



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

# REQUEST FOR PROPOSALS

**Item Description:** WOONASQUATUCKET ADVENTURE PARK PHASE II IMPROVEMENTS

**Procurement/MinuteTraq #:** 41007

**Date to be opened:** 6/20/2023

**Issuing Department:** Parks Department

## QUESTIONS

- Please direct questions related to the bidding process, how to fill out forms, and how to submit a bid (Pages 1-8) to the Purchasing Department.
  - Email: [purchasing@providenceri.gov](mailto:purchasing@providenceri.gov)
    - Please use the subject line “**Solicitation Question**”
- Please direct questions relative to the Minority and Women’s Business Enterprise Program and the corresponding forms (Pages 9-13) to the MBE/WBE Outreach Director for the City of Providence, Grace Diaz
  - 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:
  - Name: Sam Greenwood
  - Title: Landscape Architect
  - Email Address: [sgreenwood@providenceri.gov](mailto:sgreenwood@providenceri.gov)

## Pre-bid Conference

There will be a Non-Mandatory Pre-Bid Conference

Date of Pre-Bid Conference: 6/7/2023

Time: 11:00AM

Other details: Meeting will be held at the proposed Barbara St entrance, corner of Barbara St & Ponagansett Ave.



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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 Conference Room 305, on the 3<sup>rd</sup> floor of City Hall.

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

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

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

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

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



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**BID PACKAGE CHECKLIST**

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

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

- Bid Form 1: Bidder's Blank as the cover page/ 1<sup>st</sup> page (*see page 6 of this document*)
- Bid Form 2: Certification of Bidder as 2<sup>nd</sup> page (*see page 7 of this document*)
- Bid Form 3: Certificate Regarding Public Records (*see page 8 of this document*)
- Bid Form 4: Affidavit of City Vendor (*see pages 9 and 10 of this document*)
- Forms from the Minority and Women Business Enterprise Program: Based on Bidder Category. *See forms and instructions enclosed (pages 11-15) or on:*  
<https://www.providenceri.gov/purchasing/minority-women-owned-business-mbewbe-procurement-program/>

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

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

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

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



**BOARD OF CONTRACT AND SUPPLY  
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**NOTICE TO VENDORS**

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



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**BID TERMS**

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

**The following entry applies only for COMMODITY BID TERMS:**

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

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

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



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**BID FORM 1: Bidders Blank**

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

**Name of Bidder (Firm or Individual):** \_\_\_\_\_

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

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

Business Phone #: \_\_\_\_\_

Contact Email Address: \_\_\_\_\_

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

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

Delivery Date (if applicable): \_\_\_\_\_

Name of Surety Company (if applicable): \_\_\_\_\_

Total Amount in Writing\*: \_\_\_\_\_

Total Amount in Figures\*: \_\_\_\_\_

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

***Use additional pages if necessary for additional bidding details.***

\_\_\_\_\_  
Signature of Representation

\_\_\_\_\_  
Title



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

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

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

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

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

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

\_\_\_\_\_  
Signature of Representation

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



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**BID FORM 3: Certificate Regarding Public Records**

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

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

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

understanding that:

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

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

this \_\_\_\_\_ day of \_\_\_\_\_ 20 \_\_\_\_\_.

\_\_\_\_\_  
Signature of Representation

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





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

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

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

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

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

Position in the “Business” \_\_\_\_\_

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

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

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

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

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

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

a. Members of the Providence City Council?  Yes  No

- If Yes, please complete the following:

Recipient(s) of the Contribution:

Contribution Date(s):

Contribution Amount(s):

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

- If Yes, please complete the following:

Recipient(s) of the Contribution:

Contribution Date(s):

Contribution Amount(s):



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c. The Mayor of Providence?  Yes  No

- If Yes, please complete the following:  
 Recipient(s) of the Contribution:  
 Contribution Date(s):

Contribution Amount(s):

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

- If Yes, please complete the following:  
 Recipient(s) of the Contribution:  
 Contribution Date(s):

Contribution Amount(s):

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

\_\_\_\_\_  
Position



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**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 37-14, 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: <https://dedi.ri.gov/divisions-units/minority-business-enterprise-compliance-office>

