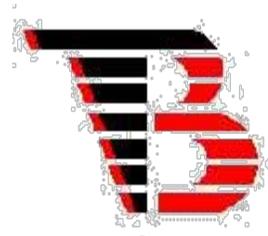
Many more options available. Call for Model #'s.]

**Polycarbonate Backboard  
Certificate of Warranty**

Date:     /     /

Sold To:

--	--



**TrueBounce**®

**TrueBounce Inc.**  
56 Conduit Street  
New Bedford, MA 02745  
Tel: 508-999-3020  
Fax: 877-841-3715

Customer \_\_\_\_\_

Order Number: \_\_\_\_\_

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

**In order for this warranty to take effect the customer must fill out and send back to TrueBounce!**

TrueBounce provides a limited lifetime warranty applicable to the shatterproof nature of the playing surface of the TrueBounce Backboard. TrueBounce guarantees that the polycarbonate playing surface shall not shatter. In the event the TrueBounce Backboard is subject to a manufacturer's defect in material or workmanship under normal use TrueBounce will repair or replace the damaged part at no cost to the customer, at the sole discretion of TrueBounce. In order for this warranty to apply customer must present the original sales invoice. **This warranty is non-transferable from the initial end-user installation.**

Misuse, abuse, vandalism, abnormal wear and tear or improper installation will not be covered by this warranty. Damage to the system due to extreme weather conditions such as tornados, hurricanes, damaging hail, flood and any other conditions caused by an act of God or nature will not be covered.

The remedies set forth in this Warranty agreement are exclusive to and the liability of TrueBounce with respect to any contract of sale or anything done in connection therewith whether in contract or in tort under any warranty or otherwise shall not be expressly therein. Any damage caused by the improper use, operation beyond the backboards capacity, substitution of parts or equipment not provided by TrueBounce, improper packaging or storage, improper installation written or expressed, transit or repair by one other than TrueBounce will not be covered and shall deem this Warranty void.

**SECTION 11 68 33  
ATHLETIC FIELD EQUIPMENT**

**PART 1 GENERAL**

1.1 SUMMARY

- A. Provide all equipment, materials, and do all work necessary to furnish and install the Barrier Netting System, as indicated on the drawings and as specified herein.

1.2 RELATED WORK

- A. Examine Contract Documents for requirements that affect work of this section. Other specification sections that directly relate to work of this Section include, but are not limited to:
1. Section 02200 - Earthwork; Excavation and Backfill and establishment of subgrade elevations.
  2. Section 02511 - Asphalt Concrete Pavement
  3. Section 03300 - Cast-in-Place Concrete; Concrete foundations

1.3 REFERENCES

- A. Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.
1. Manufacturers Data and Recommended Installation Requirements.

1.4 SUBMITTALS

- A. Shop Drawings
1. Provide drawings of manufacturers recommended installation and foundation requirements prior to actual field installation work for Architect or Owner's Representative review and approval.
  2. Structural design of barrier netting system, including pole sizing and foundation design, must be signed and sealed by a qualified professional engineer licensed in the State of Rhode Island.

1.5 QUALITY ASSURANCE

- A. Manufacturers warranties shall pass to the Owner and certification made that the product materials meet all applicable grade trademarks or conform to industry standards and inspection requirements.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Materials delivered to the site shall be examined for concealed damage or defects in shipping. Any defects shall be noted and reported to the Owner's Representative.

- B. Replacements, if necessary, shall be immediately re-ordered, so as to minimize any conflict with the construction schedule.
- C. Sound materials shall be stored above the ground under protective cover or indoors so as to provide proper protection.

## **PART 2 PRODUCTS**

### **2.1 MANUFACTURERS**

- A. Manufacturers and product selections named are provided to establish the minimum standard.

- 1. In-Line Lifting & Tensioning Barrier Netting System – As manufactured by:

Beacon Athletics  
8233 Forsythia Street, Ste. 120  
Middleton, WI 53562  
Toll Free (800) 747-5985  
Fax (608) 836-0724  
[www.beaconathletics.com](http://www.beaconathletics.com)

### **2.2 BACK-UP NETTING SYSTEM EQUIPMENT**

- A. Model #BNB In-Line Lifting & Tensioning Barrier Netting System:

- 1. Description/Size: Length of Barrier Netting Run = 150 feet . Top of Netting = 40 feet above field grade, Bottom of Netting =2 FT above field grade, Maximum Pole Spans not to exceed 40 feet. Netting system to be raised/lowered and tensioned by means of lifting halyards at each pole of netting run.
  - 2. Poles: Round steel sections (ASTM A500B or C) with welded cap plate, straight poles, direct embedment into foundation (optional base plate mounted installation available), black painted finish (other standard colors available), provide vertical cable attached to poles where netting has vertical edge or vertical seam, all connection points for netting system to be welded on the poles prior to painting.
  - 3. Netting: Netting shall be #24 twisted knotted black mesh (280-lb break strength), UV stabilized, sewn hems with grommets at 1'-6" max. along top and vertical edges, 1/4" sewn rope binding along bottom edge, fence cap recommended at top of any fence located near netting line to avoid netting snag/wear.
  - 4. Hardware: Size all hardware to meet design loads imposed on netting system. Snap hook clips to be zinc plated steel, quick links to be stainless steel. Turnbuckles, thimbles, wire rope clamps to be hot-dip galvanized. Lifting line anchors to be determined per manufacturer design requirements and welded to poles prior to painting. Halyard ropes at poles to be braided construction with composite blocks and adjustment winches per manufacturer design requirements. Minimum 3/16" diameter 7x19 galvanized uncoated steel wire cable along top and bottom edges of netting system for net attachment and to maintain net shape and reduce sag. 3/16"

diameter 7x19 galvanized coated steel wire rope for vertical attachment of netting – cable diameter to be determined by manufacturer design requirements.

### **PART 3 EXECUTION**

#### **3.1 INSPECTION**

- A. Examine the areas and conditions where equipment and systems are to be installed and notify the contractor of conditions detrimental to the proper and timely installation and completion of the work.
- B. Do not proceed with the work until unsatisfactory conditions have been corrected by the contractor in a manner acceptable and to the satisfaction of the Architect/Engineer or Owner's Representative.

#### **3.2 INSTALLATION**

- A. All barrier netting equipment shall be installed as indicated on approved submittals as recommended and in strict accordance with manufacturer's written directions and as indicated on the drawings and specified herein.
- B. All concrete footings for barrier netting system shall be installed as indicated on the drawings and in accordance with Section 03300, Cast-in-Place Concrete.
- C. All poles and/or sleeves required for barrier netting system installation shall be set plumb and true to line and grade in concrete as indicated on the drawings and per manufacturer's recommendation.
- D. Provide operating and maintenance instructions to Owner's Representative for the proper operation and care of equipment.

#### **3.3 CLEANING**

- A. Upon completion of work in any given area, remove all trash and debris from the work area and leave in clean condition. All pipe, concrete, fabric and miscellaneous parts shall be removed from site.
- B. Dispose of excessive material to certified landfill.
- C. Grade to within 1" of finish grade after work is completed.

**END OF SECTION**



## SECTION 311000 - SITE CLEARING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Protecting existing vegetation to remain.
  - 2. Removing existing vegetation.
  - 3. Stripping and stockpiling topsoil.
  - 4. Stripping and stockpiling rock.
  - 5. Removing above- and below-grade site improvements.
  - 6. Disconnecting, capping or sealing, and abandoning site utilities in place.

#### 1.3 DEFINITIONS

- A. Subsoil: Soil beneath the level of subgrade; soil beneath the topsoil layers of a naturally occurring soil profile, typified by less than 1 percent organic matter and few soil organisms.
- B. Surface Soil: Soil that is present at the top layer of the existing soil profile. In undisturbed areas, surface soil is typically called "topsoil," but in disturbed areas such as urban environments, the surface soil can be subsoil.
- C. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in-place surface soil; the zone where plant roots grow.
- D. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction and indicated on Drawings.
- E. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

#### 1.4 PRE CONSTRUCTION MEETINGS

- A. Pre construction meeting: Conduct meeting at Project site .



1.5 MATERIAL OWNERSHIP

- A. Except for materials indicated to be stockpiled or otherwise remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.6 QUALITY ASSURANCE

1.7 FIELD CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
  - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
  - 2. Provide alternate routes around closed or obstructed trafficways if required by Owner or authorities having jurisdiction.
- B. Utility Locator Service: Notify Dig Safe System for area where Project is located before site clearing.
- C. Tree- and Plant-Protection Zones: Protect according to requirements in Section 015639 "Temporary Tree and Plant Protection."
- D. Soil Stripping, Handling, and Stockpiling: Perform only when the soil is dry or slightly moist.

PART 2 - PRODUCTS

2.1 MATERIALS

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.
- B. Verify that trees, shrubs, and other vegetation to remain or to be relocated have been flagged and that protection zones have been identified and enclosed according to requirements in Section 015639 "Temporary Tree and Plant Protection."
- C. Protect existing site improvements to remain from damage during construction.
  - 1. Restore damaged improvements to their original condition, as acceptable to Owner.



### 3.2 TREE AND PLANT PROTECTION

- A. Protect trees and plants remaining on-site according to requirements in Section 015639 "Temporary Tree and Plant Protection."
- B. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations according to requirements in Section 015639 "Temporary Tree and Plant Protection."

### 3.3 EXISTING UTILITIES

- A. Locate, identify, disconnect, and seal or cap utilities indicated to be removed or abandoned in place.
  - 1. Owner will arrange to shut off indicated utilities when requested by Contractor.
- B. Interrupting Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others, unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
  - 1. Do not proceed with utility interruptions without Owner's Representative's written permission.

### 3.4 TOPSOIL STRIPPING

- A. Remove sod and grass before stripping topsoil.
- B. Strip topsoil to depth of **6 inches** in a manner to prevent intermingling with underlying subsoil or other waste materials.
  - 1. Remove subsoil and nonsoil materials from topsoil, including clay lumps, gravel, and other objects larger than **2 inches** in diameter; trash, debris, weeds, roots, and other waste materials.
- C. Stockpile topsoil away from edge of excavations without intermixing with subsoil or other materials. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust and erosion by water.
  - 1. Limit height of topsoil stockpiles to **72 inches**.
  - 2. Do not stockpile topsoil within protection zones.
  - 3. Stockpile surplus topsoil to allow for respreading deeper topsoil.

### 3.5 STOCKPILING ROCK

- A. Remove from construction area naturally formed rocks that measure more than **1 foot** 2 feet across in least dimension. Do not include excavated or crushed rock.



1. Separate or wash off non-rock materials from rocks, including soil, clay lumps, gravel, and other objects larger than **2 inches** in diameter; trash, debris, weeds, roots, and other waste materials.
- B. Stockpile rock as per direction of Architect without intermixing with other materials. Cover to prevent windblown debris from accumulating among rocks.
  1. Limit height of rock stockpiles to 4 ft .
  2. Do not stockpile rock within protection zones.
  3. Dispose of surplus rock. Surplus rock is that which exceeds quantity indicated to be stockpiled or reused.

### 3.6 SITE IMPROVEMENTS

- A. Remove existing above- and below-grade improvements as indicated and necessary to facilitate new construction.
- B. Remove slabs, paving, curbs, gutters, and aggregate base as indicated.
  1. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut along line of existing pavement to remain before removing adjacent existing pavement. Saw-cut faces vertically.

### 3.7 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.

END OF SECTION 311000



## SECTION 312000 - EARTH MOVING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Excavating and filling for rough grading the Site.

#### 1.3 UNIT PRICES

- A. Work of this Section is affected by unit prices for earth moving specified in Section 012200 "Unit Prices."
- B. Quantity allowances for earth moving are included in Section 012100 "Allowances."

#### 1.4 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 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 300 in length.
3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Owner's Representative. Unauthorized excavation, as well as remedial work directed by Owner's Representative, shall be without additional compensation.

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

H. 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.

I. 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.

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

#### 1.5 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. Field quality control.

#### 1.6 ACTION SUBMITTALS

#### 1.7 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 "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 Section 010000 General Requirements in Section 311000 "Site Clearing" 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.
- B. If additional common borrow is needed to promote the revised sub-grade on the infield, the City will provide the fill. The fill is located at the North Burial Ground at the intersection of Branch Avenue and North Main Street in Providence. The contractor will be required to load and haul the material from North Burial Ground to the site and the cost shall be included in the base bid. Test results for the material (VOC's etc) will be provided - "the material has been classified as clean fill"
- C. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.
- D. 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.
- E. 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.
- F. Sand: ASTM C33/C33M; fine aggregate.



### PART 3 - EXECUTION

#### 3.1 PREPARATION

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

#### 3.2 EXPLOSIVES

- A. Explosives: Do not use explosives.

#### 3.3 EXCAVATION, GENERAL

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

#### 3.4 EXCAVATION FOR WALKS AND PAVEMENTS

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

#### 3.5 SUBGRADE INSPECTION

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



- B. If 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 Architect, without additional compensation.

### 3.6 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.

### 3.7 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.

### 3.8 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 walks and pavements, use satisfactory soil material.
- C. Place soil fill on subgrades free of mud, frost, snow, or ice.

### 3.9 GRADING

- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
  - 1. Provide a smooth transition between adjacent existing grades and new grades.
  - 2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.



- B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to elevations required to achieve indicated finish elevations, within the following subgrade tolerances:
  - 1. Turf or Unpaved Areas: Plus or minus **1 inch** .
  - 2. Walks: Plus or minus **1 inch** .
  - 3. Pavements: Plus or minus .

### 3.10 SUBBASE AND BASE COURSES UNDER PAVEMENTS AND WALKS

- A. Place subbase course and base course on subgrades free of mud, frost, snow, or ice.
- B. On prepared subgrade, place subbase course and base course under pavements and walks as follows:
  - 1. Place base course material over subbase course under hot-mix asphalt pavement.
  - 2. Shape subbase course and base course to required crown elevations and cross-slope grades.
  - 3. Place subbase course and base course **6 inches** or less in compacted thickness in a single layer.

### 3.11 PROTECTION

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

END OF SECTION 312000



## SECTION 321216 - ASPHALT PAVING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:

- 1. Hot-mix asphalt paving.
- 2. Asphalt surface treatments.

- B. Related Requirements:

- 1. Section 024119 "Selective Demolition" for demolition and removal of existing asphalt pavement.

#### 1.3 PRE CONSTRUCTION MEETINGS

- A. Pre construction meeting: Conduct meeting at Project site .

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

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.

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

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For manufacturer and testing agency.



- B. Material Certificates: For each paving material.

#### 1.6 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of of State of Rhode Island Department of Transportation Standard Specification for Road and Bridge Construction for asphalt paving work.
  - 1. Measurement and payment provisions and safety program submittals included in standard specifications do not apply to this Section.

#### 1.7 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.

### PART 2 - PRODUCTS

#### 2.1 AGGREGATES

- A. General: Use materials and gradations that have performed satisfactorily in previous installations.
- B. Coarse Aggregate: ASTM D 692/D 692M, sound; angular crushed stone, crushed gravel.
- C. Fine Aggregate: ASTM D 1073 , sharp-edged natural sand or sand prepared from stone, gravel, or combinations thereof.
  - 1. For hot-mix asphalt, limit natural sand to a maximum of 20 percent by weight of the total aggregate mass.

#### 2.2 MIXES

- A. Hot-Mix Asphalt: Dense-graded, hot-laid, hot-mix asphalt plant mixes and complying with the following requirements:
  - 1. Provide mixes with a history of satisfactory performance in geographical area where Project is located.
  - 2. Bituminous Base Course: shall conform to the requirements of Rhode Island Standard Specifications Section 402 and M. 03.01 for Base Course .
  - 3. Bituminous Surface: Shall conform to the requirements of the Rhode Island Standard Specifications Section 402 and M.03.01 for surface course Class I-1.



4. Processed Gravel Base: Gravel base shim course in accordance with State of Rhode Island Standard Specification, Subsection M01.09, meeting the gradation requirements of Table -1, Column 1, with 100% passing 3-inch Square Mesh Sieves.

### 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 Architect, and replace with compacted backfill or fill as directed.

#### 3.3 REPAIRS

- A. Crack and Joint Filling: Remove existing joint filler material from cracks or joints to a depth of **1/4 inch** .
  1. Clean cracks and joints in existing hot-mix asphalt pavement.
  2. Use emulsified-asphalt slurry to seal cracks and joints less than **1/4 inch** wide. Fill flush with surface of existing pavement and remove excess.
  3. Use hot-applied joint sealant to seal cracks and joints more than **1/4 inch** wide. Fill flush with surface of existing pavement and remove excess.

#### 3.4 SURFACE PREPARATION

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

### 3.5 PLACING HOT-MIX ASPHALT

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

### 3.6 JOINTS

- A. Construct joints to ensure a continuous bond between adjoining paving sections. Construct joints free of depressions, with same texture and smoothness as other sections of hot-mix asphalt course.
  - 1. Clean contact surfaces and apply tack coat to joints.
  - 2. Offset longitudinal joints, in successive courses, a minimum of **6 inches**.
  - 3. Offset transverse joints, in successive courses, a minimum of **24 inches**.
  - 4. Compact joints as soon as hot-mix asphalt will bear roller weight without excessive displacement.
  - 5. Compact asphalt at joints to a density within 2 percent of specified course density.

### 3.7 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 according to ASTM D 6927 , but not less than 94 percent or greater than 100 percent.
  - 2. Average Density: 92 percent of reference maximum theoretical density according to ASTM D 2041/D 2041M, but not less than 90 percent or greater than 96 percent.
- D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.
- E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.
- F. Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.
- G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.
- H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

### 3.8 INSTALLATION TOLERANCES

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

END OF SECTION 321216



## SECTION 321220.10 – BASKETBALL COURT FINISHING

### **PART 1 - GENERAL**

#### 1.1 DESCRIPTION OF WORK

- A. The Work of this Section consists affecting the finishing of basketball court surfaces, as indicated on the Contract Documents and as specified herein.
- B. The Contractor is responsible for reviewing the existing conditions of the outdoor basketball courts.
- C. The scope of work is three-fold and shall consist of 1) a thorough inspection of the existing outdoor court(s) by an authorized Sport Surfacing Contractor 2) repaving according to Section 321216 – Asphalt Paving and 3) the application of the new acrylic sealer and surface color material, including court lines.
- D. The work involved in the following specifications must be performed in a safe and workmanlike manner by a Contractor possessing suitable professional qualifications as submitted and as approved under Project Owner’s criteria as set forth herein.
- E. The Contractor and workers who will complete the designated work shall be well aquatinted with the requirements of the scope of work, be competent in their trade, and have sufficient experience to properly perform this work. Qualified supervision shall be on the job site during all working hours.

#### 1.2 RELATED DOCUMENTS

- A. Drawings and General Requirements apply to the Work of this section.
- B. The Contractor shall examine all Contract Documents and all other Sections of the Specifications for requirements therein affecting the Work specified herein.

#### 1.3 RELATED WORK UNDER OTHER SECTIONS

- A. Refer to Section 011000 – General Requirements
- B. Refer to Section 321216 – Asphalt Paving

#### 1.4 REFERENCES

- A. The following standards shall apply to the work of this Section.
  - 1. American Sports Builders Association (ASBA) Sports Courts Standards.
  - 2. American Society for Testing and Materials (ASTM).



## 1.5 SAMPLES AND SUBMITTALS

- A. Submit Contractor Qualifications as per Section 1.6 of this specification and in accordance with Section 01 10 00 – General Requirements: Submittal Procedures.
- B. Contractor shall submit all materials proposed for use in performing this work in accordance with Section 01 10 00 – General Requirements: Submittal Procedures.
- C. The acrylic products proposed for use and submitted shall include all proposed component mixing ratios.
- D. No un-approved materials will be allowed at the job-site.

## 1.6 QUALITY ASSURANCE

- A. The Contractor conducting the court finishing shall provide proof of ten (10) years of experience in evaluating and conducting court surface preservation, repairs and beautification to asphalt paved sports courts. Proof shall be provided by furnishing and submitting a written list of completed past projects and the dates of service.
- B. In addition to the requirement above, the Contractor shall provide proof of relevant project experience conducting effective and durable work by providing three (3) client references (Name, email and telephone number) for similar projects that included conducting long-term asphalt paved sports courts crack repairs and new surface finishes.
- C. The Contractor conducting the court repairs shall show proof of being a member in good standing of the American Sports Builders Association (ASBA).
- D. The Contractor is responsible for secure and proper storage of all of the products approved for use and associated with this project.
- E. Protect the surfaces of the courts to be repaired from damage until Final Acceptance by the Owner. Any damaged or defaced portion of the surface shall be repaired and/or replaced to full satisfaction of the Owner's Representative and at no additional cost to the Owner.
- F. Provide the Owner with a minimum of a three year warranty against widening of cracks for crack repair work performed.

## PART 2 - PRODUCTS

### 2.1 PRODUCT COMPATABILITY

- A. All products submitted to be utilized for conducting this work shall be manufactured to be compatible and effective in providing lasting and durable athletic court surface finishes. Products shall be as specified or as per 'Approved Equivalent' as required per Section 013300 Submittal Procedures.



2.2. COURT LAMINATING & BINDING AGENT

- A. The Laminating & Binding Agent shall be an acrylic polymer emulsion developed specifically to coat, laminate and bond court repairs and fill small voids to create a uniform court surface. The product shall be selected and mixed to work on asphalt court surfaces as part of a comprehensive athletic court patching, coating and resurfacing system.
- B. A product that meets these requirements is 'NOVABOND', as manufactured by Nova Sports USA, 8 Commercial Way, Milford, MA 01757. 1.508.473.6540. [www.novasports.com](http://www.novasports.com) or approved equivalent.

2.3. ACRYLIC RESURFACER

- A. The resurfacer product shall be purpose blended and be designed to be applied to paved surfaces prior to the application of the final acrylic color surfacing system. The resurfacer shall be designed for filling voids and smoothing and levelling surfaces. The heavy bodied 100% acrylic concentrate shall be designed to be mixed at set ratios of fine graded (50-60 mesh) sand and water at the jobsite. The sand filled mixture shall be shown to be effective at filling and sealing porous asphalt paving surfaces. Additive agents such as asphaltic or tar emulsions, vinyl, alkyd and non-acrylic resins are not permitted. The product shall be selected and mixed to work on asphalt court surfaces as part of a comprehensive athletic court patching, coating and resurfacing system.
- B. A product that meets these requirements is 'NOVASURFACE' as manufactured by Nova Sports USA, 8 Commercial Way, Milford, MA 01757. 1.508.473.6540. [www.novasports.com](http://www.novasports.com) or approved equivalent.

2.4. COLORIZED ACRYLIC SURFACER

- A. Product shall be 100% acrylic latex, full depth color material for use on all-weather asphalt paved tennis courts, basketball courts or other 'combination' exterior athletic court surfaces. The colorized acrylic surfacer shall have integral rounded aggregate that create a light, non-slip texture when dry. The surface Color shall be packaged factory mixed. The surfacer may be a concentrated emulsion and may be mixed to the approved manufacturer's ratios on site. The product shall be selected and mixed to work on asphalt court surfaces as part of a comprehensive athletic court patching, coating and resurfacing system.
- B. The courts shall be finished in two (2) colors, Navy and Orange, as selected from the manufacturer's standard color range.
- C. A product that meets these requirements is 'NOVACRYLIC COMBINATION SURFACE' as manufactured by Nova Sports USA, 8 Commercial Way, Milford, MA 01757. 1.508.473.6540. [www.novasports.com](http://www.novasports.com) or approved equivalent.

2.5. WHITE LINE PAINT



- A. Line paint shall be 100% acrylic fast drying emulsion line marking paint, highly pigmented for 1 coat coverage non-glaring, and highly reflective. Paint shall be sand textured and fast drying, without crazing, cracking or peeling. Paint shall be designated for use defining areas of play on basketball courts and/or other recreational sports requiring court markings.
- B. A product that meets these specifications is NOVATEX as manufactured by Nova Sports USA, 8 Commercial Way, Milford, MA 01757. 1.508.473.6540. [www.novasports.com](http://www.novasports.com) or approved equivalent.

## PART 3 - EXECUTION

### 3.1 COURT RESURFACING

- A. Application of new surface: Surface must be dry and temperature 50°Fahrenheit and rising. Utilizing a neoprene rubber squeegee apply the coat of resurfacer. Note all areas that have been patched shall be coated once with the acrylic re-surfacer, following all manufactures recommendations and guidelines. Once the acrylic re-surfacer applied to the patched areas has properly dried and cured, the areas should be scraped and cleaned with debris removed prior to the full court applications of acrylic coatings.
- B. Once all repairs have properly dried and cured, the entire court surface should receive one (1) application of the acrylic resurfacer prior to the application of court color.
- C. The court color surfaces shall be as follows: Court Area, Border, Three Point Area, shall be Blue in color. Key, Top of Key, and Center Court Circle shall be Orange in color.
- D. Color application shall cover the court surface entirely. Using a neoprene rubber squeegee, apply two (2) full coats of the acrylic color to each court. All acrylic resurfacer and acrylic color must be mixed per the approved manufacturer's recommendations and specifications.
- E. At every step, each acrylic material product applied must be allowed to fully cure, and completely dry. Surfaces shall be gently cleaned as per acrylic surfacing material manufacturer's recommendations. Court surfaces shall be blown clean and all debris removed prior to the application of any successive application.

### 3.2 COURT LINE MARKINGS

- A. Refer to the court layout plans for court painted line-work locations and dimensions.
- B. Upon completion and with acceptance of the court surface from the Owner's Representative, the Contractor shall lay out court lines for basketball. Lay out the lines in chalk, defining the edges with masking tape.
- C. The playing lines shall 2" wide, and shall be painted white with a brush.
- D. The playing lines shall painted utilizing white line paint. Application of this product should be in accordance with the manufacturer's specifications.



- E. Allow to dry. Protect work while setting up. When dry remove all tape. Lines shall appear sharp and crisp, cleanly defining colorized areas.

### 3.3 COMPLETION OF THE WORK

- A. The Contractor is responsible for protecting all finished work from damage until Final Acceptance. Remove or otherwise secure all paints, sealers and surfacing agents at the close of site operations each day.
- B. Protect the surrounding environment adjacent to the courts from spills, drips and overspray. The Contractor is responsible for any damage or discoloration of adjacent surfaces.
- C. Upon completion of the crack and related surface repairs, the Contractor shall review the court surfaces for imperfections or flaws in the surface. The Contractor shall note any areas requiring repair and/or re-work and shall identify any issues discovered.
- D. Upon completion of inspection, the Contractor shall submit to the Owner's Representative a request in writing for a walk-thru site inspection for Acceptance of the Court Repairs to the existing Basketball Courts. The request shall include identification of any known issues found and shall include a description of the proposed remedy.
- E. The Contractor shall conduct the walk-thru with the Owner's Representative. Locations of necessary repairs and the approach to conducting the necessary repairs if so required shall be agreed at the time of the walk-thru.
- F. No additional payment will be made by the Owner to affect any repair work.
- G. Upon final review by the Owner's Representative and issuance of a formal Acceptance of the Court Repairs, the Contractor shall commence with the resurfacing, color finishing and painting of the line striping.
- H. At the completion of all work operations the Contractor shall provide a three (3) year materials and labor warrantee for the work performed.
- I. At the completion of all work operations the Contractor shall remove all containers, surplus debris, materials and temporary barriers protecting the work on the courts. The portions of the site occupied by the courts shall be left in a clean and orderly condition

END OF SECTION



## 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."
- C. EWF: Engineered wood fiber.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples for Initial Selection: For each type of exposed finish.
- C. 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 and testing agency.
- B. Material Certificates: For each type of loose-fill surfacing.



## 1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

## 1.7 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: 6 feet.
  - 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. Hard-Surface Substrates: Verify that substrates are satisfactory for unitary, protective surfacing installation and that substrate surfaces are dry, cured, and uniformly level within recommended tolerances according to protective surfacing manufacturer's written requirements for cross-section profile.
- C. 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.
- B. Hard-Surface Substrates: Clean surface free of laitance, efflorescence, curing compounds, and other contaminants incompatible with protective surfacing.
  1. Repair: Fill holes and depressions in unsatisfactory surfaces with leveling and patching material.
  2. Treatment: Mechanically abrade or otherwise prepare concrete substrates according to protective surfacing manufacturer's written instructions to achieve adequate roughness.