**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:**

1. ***All Bidders:*** All bidders **must complete and submit the *MBE/WBE Participation Affidavit (page 13)*** 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.**
2. ***Bidders who will be subcontracting:*** ***In addition to the MBE/WBE Participation Affidavit,*** Bidders who will be subcontracting must submit the ***Subcontractor Disclosure Form*** as part of their bid submission. All subcontractors, regardless of MBE/WBE status, must be listed on this form. Business NAICS codes can be found at <https://www.naics.com/search/>. Awarded bidders are required to submit ***Subcontractor Utilization and Payment Reports*** with each invoice.
3. **Waiver Requests:**
  - a) If the percentage of the total amount of the bid being awarded to MBE or WBE vendors is less than 20% (Box F on the Subcontractor Disclosure Form) and the prime contractor is not a Rhode Island State-certified MBE or WBE, the Bidder must complete the ***MBE/WBE Waiver Request Form (page 14)*** and obtain approvals prior to bid submission.
  - b) If the prime contractor company has the capacity to perform the whole project, the City of Providence requires the contractor to complete the ***MBE/WBE Waiver Request Form (page 14)*** and obtain approvals prior to bid submission.
  - c) If the contractor is a nonprofit organization, they are not required to complete the ***MBE/WBE Waiver Request Form***. However, the City of Providence requires the nonprofit organization to provide the ***MBE/WBE Participation Affidavit Form*** and proof of its nonprofit status.
  - d) If the contractor has researched the RI Certified minority list (<https://dedi.ri.gov/divisions-units/minority-business-enterprise-compliance-office/minority-business-enterprise-mbe>) and the state does not have any companies in the desired trade, the contractor must complete the ***MBE/WBE Waiver Request Form (page 14)*** and obtain approvals prior to bid submission.
  - e) Waivers will be considered for approval on a case-by-case basis.



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**Verifying MBE/WBE Certification**

It is the responsibility of the bidder to confirm that every MBE or 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 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 request for final payment. A copy of all forms should be sent to the MBE/WBE Outreach Director Office, Grace Diaz at [gdiaz@providenceri.gov](mailto:gdiaz@providenceri.gov). This form is not submitted as a part of the initial bid package.

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

**Questions?**

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



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**MBE/WBE PARTICIPATION AFFIDAVIT**

Project /Item Description (as seen on RFP):

\_\_\_\_\_  
Prime Bidder: \_\_\_\_\_ Contact Email and Phone \_\_\_\_\_  
Company Name, Address and Trade: \_\_\_\_\_  
\_\_\_\_\_

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

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

It is the policy of the City of Providence that minority business enterprises (MBEs) and women business enterprises (WBEs) should have the maximum opportunity to participate in procurements and projects as prime contractors and vendors. Pursuant to [Sec. 21-52](#) of the Providence Code of Ordinances and [Chapter 37-14 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
Click or tap here to enter text.					\$
Click or tap here to enter text.					\$
Click or tap here to enter text.					\$
Click or tap here to enter text.					\$
Click or tap here to enter text.					\$
Click or tap here to enter text.					\$
<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, C, &amp; D):</b>					\$
<b>F. PERCENTAGE OF BID SUBCONTRACTED TO MBEs AND WBEs. (Divide the sum of A and B by E 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 \_\_\_\_\_ Required

\_\_\_\_\_  
Signature of Bidder

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



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**MBE/WBE Waiver Request Form**

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

Submit this form to the City of Providence MBE/WBE Outreach Director, Grace Diaz, at [gdiaz@providenceri.gov](mailto:gdiaz@providenceri.gov), for review **prior to bid submission**. This waiver applies only to the current bid which you are submitting to the City of Providence and does not apply to other bids your company may submit in the future. **In case a waiver is needed, City Department Directors should not recommend a bidder for an award if this form is not included, absent or is not signed by the city of Providence MBE/WBE director.**

Prime Bidder: \_\_\_\_\_ Contact Email and Phone \_\_\_\_\_  
Company Name, Address: \_\_\_\_\_ Trade \_\_\_\_\_  
Project /Item Description (as seen on RFP): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

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

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

\_\_\_\_\_  
Signature of Prime Contractor /  
or Duly Authorized Representative

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

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

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

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

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



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

## **BID PACKAGE SPECIFICATIONS**

### **Project Description:**

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

### **Definitions:**

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

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

- Barbara St Entrance
  - Sawcut, then R&D Concrete & Asphalt Sidewalk
  - R&D Chain Link Fence & Gates
  - R&D All Asphalt Paving
  - Clear & Grub Ex. Vegetation
  - Re-grade slope for ADA accessibility
  - F&I Concrete Entry Ramp w/ Steel Handrails
  - F&I 3" Asphalt Sidewalk & Path
  - F&I Concrete Pads (Plaza, Pads for Conex Box, Picnic Table & Bike Rack)
  - F&I Electric Service, Cabinet, & Site Lighting
  - Deliver & Install Half Moon Steel Trellis
  - F&I Ipe Picnic Tables
  - F&I Skateable Features (Benches & Rail)
  - F&I Bio-Retention Basin
  - F&I 4' H Black Vinyl Chain Link Fence w/ Gate
  - F&I Wooden Guardrail & Steel Bollard at Entrance
  - F&I Trees per plan, loam & hydroseed lawn areas
  
- Lower Area
  - Remove & Stockpile All Existing Planting Within Limit of Disturbance
  - F&I Tree Protection Fencing on Trees to Remain
  - Remove & Stockpile Cap & Contaminated Soil per Soil Management Plan
  - Sawcut, R&D Ex. Concrete Paving
  - F&I Shotcrete Mini-Ramp w/ Spine on Concrete Foundation
  - F&I Safety Railings & Handrails
  - Create Berm with Contaminated Soils & Install Cap from Stockpiled Material
  - F&I Ipe Benches on Concrete Pads
  - F&I Planting to Stabilize Berm in 3:1 Slope Areas
  - Transplant Ex. Stockpiled Trees & Shrubs
  - Hydroseed Remaining Area of Berm & All Disturbed Areas

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.