### 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.
- E. Finish Grading: Hand rake to a uniformly smooth finished surface and to required elevations.

END OF SECTION 321816.13



## SECTION 321823.10 - INFIELD SKIN SURFACE

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This section includes the material and labor requirements for construction of a complete infield skin surface using the following material:
  - 1. DuraEdge Classic Infield Mix
- B. Related Sections:
  - 1. Site Preparation
  - 2. Earthwork

#### 1.2 SUBMITTALS

- A. Product Data: For the product specified, submit a 5-pound sample along with a private lab test result indicating the particle size analysis of the material specified. All tests shall be performed in accordance with ASTM F-1632.
- B. Approved Testing Lab
  - 1. Turf & Soil Diagnostics: 35 King Street, Trumansburg, NY 14886. (607) 387-5694

#### 1.3 PROJECT/SITE CONDITIONS

- A. All site work and earthwork shall be performed in accordance with the preceding sections. Sub-base material shall compact to 90 percent. If conditions do not warrant such compaction then an imported select granular fill shall be installed. Furthermore, the compacted sub-grade shall be installed in accordance with the final slope and shall mirror finish grade in order to ensure an even depth of material once placement has occurred.
- B. Under no circumstances are perforated pipe under drains necessary or recommended for use under any infield skin material. Geotextile fabric is not recommended between the compacted sub-base and the infield skin material.
- C. In certain instances, and where warranted, a survey of the sub-grade elevations shall occur prior to placement of the infield skin material.



#### 1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Installers of materials specified shall have, at minimum, five successful installations of similar projects and materials. Installers shall be in possession of and demonstrate knowledge of the use of laser guided finishing equipment.
- B. Material: If quality control samples are specified, they shall be completed at a rate of one per 250 tons of material delivered to the jobsite. All tests shall be conducted by the lab specified in Section 1.2 (B). All testing will be compared to and be in accordance with the material specifications provided in Section 2.2.

### PART 2 - MATERIALS

#### 2.1 MANUFACTURER

- A. DuraEdge Classic Infield Mix is produced in various locations throughout the United States of America by and at the direction of the following manufacturer:
  - 1. DuraEdge Products, Inc. 149 South Broad Street, Grove City, PA 16127. Phone: (866) 867-0052, Fax: (724) 264-4174, Email: [info@duraedge.com](mailto:info@duraedge.com), Website: [www.duraedge.com](http://www.duraedge.com).

#### 2.2 MATERIALS

- A. DuraEdge Classic Infield Mix is an engineered soil product which is mechanically mixed offsite in a controlled environment using a pugmill-type mixer. This process ensures thorough mixing of the sand and clay components to exact specifications.
- B. Performance Specification
  - 1. Infield mix shall be clean, dry clay mixed with washed mason-type sand resulting in a weed-free mixture that is reddish brown in color having a yield of 1.35 tons per cubic yard when placed loose or 1.5 tons per cubic yard when compacted 85% - 90% on a Standard Proctor Test (ASTM D 689-07). The material possesses the following particle size analysis:
    - a. Total sand content shall be 70-75 percent.
    - b. The combined amount of sand retained on the medium, coarse and very coarse sieves shall be greater than or equal to 50 percent.
    - c. The combined amount of silt and clay shall be 25-30 percent.
    - d. The ratio of silt divided by clay, otherwise known as the SCR, shall be 0.5 – 1.0.
    - e. No particles greater than 3 millimeters.
    - f. Equal to or less than 5 percent of particles shall be retained on the 2 millimeter.
  - 2. Materials meeting this specification would be DuraEdge Classic Infield Mix as manufactured by DuraEdge Products, Inc., Grove City, PA, (866) 867-0052, or an approved equal.
- C. Amendments



1. Certain amendments are approved for use with DuraEdge Classic Infield Mix and shall be installed at the architect's discretion in accordance with the manufacturer's recommendations. Contact the manufacturer for further instructions.

## 2.3 EXCESS MATERIALS

- A. Provide the owners' authorized representative with a 10-ton stockpile of material for future use.

## PART 3 - EXECUTION

### 3.1 SUB-BASE PREPARATION

- A. Compact sub-base to 90% or greater. If that compaction cannot be achieved, a select granular fill must be imported and placed that will fulfill the compaction requirement.
- B. The compacted sub-grade should mirror finish grade to ensure that an even depth of material has been placed.

### 3.2 PLACEMENT

- A. Place the material in lifts of 2 to 3 inches and lightly compact until an optimum compaction between 85 and 90 percent is achieved on a standard proctor test (ASTM D 689-07). Scarify the surface to facilitate bonding of the next lift and repeat until finish grade elevation is achieved. Completing this process as described will minimize settling and improve the performance of the product. See diagram in 3.1.C.
- B. Depth of the material shall be 4 inches for new construction when finished and compacted. Achieve 85% to 90% compaction based on a standard proctor test (ASTM D 689-07).

### 3.3 WATERING

- A. In most cases, the material is delivered with optimum moisture and adding water is not necessary. If unable to achieve optimum compaction, a light application of water may be needed.

### 3.4 FINISH GRADING

- A. For best results the material shall be finish graded with a laser device that allows accuracy to +/- 1/8 inch. A slope of 1/2 percent to 1 percent shall be placed on the infield surface in order to facilitate surface drainage.



### 3.5 INSPECTION

- A. The finished surface of the infield shall be smooth and free from any visible dips, humps, bumps or other blemishes which would hinder the removal of water through positive surface drainage. Where warranted, a finished elevation survey shall be conducted to assure proper installation.

### 3.6 TOPDRESSING

- A. Following successful inspection, topdressing shall be applied to the surface for optimum product performance. This topdressing is either expanded shale or calcined clay product and shall be added at a rate of 0.5 pounds per 1 square foot for maintenance, or 1 pound per 1 square foot for new construction.
- B. Topdressing shall be 1/8 - 1/4" thick.
- C. Product is either ProSlide Engineered Topdressing (expanded shale) or Turface Pro League Heritage Red Conditioner (calcined clay). Both products are available through DuraEdge Products, Inc., Grove City, PA, (866) 867-0052. Turface is also available through Profile Products LLC, 750 Lake Cook Rd, Suite 440, Buffalo Grove, Ill., (800) 207-6457.

END OF SECTION 321823.10



## Infield Mix For Baseball & Softball Fields

Connie Rudolph, CSFM, Head Groundskeeper  
Midway Stadium – Home of the St. Paul Saints

There are two options for a baseball/softball infield mix. One is having a sand/clay/silt mixed product and the other is a crushed limestone product. The first is much more labor intensive and is used mainly by major league baseball and other higher maintained fields. The second product works very well for lower budget fields and is a good alternative. The main objective is to have a material that is firm, but doesn't hold too much water causing wet playing conditions.

As I said, a clay based infield mix is much trickier to maintain and has some special considerations, but it usually is an excellent playing surface. The main consideration for a clay based field is the ratio of the three soil types – sand, clay and silt. If you have a field that receives a lot of play and rain can be an issue, you'll want to have the percentage of sand between 60 and 70, and the percentage of clay/silt at 30 to 40. If you have very little rain, infrequent play, or an excellent tarp system, the ratio of clay can be increased, which give you a firmer surface. However, you always have to keep in mind percolation rates. Ideally, you infield will have a drainage system with a sand/gravel mix under your infield mix.

The second option for an infield mix is ag-lime, which is a crushed red limestone. The key for maintaining this product is water management. It tends to dry out and be dusty if the field doesn't get enough water. It can play quite well and recovers quickly from a rainstorm without the use of tarps. My local source for this material is Bryan Red Rock out of Shakopee, MN.

Percolation is key for the mix you chose, although your main drainage should always be from surface run off. An easy way to test different infield mixes is to fill two 8 oz. plastic cups that have 4-5 1/8" holes in the bottom with your different mixes. Fill each ¾ full with water and let the water drain away. See how long before each mix becomes firm

by pressing your finger into the mix. The faster one can be played on sooner. This is a simple, but important test to compare different samples.

Another step you'll want to do is to make sure there aren't any large rocks in your mix, which can affect play. By passing your mix through a 3/8" screen you can get all the larger particles out and save yourself from dealing with it later when it's much harder to get them out.

Once your infield mix has been chosen, many grounds managers will fine tune their mix by adding a conditioner – usually calcined clay. This works best mixed into the top 2" and helps resist compaction and increases the water holding capacity.

Whatever mix you chose it's important to test the percolation rate, screen out the rocks, and make sure you have adequate slope (about a 2" drop from your infield grass to your outfield grass) because your skinned area should shed water, not drain it.

**GRAIN SIZE DISTRIBUTION TEST DATA**

3/24/2010

Client: SMITHFIELD PEAT

Project: SOURCE TESTING 2010

Project Number: X156

Location: SMITHFIELD, RI

Depth: N/A

Sample Number: A

Material Description: SAMPLE A, GRAVEL, SAMPLED BY CLIENT AND DELIVERED ON 3/22/10

Date: 3/22/10

PL: NP

LL: NV

PI: NP

USCS Classification: SM

AASHTO Classification: A-4(0)

Testing Remarks: SAMPLE A, DATE TESTED 3/23/10

Tested by: RH

Checked by: GJGIII

**Sieve Test Data**

Sieve Opening Size	Percent Finer
4	
3	
2	
1.5	
1.0	
.75	
.5	
.375	100.0
#4	99.0
#8	98.0
#16	97.0
#30	96.0
#50	93.0
#100	85.0
#200	39.0

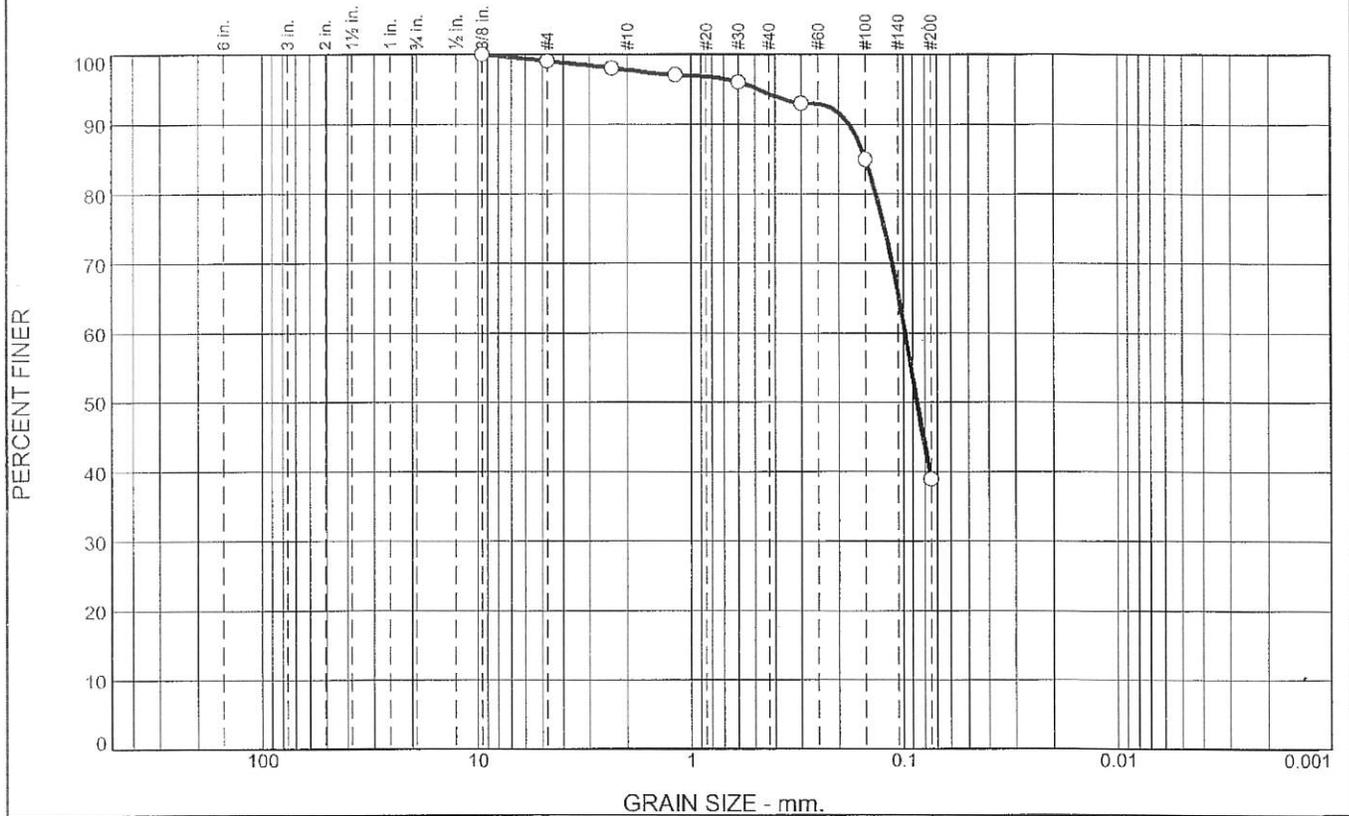
**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	1.0	1.0	1.3	3.4	55.3	60.0			39.0

D10	D15	D20	D30	D50	D60	D80	D85	D90	D95
				0.0861	0.0980	0.1340	0.1500	0.1793	0.4841

<b>Fineness Modulus</b>
0.32

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.0	1.3	3.4	55.3	39.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.0		
#8	98.0		
#16	97.0		
#30	96.0		
#50	93.0		
#100	85.0		
#200	39.0		

\* (no specification provided)

**Material Description**

SAMPLE A, GRAVEL, SAMPLED BY CLIENT AND DELIVERED ON 3/22/10

**Atterberg Limits**  
 PL= NP      LL= NV      PI= NP

**Coefficients**  
 D<sub>90</sub>= 0.1793      D<sub>85</sub>= 0.1500      D<sub>60</sub>= 0.0980  
 D<sub>50</sub>= 0.0861      D<sub>30</sub>=                      D<sub>15</sub>=  
 D<sub>10</sub>=                      C<sub>u</sub>=                      C<sub>c</sub>=

**Classification**  
 USCS= SM                      AASHTO= A-4(0)

**Remarks**  
 SAMPLE A, DATE TESTED 3/23/10

Location: SMITHFIELD, RI  
 Sample Number: A      Depth: N/A

Date: 3/22/10

<b>Geisser Engineering Corporation</b>  Riverside, Rhode Island	Client: SMITHFIELD PEAT Project: SOURCE TESTING 2010  Project No: X156
Figure	

Tested By: RH

Checked By: GJGIII



## SECTION 323113 - CHAIN LINK FENCES AND GATES

### 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. Chain-link fences.
  - 2. Swing gates.

#### 1.3 PRECONSTRUCTION MEETINGS

- A. Preconstruction Conference: Conduct conference at Project site .
  - 1. Review coordination of interlocked equipment specified in this Section and elsewhere.
  - 2. Review required testing, inspecting, and certifying procedures.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for the following:
    - a. Fence and gate posts, rails, and fittings.
    - b. Chain-link fabric, reinforcements, and attachments.

#### 1.5 FIELD CONDITIONS

- A. Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

#### 1.6 WARRANTY

- A. Special Warranty: Installer agrees to repair or replace components of chain-link fences and gates that fail in materials or workmanship within specified warranty period.



1. Failures include, but are not limited to, the following:
  - a. Failure to comply with performance requirements.
  - b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
  - c. Faulty operation of gate operators and controls.
2. Warranty Period: Five years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 CHAIN-LINK FENCE FABRIC

- A. General: Provide fabric in one-piece heights measured between top and bottom of outer edge of selvage knuckle or twist according to "CLFMI Product Manual" and requirements indicated below:
1. Fence Type A - Fabric Height: 72"
    - a. Aluminum Wire Fabric: ASTM F 1183, with mill finish, and Wire Diameter of 0.148 inch. Mesh Size 2 inches. Knuckled at both selvages.
  2. Fence Type B - Fabric Height: 144"
  3. Fence Type C - Backstop
    - a. Bottom 144": Aluminum Wire Fabric: ASTM F 1183, with mill finish, and wire diameter of 0.192 inch. Mesh Size 2 inches. Knuckled at both selvages.
    - b. Remaining Height: Aluminum Wire Fabric: ASTM F 1183, with mill finish, and wire diameter of 0.148 inch. Mesh Size 2 inches. Knuckled at both selvages.
  4. Fence Type D - Fabric Height: 48"
    - a. Aluminum Wire Fabric: ASTM F 1183, with mill finish, and wire diameter of 0.148 inch. Mesh Size 2 inches. Knuckled at both selvages.

### 2.2 FENCE FRAMEWORK

- A. Posts and Rails as detailed : ASTM F 1043 for framework, including rails, braces, and line; terminal and corner posts. Provide members with minimum dimensions and wall thickness according to ASTM F 1043 or ASTM F 1083 based on the following:
1. Fence Heights: 72", 144", 48"
  2. Horizontal Framework Members: Intermediate top and bottom rails according to ASTM F 1043.
  3. Fence Types A, C, and D - Metallic Coating for Steel Framework:
    - a. Type A: Not less than minimum 2.0-oz./sq. ft. average zinc coating according to ASTM A 123/A 123M or 4.0-oz./sq. ft. zinc coating according to ASTM A 653/A 653M.
    - b. Type B: Zinc with organic overcoat, consisting of a minimum of 0.9 oz./sq. ft. of zinc after welding, a chromate conversion coating, and a clear, verifiable polymer film.
    - c. External, Type B: Zinc with organic overcoat, consisting of a minimum of 0.9 oz./sq. ft. of zinc after welding, a chromate conversion coating, and a clear,



- verifiable polymer film. Internal, Type D, consisting of 81 percent, not less than **0.3-mil-** thick, zinc-pigmented coating.
- d. Type C: Zn-5-Al-MM alloy, consisting of not less than **1.8-oz./sq. ft.** coating.
- e. Coatings: Any coating above.
- 4. Fence Type B - Polymer coating over metallic coating.
  - a. Color: Black , according to ASTM F 934.

## 2.3 TENSION WIRE

- A. Fence Types A, C, and D - Metallic-Coated Steel Wire: **0.177-inch-** diameter, marcelled tension wire according to ASTM A 817 or ASTM A 824, with the following metallic coating:
  - 1. Type II: Zinc coated (galvanized) by hot-dip process, with the following minimum coating weight:
    - a. Class 3: Not less than **0.8 oz./sq. ft.** of uncoated wire surface.
    - b. Class 4: Not less than **1.2 oz./sq. ft.** of uncoated wire surface.
    - c. Class 5: Not less than **2 oz./sq. ft.** of uncoated wire surface.
    - d. Matching chain-link fabric coating weight.
- B. Fence Type B - Polymer-Coated Steel Wire: **0.177-inch-** diameter, tension wire according to ASTM F 1664, Class 1 over -coated steel wire.
  - 1. Color: Black , according to ASTM F 934.
- C. Aluminum Wire: **0.192-inch-** diameter tension wire, mill finished, according to **ASTM B 211**, Alloy 6061-T94 with **50,000-psi** minimum tensile strength.

## 2.4 SWING GATES

- A. General: ASTM F 900 for gate posts and double swing gate types.
  - 1. Gate Leaf Width: as noted .
  - 2. Framework Member Sizes and Strength: Based on gate fabric height of 72" .
- B. Pipe and Tubing:
  - 1. Zinc-Coated Steel: ASTM F 1043 and ASTM F 1083; protective coating and finish to match fence framework .
  - 2. Aluminum: ASTM B 429/B 429M; manufacturer's standard galv. finish.
  - 3. Gate Posts: Round tubular steel .
  - 4. Gate Frames and Bracing: Round tubular steel .
- C. Frame Corner Construction: Welded .
- D. Extended Gate Posts and Frame Members: Fabricate gate posts and frame end members to extend **12 inches** above top of chain-link fabric at both ends of gate frame to attach barbed tape assemblies.
- E. Hardware:



1. Hinges: 360-degree inward and outward swing.
2. Latch: Permitting operation from both sides of gate with provision for padlocking accessible from both sides of gate.
3. Lock: Manufacturer's standard internal device.

## 2.5 FITTINGS

- A. Provide fittings according to ASTM F 626.
- B. Post Caps: Provide for each post.
  1. Provide line post caps with loop to receive tension wire or top rail.
- C. Rail and Brace Ends: For each gate, corner, pull, and end post.
- D. Rail Fittings: Provide the following:
  1. Top Rail Sleeves: Pressed-steel or round-steel tubing not less than **6 inches** long.
  2. Rail Clamps: Line and corner boulevard clamps for connecting bottom rails to posts.
- E. Tension and Brace Bands: Pressed steel .
- F. Tension Bars: Steel , length not less than **2 inches** shorter than full height of chain-link fabric. Provide one bar for each gate and end post, and two for each corner and pull post, unless fabric is integrally woven into post.
- G. Tie Wires, Clips, and Fasteners: According to ASTM F 626.
  1. Standard Round Wire Ties: For attaching chain-link fabric to posts, rails, and frames, according to the following:
    - a. Hot-Dip Galvanized Steel: **0.106-inch-** diameter wire ;galvanized coating thickness matching coating thickness of chain-link fence fabric.
    - b. Aluminum: **ASTM B 211**; Alloy 1350-H19; **0.148-inch-** diameter, mill-finished wire.
- H. Finish:
  1. Metallic Coating for Pressed Steel or Cast Iron: Not less than **1.2 oz./sq. ft.** of zinc.
    - a. Polymer coating over metallic coating.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, pavement work, and other conditions affecting performance of the Work.



1. Do not begin installation before final grading is completed unless otherwise permitted by Owner's Representative.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 CHAIN-LINK FENCE INSTALLATION

- A. Install chain-link fencing fabric according to ASTM F 567 and more stringent requirements specified.
- B. Post Setting: Set posts in concrete at indicated spacing into firm, undisturbed soil.
  1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
  2. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.
    - a. Exposed Concrete: Extend **2 inches** above grade; shape and smooth to shed water.
    - b. Concealed Concrete: Place top of concrete **2 inches** as noted below grade to allow covering with surface material.
    - c. Posts Set into Holes in Concrete: Form or core drill holes not less than **5 inches** deep and **3/4 inch** larger than OD of post. Clean holes of loose material, insert posts, and fill annular space between post and concrete with nonshrink, nonmetallic grout, mixed and placed according to anchoring material manufacturer's written instructions. Finish anchorage joint to slope away from post to drain water.
- C. Post Bracing and Intermediate Rails: Install according to ASTM F 567, maintaining plumb position and alignment of fence posts. Diagonally brace terminal posts to adjacent line posts with truss rods and turnbuckles. Install braces at end and gate posts and at both sides of corner and pull posts.
  1. Locate horizontal braces at midheight of fabric 72" or higher, on fences with top rail, and at two-third fabric height on fences without top rail. Install so posts are plumb when diagonal rod is under proper tension.
- D. Tension Wire: Install according to ASTM F 567, maintaining plumb position and alignment of fence posts. Pull wire taut, without sags. Fasten fabric to tension wire with **0.120-inch-** diameter hog rings of same material and finish as fabric wire, spaced a maximum of **24 inches** o.c. Install tension wire in locations indicated before stretching fabric. Provide horizontal tension wire at the following locations:
  1. Extended along bottom of fence fabric. Install top tension wire through post cap loops. Install bottom tension wire within **6 inches** of bottom of fabric and tie to each post with not less than same diameter and type of wire.
- E. Top Rail: Install according to ASTM F 567, maintaining plumb position and alignment of fence posts. Run rail continuously through line post caps, bending to radius for curved runs and terminating into rail end attached to posts or post caps fabricated to receive rail at terminal posts. Provide expansion couplings as recommended in writing by fencing manufacturer.



- F. Chain-Link Fabric: Apply fabric to outside of enclosing framework. Leave **2-inch** bottom clearance between finish grade or surface and bottom selvage unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.
- G. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts, with tension bands spaced not more than **15 inches** o.c.
- H. Tie Wires: Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at one end to chain-link fabric, wrap wire around post a minimum of 180 degrees, and attach other end to chain-link fabric according to ASTM F 626. Bend ends of wire to minimize hazard to individuals and clothing.
  - 1. Maximum Spacing: Tie fabric to line posts at **12 inches** o.c. and to braces at **24 inches** o.c.
- I. Fasteners: Install nuts for tension bands and carriage bolts on the side of fence opposite the fabric side.

### 3.3 GATE INSTALLATION

- A. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach fabric as for fencing. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation.

END OF SECTION 323113



## **ASSA ABLOY Patriot Ornamental Welded Wire Fence Specifications:**

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[This specification contains options and notes in square brackets. The various choices relate to the color, style, size, and component dimensions of the fences. Select one of the options and eliminate the brackets in your final specifications.]

### **Section 32 31 16 – Welded Wire Fences and Gates**

#### **PART 1 – GENERAL:**

##### **1.01 SECTION INCLUDES**

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

##### **1.02 RELATED SECTIONS**

A. Section 312000 - Earthmoving

B. Section 321313 – Concrete Paving

##### **1.03 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.

##### **1.04 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.

##### **1.05 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

##### **1.06 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.

### **1.07 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:**

### **2.01 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: Not permitted.
- C. Nominal fence height shall be 48 inches. Fences taller than 72” shall be made by stacking two same height panels on top of each other.
- E. Color shall be Black.

### **2.02 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.

### **2.03 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.

### **2.03 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.

### **2.05 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:**

### **3.01 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.

### **3.02 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.

### **3.03 GATE INSTALLATION**

A. Set gate posts plumb and level for gate openings specified in construction drawings.

B. Install gates to allow full opening without interference after concrete has hardened around gate posts. Adjust hardware for smooth operation. Install one drop rod for double gates.

### **3.04 ACCESSORIES**

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

### **3.05 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.



# Patriot™ Ornamental Wire Fence Installation Instructions

Please read these instructions thoroughly before attempting to install your Patriot Fence. While installation of the fence is relatively easy, this instruction sheet should eliminate any guess work. If you have any questions or problems installing the fence, please call us weekdays at 1-800-344-2242.

## Materials Needed:

- Stakes
- String
- Measuring Tape
- Post Hole Digger
- Level
- Concrete Mix
- 5/16" socket 11/64" and 3/8" Drill Bits and Driver
- Reciprocating or Band or Hack Saw

## Before You Begin Installing Your Fence:

- Establish your fence line by staking out the area to be enclosed and attaching a guide string to the stakes. Make sure the fence is set back from the property line as required by local codes.
- Gates and sections should be installed so that the bottom of the fence is about 2" above ground level. This will allow the grass under the fence to be easily trimmed.

**Caution: Panels may be cut on site to adjust fence length. Always cut flush with vertical wire for safety and to allow vertical to be secured to fence post with cable tie. Adjustment can be made in multiples of 1 3/4" or 3 1/2" depending on style of fence. All cut pieces must be seal-coated with zinc rich primer (known as "Cold Galvanizing" or "Cold Galv") and then painted with Jerith's custom touch-up paint. This two step process should also be done in any place where the finish has been damaged. Failure to follow this procedure may void the warranty!**

## Fence Installation:

1. Start at a terminal post (end, corner, or gate post). Gate locations may take priority depending upon gate widths or location. If so, start with gate posts (see "Gate Installation" below for Gate post spacing). Other fence lines may take priority due to restriction of panel lengths (see Adjustment Caution above). Spacing from face to face of posts will be actual length of panel plus 1/4" for the rail end flanges.
2. After the terminal post is set, you may proceed by installing a section and a post at a time, or by setting all the line posts making sure they are set at proper spacing (see Spacing note in Caution above). Remember, if shortened, the section should always be cut flush with the vertical wire so that it will abut post and allow cable ties to secure that vertical to the post. Heights of posts above ground level should be 4" longer than height of fence section to allow for 2" space over grade and 2" over top rail. (If on a slope, add the length of the drop to the lower post. If drop too severe, go to next longer post). Regardless of preference for post setting, one rail end should be slid into each open end of top and bottom rails (See Figure 1).