**BOARD OF CONTRACT AND SUPPLY  
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All Work Included in this Project Shall be Completed for the lump sum of:

Dollars

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

**ALLOWANCE: \$20,000.00**

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

**ADD/ALTERNATES:**

1. Add Alt #1 – Furnish & Install Rain Garden Enhanced Planting - Per Lump Sum

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

2. Add Alt #2 – Furnish & Install Concrete Sidewalk at Barbara St - Per Lump Sum

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

3. Add Alt #3 – Furnish & Install Free-Standing Concrete Quarter Pipe - Per Lump Sum

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

4. Add Alt #4 – Furnish & Install Dumor 6’ Ipe Picnic Table (#67-079-6) on Concrete Pad - Per Lump Sum

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

5. Add Alt #5 – Furnish & Install 20’ ‘Conex’ Storage Container- Per Lump Sum

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

6. Add Alt #6 – Furnish & Install Poligon Rectangular Steel Trellis - Per Lump Sum

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

7. Add Alt #7 – Upgrade Black Vinyl Chain Link to 4’ H Welded Wire Mesh Fence & Gate- Per Lump Sum

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

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



**BOARD OF CONTRACT AND SUPPLY  
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**UNIT PRICES – BASE BID:**

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

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

**2. F&I Straw Wattle Erosion Control, complete – Per Linear Foot**

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

**3. Sawcut Existing Asphalt/Concrete Walks/Pads – Per Linear Foot**

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

**4. R&D Asphalt Paving – Per Square Yard**

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

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

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

**6. R&D Chain Link Fence & Gates – Per Linear Foot**

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

**7. Excavate & Stockpile 4” Topsoil from Existing Cap. – Per Cubic Yard**

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

**8. Excavate & Stockpile 8” Gravel from Existing Cap. – Per Cubic Yard**

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

**9. Excavate, Stockpile & Cover Contaminated Soil – Per Cubic Yard**

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

**10. Clear & Grub Existing Vegetation – Per Square Yard**

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

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



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

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

**12. F&I Capped Berms from Stockpile Material – Per Cubic Yard**

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

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

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

**14. F&I 4” Poured Concrete Pads/Walks – Per Square Foot**

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

**15. F&I 3” Asphalt Walks – Per Square Yard**

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

**16. F&I RIDOT Std Granite Curbing – Per Linear Foot**

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

**17. F&I Steel Pipe Handrail – Per Linear Foot**

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

**18. F&I Electric Cabinet & Service, complete – Per Lump Sum**

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

**19. Deliver & Install Poligon Half-Moon Steel Trellis – Per Each**

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

**20. F&I DuMor 6’ Ipe Picnic Table (#67-079-6), Surface Mount – Per Each**

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

**21. F&I DuMor 8’ ADA Ipe Picnic Table (#67-079-68-1), Surface Mount – Per Each**

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

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



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**22. F&I Cycle-Safe U/2 Bike Rack (#12700SB) – Per Each**

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

**23. F&I Cary 55 Gal Trash Receptacle w/ Dome Lid (#26BTR5) – Per Each**

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

**24. F&I Precast Concrete Skate Bench – Per Each**

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

**25. F&I LUMEC Road Focus Plus RPS Cobra Head, small on Gardco SRS-CB-20 Pole, complete – Per Each**

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

**26. F&I Bio-Retention Area – Per Lump Sum**

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

**27. F&I 4’ H Black Vinyl Chainlink Fence – Per Linear Foot**

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

**28. F&I 5’W x 4’H Black Vinyl Chainlink Gate– Per Each**

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

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

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

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

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

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

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

**32. Hydroseed all Mowed Areas with Endophyte Enhance Mix – Per Square Foot**

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

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



**BOARD OF CONTRACT AND SUPPLY  
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**33. F&I Seed Mix ERNMX-126 in Bio-Retention Basin, Apply Straw & Tackifier – Per Square Foot**

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

**34. Transplant +/- 3” Cal Katsura Trees (See sheet L1.0) – Per Each**

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

**35. Transplant Shrubs (See sheet L1.0) – Per Each**

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

**36. F&I Gleditsia triacanthos ‘Halka’ – 2.5-3” Cal.– Per Each**

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

**37. F&I Ulmus americana ‘Princeton’ – 2.5-3” Cal.– Per Each**

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

**38. F&I Amelanchier x Grandiflora ‘Autumn Brilliance’ – 2-2.5” Cal.– Per Each**

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

**39. F&I Picea glauca ‘Densata’ – 8-10’ Ht – Per Each**

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

**40. F&I Amelanchier alnifolia ‘Regent’ –#7 Cont.– Per Each**

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

**41. F&I Arcostaphylos uva-ursi –#1 Cont.– Per Each**

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

**42. F&I Aronia melanocarpa –#5 Cont.– Per Each**

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

**43. F&I Clethra alnifolia ‘Hummingbird’–#3 Cont.– Per Each**

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

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



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**44. F&I Cornus sericea ‘Firedance’-#3 Cont.- Per Each**