**Caution: The concrete footings must extend below the frost line in areas where freezing of the ground can cause the posts to "heave". The posts themselves do not have to go below the frost line for proper installation.**

3. Continue in this manner until all fence posts and sections are installed.
4. If the grade is too steep, there may be too much space under the bottom rail of the section. If so, it may be necessary to cut the section in half and use an extra post to reduce the space beneath the section or add fill dirt under the fence section. Cold galvanize and touch up cut ends.
5. Sections will proceed from post to post using 4 rail ends per section (see Figure 1). Attach rail ends as shown with TEK screws. **When using posts heavier than 14 ga, predrill holes for rail ends.** Flanges of rail ends point toward wire and **rail ends can be adjusted for angles in lines.** Cable ties for vertical rigidity are added as you proceed or after all the fence sections have been installed. It is only necessary to secure one of the four corners of each section by using one tech screw through the rail and into the rail end. One end of the section should be allowed to float freely to allow for expansion and contraction.
6. Fill in the top of the post holes with dirt and grass so the fence will look like it's been there for years. Your fence installation is now complete!

## Gate Installation:

**Caution: The proper operation of the gate depends upon the correct installation of the gate posts. Make certain that posts are plumb.**

1. Gates are available in either kit form for residential and light commercial use, or as prefabricated heavy duty welded frames for heavy commercial or industrial use. All gate openings are "nominal", meaning a gate opening may vary from stated width due to the location of the vertical wires. (A "4 foot" gate opening may actually measure 3'10" - 4'2"). Openings for each gate type are always measured from inside face of gate post to inside face of gate post. Gate openings will be affected by which type of gate is specified and what hardware is used. Each will require some fabrication on site and any standard gate hardware that will fit the gate frames and posts can be used.
2. **For gate kits** the gate opening should be determined before setting posts. Openings are computed by adding the actual section width plus  $2\frac{1}{4}$ " for gate verticals, plus allowances for hinges and latches. Jerith's standard hardware will add another 4" (2" for hinges, 2" for latch) to the opening. If other hardware is used, consult instructions for hinge and latch allowances. Gate kits are assembled by inserting the stubs welded onto the 1" square gate verticals into the top and bottom rails and fastening with two self-drilling screws at each corner (see figure 2). Use cable ties to secure wire verticals to the uprights. Screw diagonal brace (provided) to the gate vertical near the top end of hinge side of gate, cut to proper length, and then drill  $\frac{1}{4}$ " hole, cold galv, and secure with tek screw provided. Gate is complete.
3. Heavy duty gates are comprised of 2" square uprights with  $1\frac{1}{2}$ " x  $1\frac{1}{2}$ " U-channel top and bottom members welded at each connection with a 1" diagonal brace welded into place. Matching fence section will be welded into the frame. The opening between gate posts should be equal to the size of gate ordered.(i.e. a 48" gate fits into a 48" wide opening.)
4. Once the concrete has set around the gate posts, you may install the gates.
5. Attach hinges to the gate frame first and then the gate post. Mount one hinge near the top rail of the gate and the other near the bottom rail to distribute the weight of the gate evenly. The gate should now swing freely.
6. For double drive gates, the drop rod is installed next. Place the drop rod high enough to ensure ground clearance of the drop rod when the gate is opened.
7. Finally, position the latch at a convenient height (or as required by local codes) and fasten the latch onto the side of the gate.

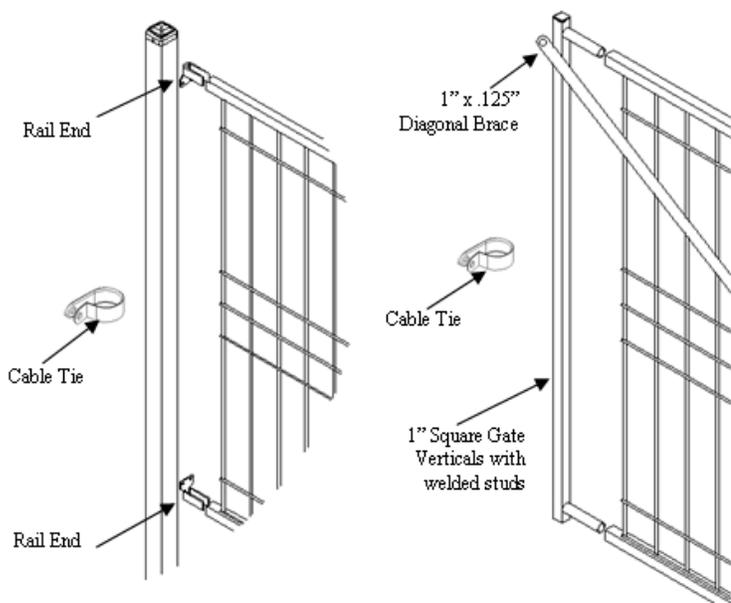


FIGURE 1

FIGURE 2

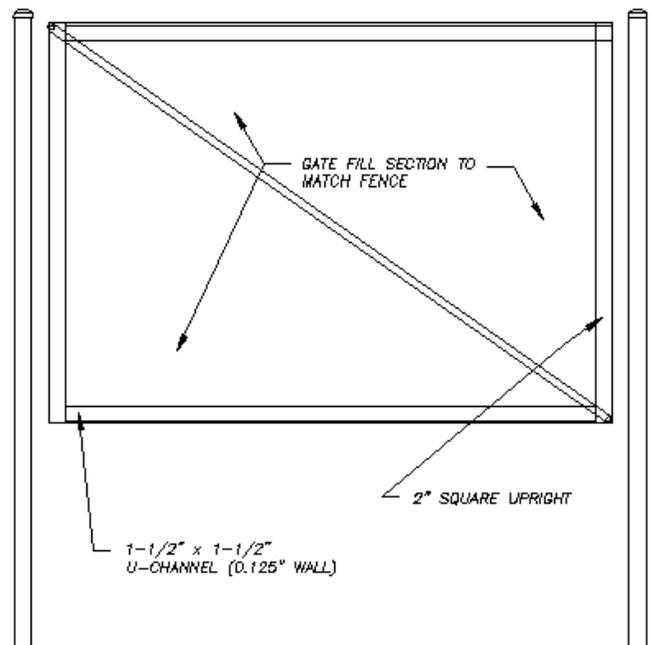


FIGURE 3



## SECTION 323300 - SITE FURNISHINGS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Seating.

#### 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 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For site furnishings to include in maintenance manuals.
- B. The Contractor shall furnish and deliver standard written manufacturer's guarantee in Owner's name covering all materials and workmanship under this Section 323300, Site Furnishings, in addition to, and not in lieu of, guarantee requirements set forth under Section 010000, GENERAL REQUIREMENTS, and other liabilities which the Contractor may have by law or other provisions of the Contract Documents.
- C. Supplier shall pay for repairs of any damage to any part of the project caused by defects in his work and for any repair to the materials or equipment caused by replacement. All repairs are to be done to the satisfaction of the Owner's Representative.
- D. Any part of the work installed under this contract requiring excessive maintenance shall be considered as being defective, and shall be replaced by the Supplier during the one year guarantee period at no cost to the Owner.



## PART 2 - PRODUCTS

### 2.1 SEATING

- A. 92" long bench with no backrest, direct bury, plastisol color: tan with black supports, (model #141683) manufactured by Landscape Structures, Delano, MN 55328 800.574.4678, 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. Post Setting: Set cast-in support posts in concrete footing with smooth top, shaped to shed water. Protect portion of posts above footing from concrete splatter. Verify that posts are set plumb or at correct angle and are aligned and at correct height and spacing. Hold posts in position during placement and finishing operations until concrete is sufficiently cured.

END OF SECTION 323300

## SECTION 328400 - PLANTING IRRIGATION

### 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. Piping.
2. Encasement for piping.
3. Pressure-reducing valves.
4. Automatic control valves.
5. Automatic drain valves.
6. Transition fittings.
7. Miscellaneous piping specialties.
8. Quick couplers.
9. Drip irrigation specialties.
10. Controllers.
11. Boxes for automatic control valves.
12. glass

- B. Sprinklers.

- C. Related Sections:

1. Section 220519 "Meters and Gages for Plumbing Piping" for water metering requirements.
2. Section 230923.14 "Flow Instruments" for water metering equipment.

#### 1.3 DEFINITIONS

- A. Circuit Piping: Downstream from control valves to sprinklers, specialties, and drain valves. Piping is under pressure during flow.
- B. Drain Piping: Downstream from circuit-piping drain valves. Piping is not under pressure.
- C. ET Controllers: EvapoTranspiration Controllers. Irrigation controllers which use some method of weather based adjustment of irrigation. These adjusting methods include use of historical monthly averages of ET; broadcasting of ET measurements; or use of on-site sensors to track ET.

- D. Main Piping: Downstream from point of connection to water distribution piping to, and including, control valves. Piping is under water-distribution-system pressure.
- E. Low Voltage: As defined in NFPA 70 for circuits and equipment operating at less than 50 V or for remote-control, signaling power-limited circuits.

#### 1.4 PERFORMANCE REQUIREMENTS

- A. Irrigation zone control shall be automatic operation with controller and automatic control manual operation with manual valves.
- B. Location of Sprinklers and Specialties: Design location is approximate. Make minor adjustments necessary to avoid plantings and obstructions such as signs and light standards. Maintain 100 percent irrigation coverage of areas indicated.
- C. Minimum Working Pressures: The following are minimum pressure requirements for piping, valves, and specialties unless otherwise indicated:
  - 1. Irrigation Main Piping: 200 PSI.
  - 2. Circuit Piping: 150 PSI.

#### 1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated. Include rated capacities, operating characteristics, and furnished specialties and accessories.
- B. Wiring Diagrams: For power, signal, and control wiring.

#### 1.6 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Irrigation systems, drawn to scale, on which components are shown and coordinated with each other, using input from Installers of the items involved. Also include adjustments necessary to avoid plantings and obstructions such as signs and light standards.
- B. Qualification Data: For qualified Installer.
- C. Zoning Chart: Show each irrigation zone and its control valve.
- D. Controller Timing Schedule: Indicate timing settings for each automatic controller zone.

#### 1.7 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For sprinklers controllers and automatic control valves to include in operation and maintenance manuals.

## 1.8 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1.
  - 2. Spray percent of amount installed for each type and size indicated, but no fewer than 5 units.
  - 3. percent of amount installed for each type indicated, but no fewer than 5 units.
  - 4. percent of amount installed for each type indicated, but no fewer than 5 units.
  - 5. Drip-Tube System Tubing: Equal to percent of total length installed for each type and size indicated, but not less than **100 feet** .
  - 6. Soaker Tubes: Equal to percent of total length installed for each type and size indicated, but not less than **100 feet** .

## 1.9 QUALITY ASSURANCE

- A. Installer Qualifications: An employer of workers that include a Licensed Master Irrigator.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

## 1.10 DELIVERY, STORAGE, AND HANDLING

- A. Deliver piping with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent -end damage and to prevent entrance of dirt, debris, and moisture.
- B. Store plastic piping protected from direct sunlight. Support to prevent sagging and bending.

## 1.11 PROJECT CONDITIONS

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

## PART 2 - PRODUCTS

### 2.1 PIPES, TUBES, AND FITTINGS

- A. Comply with requirements in the piping schedule for applications of pipe, tube, and fitting materials, and for joining methods for specific services, service locations, and pipe sizes.
- B. Galvanized-Steel Pipe: ASTM A 53/A 53M, Standard Weight, Type E, Grade B.

1. Galvanized-Steel Pipe Nipples: ASTM A 733, made of ASTM A 53/A 53M or ASTM A 106/A 106M, Standard Weight, seamless-steel pipe with threaded ends.
  2. Galvanized, Gray-Iron Threaded Fittings: ASME B16.4, Class 125, standard pattern.
  3. Malleable-Iron Unions: ASME B16.39, Class 150, hexagonal-stock body with ball-and-socket, metal-to-metal, bronze seating surface, and female threaded ends.
  4. Cast-Iron Flanges: ASME B16.1, Class 125.
- C. Ductile-Iron Pipe with Mechanical Joints: AWWA C151, with mechanical-joint bell and spigot ends.
1. Mechanical-Joint, Ductile-Iron Fittings: AWWA C110, ductile- or gray-iron standard pattern or AWWA C153, ductile-iron compact pattern.
    - a. Glands, Gaskets, and Bolts: AWWA C111, ductile- or gray-iron glands, rubber gaskets, and steel bolts.
- D. Ductile-Iron Pipe with Push-on Joint: AWWA C151, with push-on-joint bell and spigot ends.
1. Push-on-Joint, Ductile-Iron Fittings: AWWA C110, ductile- or gray-iron standard pattern or AWWA C153, ductile-iron compact pattern.
    - a. Gaskets: AWWA C111, rubber.
- E. Soft Copper Tube: , water tube, annealed temper.
1. Copper Pressure Fittings: ASME B16.18, cast-copper-alloy or ASME B16.22, wrought-copper solder-joint fittings. Furnish wrought-copper fittings if indicated.
  2. Bronze Flanges: ASME B16.24, Class 150, with solder-joint end.
  3. Copper Unions: MSS SP-123, cast-copper-alloy, hexagonal-stock body, with ball-and-socket, metal-to-metal seating surfaces and solder-joint or threaded ends.
- F. Hard Copper Tube: **ASTM B 88, Type M**, water tube, drawn temper.
1. Copper Pressure Fittings: ASME B16.18, cast-copper-alloy or ASME B16.22, wrought-copper solder-joint fittings. Furnish wrought-copper fittings if indicated.
  2. Bronze Flanges: ASME B16.24, Class 150, with solder-joint end.
  3. Copper Unions: MSS SP-123, cast-copper-alloy, hexagonal-stock body, with ball-and-socket, metal-to-metal seating surfaces and solder-joint or threaded ends.
- G. PE Pipe with Controlled ID: ASTM F 771, PE 3408 compound; SDR 15.
1. Insert Fittings for PE Pipe: ASTM D 2609, nylon or propylene plastic with barbed ends. Include bands or other fasteners.
- H. PE Pipe with Controlled OD: ASTM F 771, PE 3408 compound, SDR 11.
1. PE Butt, Heat-Fusion Fittings: ASTM D 3261.
  2. PE Socket-Type Fittings: ASTM D 2683.
- I. PE Pressure Pipe: AWWA C906, with DR of 7.3, 9, or 9.3 and PE compound number required to give pressure rating not less than **160 psig** .
1. PE Socket-Type Fittings: ASTM D 2683.