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

**45. F&I Juniperus virginiana ‘Grey Owl’-#3 Cont.- Per Each**

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

**46. F&I Microbiota decussata ‘Celtic Pride’ -#3 Cont.- Per Each**

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

**47. F&I Rhus aromatica ‘Grow Low’-#3 Cont.- Per Each**

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

**48. F&I Anemone canadensis-#1 Cont.- Per Each**

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

**49. F&I Carex pensylvanica -#1 Cont.- Per Each**

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

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

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



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

**BID DOCUMENTS:**

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

**DRAWINGS (32 TOTAL SHEETS):**

- C-0 COVER
- C-1 CIVIL LEGEND & NOTES
- C-2 EXISTING CONDITIONS
- C-3 DEMOLITION PLAN
- C-4 UPPER AREA GRADING & DRAINAGE PLAN
- C-5 UPPER AREA EROSION & SEDIMENTATION PLAN
- C-6 LOWER AREA GRADING & DRAINAGE PLAN
- C-7 LOWER AREA EROSION & SEDIMENTATION PLAN
- C-8 SOIL MANAGEMENT PLAN
- C-9 CIVIL DETAILS 1
- C-10 CIVIL DETAILS 2
- S-001 GENERAL NOTES
- S-090 FOUNDATION PLAN
- S-100 PLAN & ELEVATIONS
- S-301 SECTIONS
- S-302 SECTIONS
- S-303 SECTIONS
- S-501 DETAILS
- S-502 DETAILS
- S-503 DETAILS
- S-504 DETAILS
- S-900 PERSPECTIVE
- S-901 EXPLODED ISOMETRIC
- L-1.0 LANDSCAPE PREPARATION PLAN
- L-2.0 PLAN ENLARGMENT A
- L-2.1 PLAN ENLARGMENT B
- L-3.0 LANDSCAPE DETAILS
- L-3.1 LANDSCAPE DETAILS
- L-3.2 LANDSCAPE DETAILS
- L-3.3 LANDSCAPE DETAILS
- L-3.4 LANDSCAPE NOTES

**PREVAILING WAGE DECISION**

**COPY OF THE CONTRACT**

**TECHNICAL SPECIFICATION:**



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

- **010000 GENERAL REQUIREMENTS**
- **015639 TEMPORARY TREE AND PLANT PROTECTION**
- **024119 SELECTIVE DEMOLITION**
- **031000 CONCRETE FORMING & ACCESSORIES**
- **032000 CONCRETE REINFORCING**
- **033000 CAST-IN-PLACE CONCRETE**
- **033713 SHOTCRETE**
- **033900 CONCRETE CURING**
- **047200 CAST STONE MASONRY**
- **055000 METAL FABRICATION**
- **055213 PIPE & TUBE RAILINGS**
- **119001 CARGO CONTAINER**
- **260000 ELECTRICAL**
- **265623 AREA LIGHTING**
- **312000 EARTH MOVING**
- **312313 SUBGRADE PREPARATION**
- **312500 EROSION AND SEDIMENTATION CONTROLS**
- **319001 CONSTRUCTION ACCESS**
- **319002 MAINTENANCE & CLEANING OF EROSION & POLLUTION CONTROLS**
- **319003 HAZARDOUS MATERIALS**
- **321216 ASPHALT PAVING**
- **321313 CONCRETE PAVING**
- **321400 UNIT PAVING**
- **323113 CHAINLINK FENCES & GATES**
- **323116.10 ORNAMENTAL WELDED WIRE FENCES & GATES**
- **323300 SITE FURNISHINGS**
- **329119 LANDSCAPE GRADING**
- **329200 TURF AND GRASSES**
- **329300 PLANTS**
- **329600 TRANSPLANTING**
- **334200 STORMWATER CONVEYANCES**
- **334611.23 STORMWATER RETENTION PONDS**
- **347113 VEHICLE BARRIERS**

**ADDITIONAL INFORMATION REQUIRED WITH BID:**

- Qualifications to Perform Work – See Form Below for Information Required
- Minority Participation Forms – 10% MBE / 10 % WBE Goal on this Project
- Addenda (If Any) - Must Be Acknowledged on Bid Form
- Product Information for Items Submitted as ‘Or Equal’ to Specified Materials

**PROVISIONS OF THIS PROJECT:**





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

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

**CLOSE OUT DOCUMENTS:**

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

**QUALIFICATIONS:**

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

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

Questions regarding this bid package shall be submitted via e-mail to Chevell Burgess at [Cburgess@providenceri.gov](mailto:Cburgess@providenceri.gov) and **Sam Greenwood, Landscape Architect, [sgreenwood@providenceri.gov](mailto:sgreenwood@providenceri.gov)** , no later than five (5) working days before the bid opening date.



**BOARD OF CONTRACT AND SUPPLY  
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## **SUPPLEMENTAL INFORMATION**

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

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

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

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

**You must be able to provide:**

- Business Tax ID will be requested after an award is approved by the Board of Contract and Supply.
- Proof of Insurance.
- Certificate of Good Standing with the Rhode Island Secretary of State.
- UEI Number – Registration with SAM.gov for receipt of federal (ARPA, CDBG, etc) Funds
- Registrations can be made at <https://usfcr.com/sam-registration/>



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

**SUPPLEMENTAL BID FORM**

To whom it may concern:

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

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

Herewith in accordance with the instructions to Bidders.

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

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

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

**CERTIFICATION OF NON-SEGREGATED FACILITIES**

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

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



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

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  
CITY OF PROVIDENCE, RHODE ISLAND**

**APPRENTICE REQUIREMENTS**

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

**FIRST SOURCE REQUIREMENTS**

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



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**CITY OF PROVIDENCE STANDARD TERMS & CONDITIONS**

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



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

12. Written notice hereunder shall be deemed to have been duly served if delivered in person to the individual or member of the firm or entity or to an officer of the entity for whom it was intended, or if delivered at or sent by registered or certified mail to the last business address known by the party providing notice.
13. In no event shall the Agreement automatically renew or be extended without a writing signed by the parties.
14. You agree that products produced or resulting from the performance of the Agreement are the sole property of the City and may not be used by you without the express written permission of the City.
15. For any Agreement involving the sharing or exchange of data involving potentially confidential and/or personal information, you shall comply with any and all state and/or federal laws or regulations applicable to confidential and/or personal information you receive from the City, including but not limited to the Rhode Island Identity Theft Protection Act, R.I. Gen. Laws § 11-49.3-1, during the term of the Agreement. You shall implement and maintain appropriate physical, technical, and administrative security measures for the protection of, and to prevent access to, use, or disclosure of, confidential and/or personal information. In the event of a breach of such information, you shall notify the City of such breach immediately, but in no event later than twenty-four (24) hours after discovery of such breach.
16. The Agreement is governed by the laws of the State of Rhode Island. You expressly submit yourself to and agree that any and all actions arising out of, in connection with, or resulting from the performance of the Agreement or relationship between the parties shall occur solely in the venue and jurisdiction of the State of Rhode Island or the federal court located in Rhode Island.
17. The failure of the City to require performance of any provision shall not affect the City's right to require performance at any time thereafter, nor shall a waiver of any breach or default of this Agreement constitute a waiver of any subsequent breach or default or a waiver of the provision itself.
18. If any term or provision of this Agreement, or the application thereof to any person or circumstance shall, in any extent, be invalid or unenforceable, the remainder of this Agreement shall not be affected thereby, and each term and provision shall be valid and enforceable to the fullest extent permitted by law.



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**PREVAILING WAGE**

This project qualifies for prevailing wages per the Prevailing Wages Statute or the Davis Bacon Act (HUD). Certified payrolls will need to be submitted to the owner for all hours worked on site for this project.

The Wage Decision for this project shall be as recorded on the Bid Date and is available on the RI Department of Labor website.

Federal Labor Standards

U.S. Department of Housing & Urban Development

**Applicability**

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

- A.1. (i) Minimum Wages. All laborers and mechanics employed or working up on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project) will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification or work actually performed, without regard to skill, excepts as provided in 29 CFR Part 5.5 (a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFT part 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.
- (ii) (a) Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the 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.
- (b) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of





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

- (c) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)
- (d) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.
- (iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.
- (iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)
2. Withholding. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much that the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract. HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the contractor, disburse such amounts withheld for and on account of the contractor or subcontractor to the respective employees to whom they are due. The comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.
3. (i) Payrolls and basic records. Payrolls and basic record relating thereto shall be maintained by the contractor during the course of the work preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of labor has found under 29 CFR 5.5 (a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonable anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) or the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits ins enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017.)



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- (ii) (a) The contractor shall submit weekly for each in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant, sponsor or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR Part 5.5(a)(3)(i). This information may be submitted in any form desired. Optional Form WH-34 is available for this purpose and may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), Government Printing Office, Washington, Dc 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149.)
- (b) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
- (1) That the payroll for the payroll period contains the information required to be maintained under 20 CFR Part 5.5 (a)(3)(i) and that such information is correct and complete;
- (2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;
- (3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
- (c) The weekly submission of a 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 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



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applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

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

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

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR Part 3, which are incorporated by reference in this contract.
6. Subcontracts. The contractor or subcontractor will insert in any subcontract the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as HUD or its designee may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all contract clauses in 29 CFR Part 5.5
7. Contracts termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor as provided in 29 CFR 5.12
8. Compliance with Davis-Bacon and Related Act Requirements. All ruling and interpretations of the Davis-Bacon and Related Act contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.
9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and HUD or its designee, the U.S. Department of Labor, or the employees or their representatives.
10. (i) Certification of Eligibility. By entering in to this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR part 24.  
(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis-Bacon Act 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,



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for the purpose of ...influencing in any way the action of such Administration...makes, utter or publishes any statement, knowing the same to be false...shall be fined not more than \$5,000 or imprisoned not more than two years, or both.”