- J. PVC Pipe: ASTM D 1785, PVC 1120 compound, Schedule 40 .
  - 1. PVC Socket Fittings: ASTM D 2466, Schedules 40 and 80.
  - 2. PVC Threaded Fittings: ASTM D 2464, Schedule 80.
  - 3. PVC Socket Unions: Construction similar to MSS SP-107, except both headpiece and tailpiece shall be PVC with socket ends.
- K. PVC Pipe, Pressure Rated: ASTM D 2241, PVC 1120 compound, SDR 21 and SDR 26.
  - 1. PVC Socket Fittings: ASTM D 2467, Schedule 80.
  - 2. PVC Socket Unions: Construction similar to MSS SP-107, except both headpiece and tailpiece shall be PVC with socket or threaded ends.

## 2.2 PIPING JOINING MATERIALS

- A. Pipe-Flange Gasket Materials: AWWA C110, rubber, flat face, **1/8 inch** thick unless otherwise indicated; full-face or ring type unless otherwise indicated.
- B. Metal, Pipe-Flange Bolts and Nuts: ASME B18.2.1, carbon steel unless otherwise indicated.
- C. Brazing Filler Metals: AWS A5.8/A5.8M, BCuP Series, copper-phosphorus alloys for general-duty brazing unless otherwise indicated.
- D. Solder Filler Metals: ASTM B 32, lead-free alloys. Include water-flushable flux according to ASTM B 813.
- E. Solvent Cements for Joining PVC Piping: ASTM D 2564. Include primer according to ASTM F 656.
- F. Plastic, Pipe-Flange Gasket, Bolts, and Nuts: Type and material recommended by piping system manufacturer unless otherwise indicated.

## 2.3 MANUAL VALVES

- A. Bronze Ball Valves:
  - 1. Manufacturers: Subject to compliance with requirements, undefined:
    - a. Apollo Flow Controls; Conbraco Industries, Inc.
    - b. NIBCO INC.
    - c. WATTS.
    - d. Zurn Industries, LLC.
    - e. Or Approved Equal
  - 2. Description:
    - a. Standard: MSS SP-110.
    - b. SWP Rating: **150 psig** .
    - c. CWP Rating: **600 psig** .
    - d. Body Design: Two piece.
    - e. Body Material: Bronze.
    - f. Ends: Threaded or solder joint if indicated.

- g. Seats: PTFE or TFE.
- h. Stem: Bronze.
- i. Ball: Chrome-plated brass.
- j. Port: Full or regular, but not reduced.

B. Plastic Ball Valves:

- 1. **Manufacturers:** Subject to compliance with requirements, undefined:
  - a. NIBCO INC.
  - b. Spears Manufacturing Company.
  - c. WATTS.
  - d. Or Approved Equal
- 2. Description:
  - a. Standard: MSS SP-122.
  - b. Pressure Rating: **125 psig** minimum .
  - c. Body Material: PVC.
  - d. Type: Union.
  - e. End Connections: Socket or threaded.
  - f. Port: Full.

C. Iron Gate Valves, NRS:

- 1. **Manufacturers:** Subject to compliance with requirements, undefined:
  - a. NIBCO INC.
  - b. WATTS.
  - c. Or Approved Equal
- 2. Description:
  - a. Standard: MSS SP-70, Type I.
  - b. CWP Rating: **200 psig** .
  - c. Body Material: ASTM A 126, gray iron with bolted bonnet.
  - d. Ends: Flanged.
  - e. Trim: All bronze.
  - f. Disc: Solid wedge.
  - g. Packing and Gasket: Asbestos free.

2.4 PRESSURE-REDUCING VALVES

A. Water Regulators:

- 1. **Manufacturers:** Subject to compliance with requirements, undefined:
  - a. Apollo Flow Controls; Conbraco Industries, Inc.
  - b. WATTS.
  - c. Or Approved Equal
- 2. Description:
  - a. Standard: ASSE 1003.
  - b. Body Material: Bronze for **NPS 2** and smaller; cast iron for **NPS 2-1/2 and NPS 3** .
  - c. Pressure Rating: Initial pressure of **150 psig** .
  - d. End Connections: Threaded for **NPS 2** and smaller; flanged for **NPS 2-1/2 and NPS 3** .

3. Capacities and Characteristics:
  - a. Size: <Insert > **NPS**].
  - b. Design Flow Rate: <Insert > **gpm**].
  - c. Design Inlet Pressure: <Insert > **psig**].
  - d. Design Outlet Pressure Setting: <Insert > **psig**].

B. Water Control Valves:

1. **Manufacturers:** Subject to compliance with requirements, provide products by one of the following:
  - a. WATTS.
  - b. Zurn Industries, LLC.
  - c. Or Approved Equal
2. Description: Pilot-operation, diaphragm-type, single-seated main water control valve. Include small pilot control valve, restrictor device, specialty fittings, and sensor piping.
  - a. Main Valve Body: Cast- or ductile-iron body with AWWA C550 or FDA-approved, interior epoxy coating; or stainless-steel body.
  - b. Pattern: Angle -valve design.
  - c. Trim: Stainless steel.
  - d. Pressure Rating: Initial pressure of **150 psig** minimum.
  - e. End Connections: Threaded for **NPS 2** and smaller; Gasket Joint for **NPS 2-1/2** and larger.

## 2.5 AUTOMATIC CONTROL VALVES

A. Plastic, Automatic Control Valves:

1. **Manufacturers:** Subject to compliance with requirements, provide products by one of the following:
  - a. Hunter Industries Incorporated.
  - b. Rain Bird Corporation.
  - c. Or Approved Equal
2. Description: Molded-plastic body, normally closed, diaphragm type with manual-flow adjustment, and operated by 24-V ac solenoid.

## 2.6 AUTOMATIC DRAIN VALVES

- A. Description: Spring-loaded-ball type of corrosion-resistant construction and designed to open for drainage if line pressure drops below **2-1/2 to 3 psig** .

## 2.7 TRANSITION FITTINGS

- A. General Requirements: Same size as, and with pressure rating at least equal to and with ends compatible with, piping to be joined.
- B. Transition Couplings:

1. **Manufacturers:** Subject to compliance with requirements, provide products by one of the following:
  - a. Ford Meter Box Company, Inc. (The).
  - b. JCM Industries, Inc.
  - c. Smith-Blair, Inc.
  - d. Or Approved Equal
2. Description: AWWA C219, metal sleeve-type coupling for underground pressure piping.

## 2.8 MISCELLANEOUS PIPING SPECIALTIES

- A. Water Hammer Arresters: ASSE 1010 or PDI WH 201, with bellows or piston-type pressurized cushioning chamber and in sizes complying with PDI WH 201, Sizes A to F.
- B. Pressure Gages: ASME B40.1. Include **4-1/2-inch-** diameter dial, dial range of two times system operating pressure, and bottom outlet.

## 2.9 SPRINKLERS

- A. General Requirements: Designed for uniform coverage over entire spray area indicated at available water pressure.
- B. Plastic, Pop-up, Gear-Drive Rotary Sprinklers:
  1. **Manufacturers:** Subject to compliance with requirements, provide products by one of the following:
    - a. Hunter Industries Incorporated.
    - b. Rain Bird Corporation.
    - c. Or Approved Equal
  2. Description:
    - a. Body Material: ABS.
    - b. Nozzle: ABS .
    - c. Retraction Spring: Stainless steel.
    - d. Internal Parts: Corrosion resistant.
- C. Metal, Pop-up, Impact-Drive Rotary Sprinklers:
  1. **Manufacturers:** Subject to compliance with requirements, provide products by the following :
    - a. Rain Bird.
    - b. Or Approved Equal
  2. Description:
    - a. Case: Brass.
    - b. Body Material: Brass.
    - c. Pop-up Height: **4 inches** aboveground to nozzle.
    - d. Sprinkler Construction: Brass and other corrosion-resistant metals.
- D. Plastic, Surface Spray Sprinklers:

1. Manufacturers: Subject to compliance with requirements, provide products by the following:
    - a. Champion Irrigation Products.
    - b. Or Approved Equal
  2. Description:
    - a. Body Material and Flange: ABS.
    - b. Pattern: Fixed, with flow adjustment.
- E. Metal, Surface, Pop-up Spray Sprinklers:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Hunter.
    - b. Rain Bird.
    - c. Or Approved Equal
  2. Description:
    - a. Body Material and Flange: Brass.
    - b. Nozzle: Brass.
    - c. Pattern: Fixed, with flow adjustment.
- F. Plastic, Surface, Pop-up Spray Sprinklers:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Hunter.
    - b. Rain Bird.
    - c. Or Approved Equal
  2. Description:
    - a. Body Material and Flange: ABS.
    - b. Pattern: Fixed, with flow adjustment.
- G. Plastic, Pop-up Spray Sprinklers:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Hunter Industries Incorporated.
    - b. Rain Bird Corporation.
    - c. Or Approved Equal
  2. Description:
    - a. Body Material: ABS.
    - b. Nozzle: ABS .
    - c. Retraction Spring: Stainless steel.
    - d. Internal Parts: Corrosion resistant.
    - e. Pattern: Fixed, with flow adjustment.
- H. Plastic Shrub Sprinklers:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Hunter Industries Incorporated.
    - b. Rain Bird.

- c. Or Approved Equal
2. Description:
  - a. Body Material: ABS or other plastic.
  - b. Pattern: Fixed, with flow adjustment.

## 2.10 QUICK COUPLERS

- A. **Manufacturers:** Subject to compliance with requirements, provide products by the following:
  1. Rain Bird Corporation.
  2. Or Approved Equal
- B. Description: Factory-fabricated, bronze or brass, two-piece assembly. Include coupler water-seal valve; removable upper body with spring-loaded or weighted, rubber-covered cap; hose swivel with ASME B1.20.7, 3/4-11.5NH threads for garden hose on outlet; and operating key.
  1. Locking-Top Option: Vandal-resistant locking feature. Include one matching key(s).

## 2.11 DRIP IRRIGATION SPECIALTIES

- A. **Manufacturers:** Subject to compliance with requirements, provide products by one of the following:
  1. Netafim USA.
  2. Rain Bird Corporation.
  3. Or Approved Equal
- B. Freestanding Emitters: Device to deliver water at approximately **20 psig** .
  1. Body Material: PE or vinyl, with flow control.
  2. Riser to Emitter: PE or PVC flexible tubing.
- C. Manifold Emitter Systems: Manifold with tubing and emitters.
  1. Manifold: With multiple outlets to deliver water to emitters.
    - a. Body Material: Plastic.
    - b. Outlet Caps: Plastic, for outlets without installed tubing.
    - c. Operation: Automatic pressure compensating.
  2. Tubing: PE or PVC; **1/8-inch** minimum ID.
  3. Emitter: Device to deliver water at approximately **20 psig** .
    - a. Body Material: PE or vinyl, with flow control.
- D. Multiple-Outlet Emitter Systems: Emitter with tubing and button-type outlets.
  1. Emitter: With multiple outlets to deliver water to remote outlets.
    - a. Body Material: Plastic, with flow control.
    - b. Outlet Caps: Plastic, for outlets without installed tubing.
    - c. Operation: Automatic pressure compensating.
    - d. Emitters: Devices to deliver water at approximately **20 psig**

2. Tubing: PE or PVC; **1/8-inch** minimum ID.
- E. Drip Tubes with Direct-Attached Emitters:
  1. Tubing: Flexible PE or PVC with plugged end.
  2. Emitters: Devices to deliver water at approximately **20 psig**.
    - a. Body Material: PE or vinyl, with flow control.
    - b. Mounting: Inserted into tubing at set intervals.
- F. Drip Tubes with Remote Discharge:
  1. Tubing: Flexible PE or PVC with plugged end.
  2. Emitters: Devices to deliver water at approximately **20 psig**.
    - a. Body Material: PE or vinyl, with flow control.
    - b. Mounting: Inserted into tubing at set intervals.
  3. Capacities and Characteristics:
    - a. Tubing Size: [**NPS 3/4**].
    - b. Length: [12] <Insert > **inches**.
    - c. Emitter Spacing: [12] <Insert > **inches**.
    - d. Emitter Flow: **1/2 gph**.
    - e. Branch Tubing Size: **NPS 1/4** with button-type outlet.
    - f. Branch Tubing Length: [12] <Insert > **inches**.
- G. Off-Ground Supports: Plastic stakes.
- H. Application Pressure Regulators: Brass or plastic housing, **NPS 3/4**, with corrosion-resistant internal parts; capable of controlling outlet pressure to approximately **20 psig**.
- I. Filter Units: Brass or plastic housing, with corrosion-resistant internal parts; of size and capacity required for devices downstream from unit.
- J. Air Relief Valves: Brass or plastic housing, with corrosion-resistant internal parts.
- K. Vacuum Relief Valves: Brass or plastic housing, with corrosion-resistant internal parts.

## 2.12 CONTROLLERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  1. Hunter Industries Incorporated.
  2. Rain Bird Corporation.
  3. Or Approved Equal
- B. Description:
  1. Controller Stations for Automatic Control Valves: Each station is variable from approximately 5 to 60 minutes. Include switch for manual or automatic operation of each station.

2. Exterior Control Enclosures: NEMA 250, Type 4, weatherproof, with locking cover and two matching keys; include provision for grounding.
  - a. Body Material: Enameled-steel sheet metal .
  - b. Mounting: Freestanding type for concrete base .
3. Interior Control Enclosures: NEMA 250, Type 12, dripproof, with locking cover and two matching keys.
  - a. Body Material: Molded plastic.
  - b. Mounting: Surface type for wall.
4. Control Transformer: 24-V secondary, with primary fuse.
5. Timing Device: Adjustable, 24-hour, 14-day clock, with automatic operations to skip operation any day in timer period, to operate every other day, or to operate two or more times daily.
  - a. Manual or Semiautomatic Operation: Allows this mode without disturbing preset automatic operation.
  - b. Nickel-Cadmium Battery and Trickle Charger: Automatically powers timing device during power outages.
  - c. Surge Protection: Metal-oxide-varistor type on each station and primary power.
6. Moisture Sensor: Adjustable from one to seven days, to shut off water flow during rain.
7. Smart Controllers: Use ET, tested in accordance with IA SWAT Climatological Based Controllers 8th Draft Testing Protocol and compliant with ASHRAE Standard 189.1.
8. Wiring: UL 493, Type UF multiconductor, with solid-copper conductors; insulated cable; suitable for direct burial.
  - a. Feeder-Circuit Cables: No. 12 AWG minimum, between building and controllers.
  - b. Low-Voltage, Branch-Circuit Cables: No. 14 AWG minimum, between controllers and automatic control valves; color-coded different from feeder-circuit-cable jacket color; with jackets of different colors for multiple-cable installation in same trench.
  - c. Splicing Materials: Manufacturer's packaged kit consisting of insulating, spring-type connector or crimped joint and epoxy resin moisture seal; suitable for direct burial.
9. Concrete Base: Reinforced precast concrete not less than **36 by 24 by 4 inches** thick, and **6 inches** greater in each direction than overall dimensions of controller. Include opening for wiring.