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

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

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

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

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

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

C. Health and Safety

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

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

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

"General Decision Number: RI20230001 04/14/2023

Superseded General Decision Number: RI20220001

State: Rhode Island

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

Counties: Rhode Island Statewide.

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

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

<p>If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:</p>	<ul style="list-style-type: none"> <li>. Executive Order 14026 generally applies to the contract.</li> <li>. The contractor must pay all covered workers at least \$16.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2023.</li> </ul>
<p>If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:</p>	<ul style="list-style-type: none"> <li>. Executive Order 13658 generally applies to the contract.</li> <li>. The contractor must pay all covered workers at least \$12.15 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2023.</li> </ul>

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

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number	Publication Date
0	01/06/2023
1	01/13/2023
2	02/03/2023
3	03/17/2023
4	04/14/2023

ASBE0006-006 06/01/2022

	Rates	Fringes
HAZARDOUS MATERIAL HANDLER (Includes preparation, wetting, stripping, removal scrapping, vacuuming, bagging & disposing of all insulation materials, whether they contain asbestos or not, from mechanical systems).....	\$ 38.30	25.55

ASBE0006-008 09/01/2021

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

BOIL0029-001 01/01/2021

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

BRRIO003-001 06/01/2022

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

BRRIO003-002 09/01/2022

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

BRRIO003-003 09/01/2022

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

CARP0330-001 01/01/2023

	Rates	Fringes
CARPENTER (Includes Soft Floor Layer).....	\$ 41.53	29.35

Diver Tender.....	\$ 42.53	29.35
DIVER.....	\$ 53.88	29.35
Piledriver.....	\$ 41.53	29.35
WELDER.....	\$ 42.53	29.35

FOOTNOTES:

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

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

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

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

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CARP1121-002 01/02/2023

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

-----  
ELEC0099-002 12/05/2022

	Rates	Fringes
ELECTRICIAN.....	\$ 45.86	53.26%
Teledata System Installer.....	\$ 34.40	12.10%+15.31

FOOTNOTES:

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

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

-----  
ELEV0039-001 01/01/2023

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 59.36	37.335+a+b

FOOTNOTES:

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

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

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ENGI0057-001 06/01/2022

Rates Fringes

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

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

a. BOOM LENGTHS, INCLUDING JIBS:

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

a. PAID HOLIDAYS:

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

a. FOOTNOTES:

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

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 05/01/2022

	Rates	Fringes
Power Equipment Operator (highway construction projects; water and sewerline projects which are incidental to highway construction projects; and bridge projects that do not span water)		
GROUP 1.....	\$ 36.70	29.25+a
GROUP 2.....	\$ 31.40	29.25+a
GROUP 3.....	\$ 25.40	29.25+a
GROUP 4.....	\$ 31.98	29.25+a
GROUP 5.....	\$ 35.68	29.25+a
GROUP 6.....	\$ 35.30	29.25+a
GROUP 7.....	\$ 30.95	29.25+a
GROUP 8.....	\$ 32.33	29.25+a
GROUP 9.....	\$ 34.28	29.25+a

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

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

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

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

GROUP 2: Well point installation crew

GROUP 3: 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 06/01/2022

BUILDING CONSTRUCTION

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

a. BOOM 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 09/16/2022

	Rates	Fringes
IRONWORKER.....	\$ 39.01	31.58

-----  
LABO0271-001 05/30/2021

BUILDING CONSTRUCTION

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

LABORERS CLASSIFICATIONS

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

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

GROUP 3: Pre-Cast Floor & Roof Plank Erectors

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

GROUP 5: Toxic Waste Remover

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LABO0271-002 05/30/2021

HEAVY AND HIGHWAY CONSTRUCTION

	Rates	Fringes
LABORER		
COMPRESSED AIR		
Group 1.....	\$ 53.45	24.15
Group 2.....	\$ 50.98	24.15
Group 3.....	\$ 40.50	24.15
FREE AIR		
Group 1.....	\$ 44.05	24.15
Group 2.....	\$ 43.05	24.15
Group 3.....	\$ 40.50	24.15
LABORER		
Group 1.....	\$ 33.55	24.15
Group 2.....	\$ 33.80	24.15
Group 3.....	\$ 34.55	24.15
Group 4.....	\$ 27.05	24.15
Group 5.....	\$ 35.55	24.15
OPEN AIR CAISSON,		

UNDERPINNING WORK AND BORING CREW

Bottom Man.....	\$ 39.55	24.15
Top Man & Laborer.....	\$ 38.60	24.15
TEST BORING		
Driller.....	\$ 40.00	24.15
Laborer.....	\$ 38.60	24.15

LABORER CLASSIFICATIONS

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

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

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

GROUP 4: Flagger & signaler

GROUP 5: Toxic waste remover

LABORER - COMPRESSED AIR CLASSIFICATIONS

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

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

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

LABORER - FREE AIR CLASSIFICATIONS

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

GROUP 2: Change house attendant, powder watchperson

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

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PAIN0011-005 06/01/2022

	Rates	Fringes
PAINTER		
Brush and Roller.....	\$ 37.22	23.40
Epoxy, Tanks, Towers, Swing Stage & Structural Steel.....	\$ 39.22	23.40
Spray, Sand & Water Blasting.....	\$ 40.22	23.40
Taper.....	\$ 37.97	23.40
Wall Coverer.....	\$ 37.72	23.40

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PAIN0011-006 06/01/2022

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

FOOTNOTES:

SWING STAGE: \$1.00 per hour additional.

PAID HOLIDAYS: Labor Day & Christmas Day.

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PAIN0011-011 06/01/2022

	Rates	Fringes
Painter (Bridge Work).....	\$ 55.00	23.75

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

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

-----  
PLAS0040-001 06/03/2019

BUILDING CONSTRUCTION

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

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

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PLAS0040-002 07/01/2019

HEAVY AND HIGHWAY CONSTRUCTION

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

-----  
PLAS0040-003 07/01/2019

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

-----  
PLUM0051-002 02/27/2023

	Rates	Fringes
Plumbers and Pipefitters.....	\$ 48.89	31.75

-----  
 ROOF0033-004 12/01/2022

	Rates	Fringes
ROOFER.....	\$ 42.23	29.67

-----  
 \* SFRI0669-001 04/01/2023

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

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

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

-----  
 TEAM0251-001 05/01/2022

HEAVY AND HIGHWAY CONSTRUCTION

	Rates	Fringes
TRUCK DRIVER		
GROUP 1.....	\$ 28.46	32.10+A+B+C
GROUP 2.....	\$ 28.61	\$ 32.10+A+B+C
GROUP 3.....	\$ 28.66	\$ 32.10+A+B+C
GROUP 4.....	\$ 28.71	\$ 32.10+A+B+C
GROUP 5.....	\$ 28.81	\$ 32.10+A+B+C
GROUP 6.....	\$ 29.21	\$ 32.10+A+B+C
GROUP 7.....	\$ 29.41	\$ 32.10+A+B+C
GROUP 8.....	\$ 28.91	\$ 32.10+A+B+C
GROUP 9.....	\$ 29.16	\$ 32.10+A+B+C
GROUP 10.....	\$ 28.96	\$ 32.10+A+B+C

FOOTNOTES:

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

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

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

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

TRUCK DRIVER CLASSIFICATIONS

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

GROUP 2: Two-axle on low beds

GROUP 3: Two-axle dump truck

GROUP 4: Three-axle dump truck

GROUP 5: Four- and five-axle equipment

GROUP 6: Low-bed or boom trailer.

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

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

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

GROUP 10: Tractor trailer

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

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

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

### Union Rate Identifiers

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

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

### Survey Rate Identifiers

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

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

### Union Average Rate Identifiers

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

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

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### WAGE DETERMINATION APPEALS PROCESS

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



be:

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

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

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

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

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

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

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

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

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

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

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END OF GENERAL DECISIO"

# DRAFT AIA® Document A104™ - 2017

## Standard Abbreviated Form of Agreement Between Owner and Contractor

AGREEMENT made as of the «XXth» day of «Month» in the year «Year»  
(In words, indicate day, month and year.)

BETWEEN the Owner:  
(Name, legal status, address and other information)

«Providence Public Building Authority»  
« »

and the Contractor:  
(Name, legal status, address and other information)

«Vendor Name»  
«Street Address»  
«City, State Zip»  
« »

for the following Project:  
(Name, location and detailed description)

«Project Name»  
Project Street Address  
Providence, RI « »

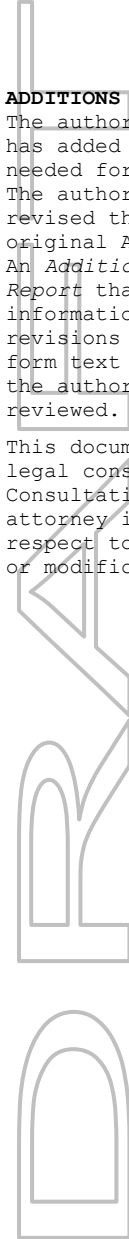
The Architect:  
(Name, legal status, address and other information)

«Providence Parks Department»  
« »

The Owner and Contractor agree as follows.

**ADDITIONS AND DELETIONS:**  
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.



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**TABLE OF ARTICLES**

- 1 THE WORK OF THIS CONTRACT**
- 2 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION**
- 3 CONTRACT SUM**
- 4 PAYMENT**
- 5 DISPUTE RESOLUTION**
- 6 ENUMERATION OF CONTRACT DOCUMENTS**
- 7 GENERAL PROVISIONS**
- 8 OWNER**
- 9 CONTRACTOR**
- 10 ARCHITECT**
- 11 SUBCONTRACTORS**
- 12 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS**
- 13 CHANGES IN THE WORK**
- 14 TIME**
- 15 PAYMENTS AND COMPLETION**
- 16 PROTECTION OF PERSONS AND PROPERTY**
- 17 INSURANCE AND BONDS**
- 18 CORRECTION OF WORK**
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- 20 TERMINATION OF THE CONTRACT**
- 21 CLAIMS AND DISPUTES**



**EXHIBIT A DETERMINATION OF THE COST OF THE WORK**

**ARTICLE 1 THE WORK OF THIS CONTRACT**

The Contractor shall execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents, as listed in Article 6 of this Agreement or reasonably inferable by the Contractor from the Contract Documents as necessary to produce the results intended by the Contract Documents, to be the responsibility of others.