## 2.13 BOXES FOR AUTOMATIC CONTROL VALVES

### A. Plastic Boxes:

1. **Manufacturers:** Subject to compliance with requirements, provide products by one of the following:
  - a. Ametec.
  - b. Armorcast Products Company.
  - c. Carson.
  - d. Or Approved Equal
2. Description: Box and cover, with open bottom and openings for piping; designed for installing flush with grade.
  - a. Size: As required for valves and service.
  - b. Shape: Rectangular.
  - c. Sidewall Material: PE, ABS, or FRP .
  - d. Cover Material: PE, ABS, or FRP .

1) Lettering: " IRRIGATION ."

- B. Drainage Backfill: Cleaned gravel or crushed stone, graded from **3/4 inch** minimum to **3 inches** maximum.

PART 3 - EXECUTION

3.1 EARTHWORK

- A. Excavating, trenching, and backfilling are specified in Section 312000 "Earth Moving."
- B. Drain Pockets: Excavate to sizes indicated. Backfill with cleaned gravel or crushed stone, graded from **3/4 to 3 inches** , to **12 inches** below grade. Cover gravel or crushed stone with sheet of asphalt-saturated felt and backfill remainder with excavated material.
- C. Provide minimum cover over top of underground piping according to the following:
1. Irrigation Main Piping: Minimum depth of 18 inches below finished grade, or not less than
  2. Circuit Piping: **12 inches** .
  3. Drain Piping: **12 inches** .
  4. Sleeves: 18 inches

3.2 PREPARATION

- A. Set stakes to identify locations of proposed irrigation system. Obtain Architect's approval before excavation.

3.3 PIPING INSTALLATION

- A. Location and Arrangement: Drawings indicate location and arrangement of piping systems. Install piping as indicated unless deviations are approved on Coordination Drawings.
- B. Install piping at minimum uniform slope of 0.5 percent down toward drain valves.
- C. Install piping free of sags and bends.
- D. Install groups of pipes parallel to each other, spaced to permit valve servicing.
- E. Install fittings for changes in direction and branch connections.
- F. Install unions adjacent to valves and to final connections to other components with **NPS 2** or smaller pipe connection.
- G. Install flanges adjacent to valves and to final connections to other components with **NPS 2-1/2** or larger pipe connection.
- H. Install underground thermoplastic piping according to ASTM D 2774.

- I. Install expansion loops in control-valve boxes for plastic piping.
- J. Lay piping on solid subbase, uniformly sloped without humps or depressions.
- K. Install ductile-iron piping according to AWWA C600.
- L. Install PVC piping in dry weather when temperature is above **40 deg F** . Allow joints to cure at least 24 hours at temperatures above **40 deg F** before testing.
- M. Install water regulators with shutoff valve and strainer on inlet and pressure gage on outlet. Install shutoff valve on outlet. Install aboveground or in control-valve boxes.
- N. Water Hammer Arresters: Install between connection to building main and circuit valves aboveground or in control-valve boxes.
- O. Install piping in sleeves under parking lots, roadways, and sidewalks.
- P. Install sleeves made of Schedule 40 PVC pipe and socket fittings, and solvent-cemented joints.
- Q. Install transition fittings for plastic-to-metal pipe connections according to the following:
  - 1. Underground Piping:
    - a. **NPS 1-1/2** and Smaller: Plastic-to-metal transition fittings.
    - b. **NPS 2** and Larger: AWWA transition couplings.
  - 2. Aboveground Piping:
    - a. **NPS 2** and Smaller: Plastic-to-metal transition fittings .
    - b. **NPS 2** and Larger: Use dielectric flange kits with one plastic flange.

### 3.4 JOINT CONSTRUCTION

- A. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.
- B. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.
- C. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:
  - 1. Apply appropriate tape or thread compound to external pipe threads unless dry seal threading is specified.
  - 2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.
- D. Flanged Joints: Select rubber gasket material, size, type, and thickness for service application. Install gasket concentrically positioned. Use suitable lubricants on bolt threads.
- E. Ductile-Iron Piping Gasketed Joints: Comply with AWWA C600 and AWWA M41.

- F. Copper-Tubing Brazed Joints: Construct joints according to CDA's "Copper Tube Handbook," using copper-phosphorus brazing filler metal.
- G. Copper-Tubing Soldered Joints: Apply ASTM B 813 water-flushable flux to tube end unless otherwise indicated. Construct joints according to ASTM B 828 or CDA's "Copper Tube Handbook," using lead-free solder alloy (0.20 percent maximum lead content) complying with ASTM B 32.
- H. PE Piping Fastener Joints: Join with insert fittings and bands or fasteners according to piping manufacturer's written instructions.
- I. PE Piping Heat-Fusion Joints: Clean and dry joining surfaces by wiping with clean cloth or paper towels. Join according to ASTM D 2657.
  - 1. Plain-End PE Pipe and Fittings: Use butt fusion.
  - 2. Plain-End PE Pipe and Socket Fittings: Use socket fusion.
- J. PVC Piping Solvent-Cemented Joints: Clean and dry joining surfaces. Join pipe and fittings according to the following:
  - 1. Comply with ASTM F 402 for safe-handling practice of cleaners, primers, and solvent cements.
  - 2. PVC Pressure Piping: Join schedule number, ASTM D 1785, PVC pipe and PVC socket fittings according to ASTM D 2672. Join other-than-schedule-number PVC pipe and socket fittings according to ASTM D 2855.
  - 3. PVC Nonpressure Piping: Join according to ASTM D 2855.

### 3.5 VALVE INSTALLATION

- A. Underground Curb Valves: Install in curb-valve casings with tops flush with grade.
- B. Underground Iron Gate Valves, Resilient Seat: Comply with AWWA C600 and AWWA M44. Install in valve casing with top flush with grade.
  - 1. Install valves and PVC pipe with restrained, gasketed joints.
- C. Aboveground Valves: Install as components of connected piping system.
- D. Pressure-Reducing Valves: Install in boxes for automatic control valves or aboveground between shutoff valves.
- E. Throttling Valves: Install in underground piping in boxes for automatic control valves.
- F. Drain Valves: Install in underground piping in boxes for automatic control valves.

### 3.6 SPRINKLER INSTALLATION

- A. Install sprinklers after hydrostatic test is completed.
- B. Install sprinklers at manufacturer's recommended heights.

- C. Locate part-circle sprinklers to maintain a minimum distance of **4 inches** from walls and **2 inches** from other boundaries unless otherwise indicated.

### 3.7 DRIP IRRIGATION SPECIALTY INSTALLATION

- A. Install freestanding emitters on pipe riser to mounting height indicated.
- B. Install manifold emitter systems with tubing to emitters. Plug unused manifold outlets. Install emitters on off-ground supports at height indicated.
- C. Install multiple-outlet emitter systems with tubing to outlets. Plug unused emitter outlets. Install outlets on off-ground supports at height indicated.
- D. Install drip tubes with direct-attached emitters on ground.
- E. Install drip tubes with remote-discharge on ground with outlets on off-ground supports at height indicated.
- F. Install off-ground supports of length required for indicated mounted height of device.
- G. Install application pressure regulators and filter units in piping near device being protected, and in control-valve boxes.
- H. Install air relief valves and vacuum relief valves in piping, and in control-valve boxes.

### 3.8 AUTOMATIC IRRIGATION-CONTROL SYSTEM INSTALLATION

- A. Equipment Mounting: Install interior controllers on wall.
  - 1. Place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
  - 2. Install anchor bolts to elevations required for proper attachment to supported equipment.
- B. Equipment Mounting: Install exterior freestanding controllers on precast concrete bases.
  - 1. Place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
  - 2. Install anchor bolts to elevations required for proper attachment to supported equipment.
- C. Install control cable in same trench as irrigation piping and at least **2 inches** below or beside piping. Provide conductors of size not smaller than recommended by controller manufacturer. Install cable in separate sleeve under paved areas.

### 3.9 CONNECTIONS

- A. Comply with requirements for piping specified in Section 221113 "Facility Water Distribution Piping" for water supply from exterior water service piping, water meters, protective enclosures, and backflow preventers. Drawings indicate general arrangement of piping, fittings, and specialties.

- B. Install piping adjacent to equipment, valves, and devices to allow service and maintenance.
- C. Connect wiring between controllers and automatic control valves.

### 3.10 IDENTIFICATION

- A. Identify system components. Comply with requirements for identification specified in Section 220553 "Identification for Plumbing Piping and Equipment."
- B. Equipment Nameplates and Signs: Install engraved plastic-laminate equipment nameplates and signs on each automatic controller.
  - 1. Text: In addition to identifying unit, distinguish between multiple units, inform operator of operational requirements, indicate safety and emergency precautions, and warn of hazards and improper operations.
- C. Warning Tapes: Arrange for installation of continuous, underground, detectable warning tapes over underground piping during backfilling of trenches. See Section 312000 "Earth Moving" for warning tapes.

### 3.11 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
  - 1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- B. Tests and Inspections:
  - 1. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
  - 2. Operational Test: After electrical circuitry has been energized, operate controllers and automatic control valves to confirm proper system operation.
  - 3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- C. Any irrigation product will be considered defective if it does not pass tests and inspections.
- D. Prepare test and inspection reports.

### 3.12 STARTUP SERVICE and WINERIZATION

- A. Perform startup service.
  - 1. Complete installation and startup checks according to manufacturer's written instructions.
  - 2. Verify that controllers are installed and connected according to the Contract Documents.
  - 3. Verify that electrical wiring installation complies with manufacturer's submittal.

B. Perform winterization Service

1. Complete (1) system shut-down with training

3.13 ADJUSTING

- A. Adjust settings of controllers.
- B. Adjust automatic control valves to provide flow rate at rated operating pressure required for each sprinkler circuit.
- C. Adjust sprinklers and devices, except those intended to be mounted aboveground, so they will be flush with, or not more than 1/4 inch above, finish grade.

3.14 CLEANING

- A. Flush dirt and debris from piping before installing sprinklers and other devices.

3.15 DEMONSTRATION

- A. Train Owner's maintenance personnel to adjust, operate, and maintain automatic control valves and controllers.

3.16 PIPING SCHEDULE

- A. Install components having pressure rating equal to or greater than system operating pressure.
- B. Piping in control-valve boxes and aboveground may be joined with flanges or unions instead of joints indicated.
- C. Underground irrigation main piping, 3 inch to 2-1/2 inch, shall be the following:
  1. Schedule 40, PVC Gasket Joint pipe and socket fittings
- D. Circuit piping, 1 inch to 2 inch, shall be one of the following:
  1. , PE, controlled ID pipe; insert fittings for PE pipe; and fastener joints.
  2. , PE, controlled OD pipe; PE butt, heat-fusion, or PE socket-type fittings; and heat-fusion joints.
  3. Schedule 40, PVC pipe and socket fittings; and solvent-cemented joints.
  4. SDR 26, PVC, pressure-rated pipe; Schedule 40, PVC socket fittings; and solvent-cemented joints.
- E. Underground Branches and Offsets at Sprinklers and Devices: Schedule 80, PVC pipe; threaded PVC fittings; and threaded joints.
  1. Option: Plastic swing-joint assemblies, with offsets for flexible joints, manufactured for this application.

- F. Risers to Aboveground Sprinklers and Specialties: hard copper tube, wrought-copper fittings, and soldered joints.
- G. Risers to Aboveground Sprinklers and Specialties: Schedule 80, PVC pipe and socket fittings; and solvent-cemented joints.
- H. Drain piping shall be one of the following:
  - 1. SDR 21, 26, or 32.5, PVC, pressure-rated pipe; Schedule 40, PVC socket fittings; and solvent-cemented joints.

### 3.17 VALVE SCHEDULE

- A. Underground, Shutoff-Duty Valves: Use the following:
  - 1. **NPS 2** and Smaller: Curb valve, curb-valve casing, and shutoff rod.
  - 2. **NPS 3** and Larger: Iron gate valve, resilient seated; iron gate valve casing; and operating wrench(es).
- B. Drain Valves:
  - 1. **NPS 1/2 and NPS 3/4** : Plastic ball valve.
  - 2. **NPS 1 to NPS 2** : Plastic ball valve.

END OF SECTION 328400



## SECTION 329113 - SOIL PREPARATION

### PART 1 - GENERAL

#### 1.1 1.1 DESCRIPTION OF WORK

- A. Provide all materials, equipment and labor necessary to complete the work as indicated on the drawings or as specified herein.
- B. The principal work of this section includes, but may not be limited to, the following:
  - 1. Grading and Spreading Loam.
  - 2. Preparations of Areas for Seeding.

#### 1.2 RELATED DOCUMENTS

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

#### 1.3 SUMMARY

- A. Related Requirements:
  - 1. Section 311000 "Site Clearing" for topsoil stripping and stockpiling.
  - 2. Section 329200 "Turf and Grasses" for placing planting soil for turf and grasses.

#### 1.4 DEFINITIONS

- A. AAPFCO: Association of American Plant Food Control Officials.
- B. Backfill: The earth used to replace or the act of replacing earth in an excavation. This can be amended or unamended soil as indicated.
- C. CEC: Cation exchange capacity.
- D. 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.
- E. Duff Layer: A surface layer of soil, typical of forested areas, that is composed of mostly decayed leaves, twigs, and detritus.
- F. Imported Soil: Soil that is transported to Project site for use.



- G. Layered Soil Assembly: A designed series of planting soils, layered on each other, that together produce an environment for plant growth.
  - H. Manufactured Soil: Soil produced by blending soils, sand, stabilized organic soil amendments, and other materials to produce planting soil.
  - I. NAPT: North American Proficiency Testing Program. An SSSA program to assist soil-, plant-, and water-testing laboratories through interlaboratory sample exchanges and statistical evaluation of analytical data.
  - J. 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."
  - K. 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.
  - L. RCRA Metals: Hazardous metals identified by the EPA under the Resource Conservation and Recovery Act.
  - M. SSSA: Soil Science Society of America.
  - N. 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.
  - O. 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.
  - P. 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.
  - Q. USCC: U.S. Composting Council.
- 1.5 PRE-CONSTRUCTION MEETING
- A. Preconstruction Meeting: Conduct conference at Project site .
- 1.6 ACTION SUBMITTALS
- A. Certified analysis and source of off-site loam to be provided. Certification shall list soil additives to loam including rates and type.
  - B. 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.



- C. Samples: For each bulk-supplied material, 1-quart volume of each in sealed containers labeled with content, source, and date obtained. Each Sample shall be typical of the lot of material to be furnished; provide an accurate representation of composition, color, and texture.

#### 1.7 QUALITY ASSURANCE

- A. Contractor shall specialize in work outlined with a minimum of five (5) years experience on similar projects.
- B. Do not make substitutions without written approval. If specified materials are not available, obtain approval for substitution from the Owner's Representative.

#### 1.8 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.

### PART 2 - PRODUCTS

#### 2.1 CLEAN SCREENED LOAM

- A. Loam shall consist of screened fertile, loose, friable fine sandy loam or sandy loam free of subsoil, refuse, stumps, roots, rocks, cobbles, stones, brush, noxious weeds, litter and other materials which are larger than one inch (1") in any dimension and which will prevent healthy plant growth. Organic matter shall constitute not less than five percent (5%) nor more than twenty percent (20%) as determined by wet combustion method (Chromic acid reduction). The Contractor shall notify the Owner or Owner's Representative of the intended source of loam to be employed at least two (2) weeks prior to the intended time of use to allow time for sampling.
- B. Loam shall possess good filtration and permeability rates, and shall possess a mechanical analysis where: N 85% of sand size is 0.5 to 1.0 mm and N 95% of sand mix is between 0.5 and 2.0 mm and no more than 5% of mix is less than 0.5 mm.
- C. Acidity range of approximately pH 5.5 to 7.5 when tested according to methods of testing or A.O.A.C. and organic content not less than 5% nor more than 20% as determined by wet combustion method (Chromic acid reduction).



## 2.2 LIMESTONE

- A. Dolomitic limestone contain up to 50% magnesium carbonate in a dry, granular form. Limestone shall be ground to such a fineness that at least 50% will pass through a 100-mesh sieve and 90% to 100% will pass through a 20-mesh sieve.

## 2.3 JUTE MESH

- A. Where indicated on the Plans, Jute mesh shall be uniform, open, plain weave of undyed and unbleached single jute yarn, a minimum of four (4) feet in width plus or minus one (1) inch. There shall be 78 warp ends per width and 41 weft ends per yard. Weight shall average 1.22 pounds per linear yard, plus or minus 5%.
- B. Staples for Erosion Control Materials: 9 gauge staples shall be used with jute mesh: 11 gauge with woven paper.

## 2.4 WATER

- A. Clean, fresh, potable water.

## PART 3 - EXECUTION

### 3.1 GRADING AND SPREADING LOAM

- A. Remove all debris and other inorganic materials on any prepared subgrades, and reshape and dress any damaged or eroded slopes, swales, and other areas. Scarify and loosen subgrade to a friable condition in any areas where compaction may have occurred. Loam shall not be placed until subgrade is in suitable condition and free of excessive moisture or frozen materials.
- B. Loam shall be spread as required on all disturbed and bare areas to produce an even depth as shown on the Plans. Fill all depressions in existing grades with suitable fill material as specified in Section 312000 prior to spreading loam, then shape and finish grade to depth of loam required.
- C. Area shall be progressively fine graded and machine and hand raked, with loam added as required to correct depressions and other irregularities, to produce smooth and unbroken finish grades and the depth of loam required.
- D. Drawings show grading design intent to achieve a uniform grade not less than 1.25% slope. Finish grades shall conform to lines, grades, sections, and shapes of lawn areas as required. Final grade shall provide positive drainage across all grassed lawn and field areas. Provide smooth, uniform, smooth transitions at all changes and break in grade. Loam is to be held to a consistent depth of 1/2" below adjacent pavements surfaces.
- E. Starter fertilizers: All required materials shall be spread and distributed into the soil at rates and amounts specified herein.



- F. After establishment of finish grade, entire area shall be hand raked and rolled using a light roller.

### 3.2 PREPARATION OF AREAS FOR SEEDING

- A. GENERAL DESCRIPTION: This work shall consist of the preparation of the seed bed. Work shall be done as described herein:
  - 1. Areas shall be finely raked to a finished grade. Substantially, all sticks, litter, wire, weeds, cable or stones larger than one (1") inch in greater dimension shall be removed and disposed of as directed.
  - 2. Where the soil has become compacted, prior to fine raking, areas to be seeded shall be scarified by discing, yolk raking, or other approved method to a minimum depth of three (3) inches.
  - 3. No seeding will be permitted on areas where the seed bed has not been properly prepared or where the soil is compacted.
  - 4. Request inspection of the work for approval before proceeding with seeding operations.

### 3.3 APPLICATION OF LIMESTONE

- A. When applied dry, limestone shall be spread evenly and incorporated thoroughly into the soil by discing or other approved means.
- B. When applied hydraulically, no discing will be necessary.
- C. Granular treatment to be applied at the rate of 25 to 50 lbs. per 1,000 square feet or as required by soil pH test to produce a pH of 6.0 to 6.5.

### 3.4 APPLICATION OF STARTER AND MAINTENANCE FERTILIZER

- A. One application of turf maintenance fertilizer will be required before final acceptance of seeded areas.
- B. Fertilizer shall be Organic-based and be OMRI (Organic Materials Review Institute) Certified
- C. Application Rate: Apply 2-3 pounds per 100 square feet.
- D. Fertilizer shall be applied at a time, which shall be requested in writing by the Contractor, and approved in writing by the Owner's representative.

### 3.5 APPLYING JUTE MESH

- A. Apply jute mesh loosely but smoothly to fit the contour of the finished grade, parallel to and in same direction as the flow of water. The up-slope end of the each separate strip or piece of jute mesh shall be buried in a six (6) inch minimum vertical anchor slot of junction slot with the soil tamped firmly against the mesh. Where more than one width of material is required, edges shall overlap a minimum of twelve (12) inches, and the up-slope section of mesh will be on top.



Down-hill ends of the jute mesh shall be folded under approximately four (4) inches and stapled in place. Staples will be inserted through the mesh along edges, overlaps, and in the center of all jute mesh strips at intervals not greater than three (3) feet. All anchor slots, junction slots, check slots, and terminal folds shall have five (5) staples spaced not more than nine (9) inches on center across widths.

- B. On seeded banks, jute shall be applied immediately after seeding. On shrub banks, apply jute after finish grading. Cut openings in mesh for each plant and plant and mulch as specified.

### 3.6 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.

### 3.7 PREPARATION OF UNAMENDED, ON-SITE SOIL BEFORE AMENDING

- A. Excavation: Excavate soil from designated area(s) to a depth of 12 inches and stockpile until amended.
- B. Unacceptable Materials: Clean soil of concrete slurry, concrete layers or chunks, cement, plaster, building debris, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, acid, and other extraneous materials that are harmful to plant growth.
- C. Unsuitable Materials: Clean soil to contain a maximum of 8 percent by dry weight of stones, roots, plants, sod, clay lumps, and pockets of coarse sand.
- D. Screening: Pass unamended soil through a 2-inch 3-inch sieve to remove large materials.

### 3.8 PROTECTION

- A. 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. Excavation or other digging unless otherwise indicated.
- B. 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.



3.9 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 329200 - TURF AND GRASSES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Seeding.
  - 2. Hydroseeding.
  - 3. Sodding.

#### 1.3 DEFINITIONS

- A. Finish Grade: Elevation of finished surface of planting soil.
- B. 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.
- C. 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.
- D. 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 Conference: Conduct conference 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.



1. Certification of each seed mixture for turf grass . Include identification of source and name and telephone number of supplier.

B. Product Certificates: For fertilizers, from manufacturer.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws, as applicable.

B. Bulk Materials:

1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
2. Provide erosion-control measures to prevent erosion or displacement of bulk materials; discharge of soil-bearing water runoff; and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
3. Accompany each delivery of bulk materials with appropriate certificates.

#### 1.7 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 1 - May 31 .
2. Fall Planting: August 15- October 15 .

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

### PART 2 - PRODUCTS

#### 2.1 SEED

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: State-certified seed of grass species as listed below for solar exposure.
2. Seed mix for all areas shall conform to Rhode Island State Park Mix with the following grass types and percentages:
  - a. 70% Creeping Red Fescue



- b. 15% Kentucky Blue grass
- c. 15 % perennial ryegrass (*Lolium perenne*).

## 2.2 FERTILIZERS

- A. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:
  - 1. Composition: 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.
  - 2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

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

### 3.2 PREPARATION

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



### 3.3 TURF AREA PREPARATION

- A. Placing Planting Soil: Place and mix planting soil in place over exposed subgrade Blend planting soil in place .
- B. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- C. Before planting, obtain Owner representative's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

### 3.4 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 **3 to 4 lb/1000 sq. ft.** .
- C. Rake seed lightly into top **1/8 inch** of soil, roll lightly, and water with fine spray.
- D. Protect seeded areas from hot, dry weather or drying winds by applying compost mulch within 24 hours after completing seeding operations. Soak areas, scatter mulch uniformly to a thickness of **3/16 inch** , and roll surface smooth.

### 3.5 HYDROSEEDING

- A. Hydroseeding: Mix specified seed, slow-release 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 nonasphaltic 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.

### 3.6 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 specified seed mix to a height of **1-1/2 to 2 inches** .

### 3.7 SATISFACTORY TURF

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

### 3.8 CLEANUP AND PROTECTION

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



END OF SECTION 329200



## SECTION 329223 - SODDING

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Preparation of subsoil.
2. Placement of topsoil.
3. Sod installation.

B. Related Requirements:

1. Section 329119 - Landscape Grading: Preparation of subsoil and placement of topsoil in preparation for Work of this Section.
2. Section 329219 - Seeding: Seeding and soil supplements.

#### 1.2 DEFINITIONS

A. Weeds: Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

B. Weeds: Vegetative species other than specified species to be established in given area.

#### 1.3 REFERENCE STANDARDS

A. ASTM International:

1. ASTM C602 - Standard Specification for Agricultural Liming Materials.

B. Turfgrass Producers International:

1. TPI - Guideline Specifications To Turfgrass Sodding.

#### 1.4 COORDINATION

A. Coordinate Work of this Section with installation of underground sprinkler system piping and watering heads.



### 1.5 SUBMITTALS

- A. Product Data:
  - 1. Submit sod producer's information for sod grass species.
- B. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- C. Sod Producer's Certificate: Certify that sod grass meets or exceeds specified requirements.

### 1.6 QUALITY ASSURANCE

- A. Sod: Ensure root development capable of supporting its own weight without tearing when suspended vertically by holding upper two corners.

### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Delivery:
  - 1. Deliver sod on pallets .
  - 2. Do not deliver more sod than can be laid within 24 hours.
- B. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.
- C. Store materials according to manufacturer instructions.
- D. Protection:
  - 1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
  - 2. Protect exposed roots from dehydration.
  - 3. Provide additional protection according to manufacturer instructions.

### 1.8 AMBIENT CONDITIONS

- A. Minimum Conditions: Do not place sod when temperature is lower than 32 deg. F [zero] <\_\_\_\_\_>.

## PART 2 - PRODUCTS

### 2.1 SOD

- A. Sod Growers:
  - 1. Furnish materials according to standards.



B. Description:

1. Cultivated grass sod with strong fibrous root system, free of stones and burned or bare spots.
2. Grade: TPI recognized TPI certified .

2.2 MATERIALS

A. Topsoil:

1. As specified in Section 320513 - Soils for Exterior Improvements.
2. Type: S4 .

B. Topsoil:

1. Description: Fertile, agricultural soil typical for locality, capable of sustaining vigorous plant growth, and taken from drained Site.
2. Free of subsoil, clay, impurities, plants, weeds, and roots.
3. pH:
  - a. Minimum: 5.4 .
  - b. Maximum: 7.0 .

C. Topsoil: Excavated from Site and free of weeds.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that prepared soil base is ready to receive Work of this Section.

3.2 INSTALLATION

A. Subsoil Preparation:

1. Eliminate uneven areas and low spots.
2. Maintain indicated lines, levels, profiles, and contours.
3. Slopes:
  - a. Make gradual changes in grade.
  - b. Blend slopes into level areas.
4. Foreign Materials:
  - a. Remove foreign materials and undesirable plants and their roots.
  - b. Do not bury foreign materials beneath areas to be sodded.
5. Remove contaminated subsoil.
6. Scarify subsoil to depth of 6 inches [100] < \_\_\_\_\_ > where topsoil is to be placed.
7. Repeat cultivation in areas where equipment used for hauling and spreading topsoil has compacted subsoil.



B. Placing of Topsoil:

1. Spread topsoil to minimum depth of 6 inches [75] <\_\_\_\_\_> over area to be sodded.
2. Place topsoil during dry weather and on dry unfrozen subgrade.
3. Remove vegetable matter and foreign nonorganic material from topsoil while spreading.
4. Grade topsoil to eliminate rough, low, or soft areas, and to ensure positive drainage.
5. Install edging at periphery of sodded areas in straight lines to consistent depth.

C. Laying of Sod:

1. Moisten prepared surface immediately prior to laying sod.
2. Lay sod within 24 hours after harvesting to prevent deterioration.
3. Joints:
  - a. Lay sod tightly with no open joints visible and no overlapping.
  - b. Stagger end joints minimum 12 inches.
  - c. Do not stretch or overlap sod pieces.
4. Lay smooth and align with adjoining grass areas.
5. Place top elevation of sod 1/2 inch [13] <\_\_\_\_\_> below adjoining edging clay infield.
6. Watering:
  - a. Water sodded areas immediately after installation.
  - b. Saturate sod to 6 inches [100] <\_\_\_\_\_> of soil.
7. Rolling:
  - a. After sod and soil have dried, roll sodded areas to bond sod to soil and to remove minor depressions and irregularities.
  - b. Roll before first watering.

END OF SECTION 329223