**ARTICLE 2 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION – See EXHIBIT A, Project Schedule**

**§ 2.1** The date of commencement of the Work shall be:

*(Check one of the following boxes.)*

[  ] The date of this Agreement.

A date set forth in a notice to proceed issued by the Owner.

Established as follows:  
(Insert a date or a means to determine the date of commencement of the Work.)

« »

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

§ 2.2 The Contract Time shall be measured from the date of commencement.

### § 2.3 Substantial Completion

§ 2.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work: The Contractor shall achieve Substantial Completion including, without limitation, the completion of any so-called punch list items reasonably soon thereafter, but in no event longer than fourteen (14) days following Substantial Completion. TIME IS OF THE ESSENCE.

(Check the appropriate box and complete the necessary information.)

Not later than « » ( « » ) weeks from the date of commencement of the Work. Project Schedule attached hereto as **EXHIBIT A**.

By the following date: «Date of Project Completion»

§ 2.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

Portion of Work	Substantial Completion Date

§ 2.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 2.3, liquidated damages, if any, shall be assessed as set forth in Section 3.5. N/A

### ARTICLE 3 CONTRACT SUM

§ 3.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be one of the following:

(Check the appropriate box.)

Stipulated Sum, in accordance with Section 3.2 below

Cost of the Work plus the Contractor's Fee, in accordance with Section 3.3 below

Cost of the Work plus the Contractor's Fee with a Guaranteed Maximum Price, in accordance with Section 3.4 below

(Based on the selection above, complete Section 3.2, 3.3 or 3.4 below.)

§ 3.2 The Stipulated Sum shall be «Award Amount in writing - Dollars and 00/100 » (\$ «xxx,xxx.xx» ), subject to additions and deductions as provided in the Contract Documents.

§ 3.2.1 The Stipulated Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:

(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

§ 3.2.2 Unit prices, if any: See Contractor's Proposal dated (Bid Due Date), EXHIBIT B (Identify the item and state the unit price and the quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit (\$0.00)
See Bid Form		

Unit prices shall be complete and include without limitation:

- (i) All materials, equipment, labor, delivery, installation, overhead and profit; and
- (ii) Any other costs or expenses in connection with or incidental to the performance of the portion of the work to which such unit prices apply.

§ 3.2.3 Allowances, if any, included in the stipulated sum: See Contractor's Proposal dated 2/13/2023 , EXHIBIT B (Identify each allowance.)

Item	Price
Allowance (If Any)	\$xx,xxx.xx

The allowance amounts are complete and include without limitation:

- (i) All materials, equipment, labor, delivery, installation, overhead and profit; and
- (ii) Any other costs or expenses in connection with or incidental to the performance of that portion of the work to which such allowance applies.

§ 3.3 Cost of the Work Plus Contractor's Fee N/A

§ 3.3.1 The Cost of the Work is as defined in Exhibit A, Determination of the Cost of the Work.

§ 3.3.2 The Contractor's Fee:

(State a lump sum, percentage of Cost of the Work or other provision for determining the Contractor's Fee and the method of adjustment to the Fee for changes in the Work.)

« »

§ 3.4 Cost of the Work Plus Contractor's Fee With a Guaranteed Maximum Price N/A

§ 3.4.1 The Cost of the Work is as defined in Exhibit A, Determination of the Cost of the Work.

§ 3.4.2 The Contractor's Fee:

(State a lump sum, percentage of Cost of the Work or other provision for determining the Contractor's Fee and the method of adjustment to the Fee for changes in the Work.)

« »

§ 3.4.3 Guaranteed Maximum Price N/A

§ 3.4.3.1 The sum of the Cost of the Work and the Contractor's Fee is guaranteed by the Contractor not to exceed « » (\$ « » ), subject to additions and deductions by changes in the Work as provided in the Contract Documents. This maximum sum is referred to in the Contract Documents as the Guaranteed Maximum Price. Costs which would cause the Guaranteed Maximum Price to be exceeded shall be paid by the Contractor without reimbursement by the Owner.

(Insert specific provisions if the Contractor is to participate in any savings.)

« »

§ 3.4.3.2 The Guaranteed Maximum Price is based on the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner: N/A

(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

« N/A »

**§ 3.4.3.3 Unit Prices, if any:**

(Identify the item and state the unit price and the quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit (\$0.00)

**§ 3.4.3.4 Allowances: See Contractor's Proposal dated attached as EXHIBIT B.**

(Identify each allowance.)

Item	Price

**§ 3.4.3.5 Assumptions, if any, on which the Guaranteed Maximum Price is based:**

«N/A »

**§ 3.4.3.6** To the extent that the Contract Documents are anticipated to require further development, the Guaranteed Maximum Price includes the costs attributable to such further development consistent with the Contract Documents and reasonably inferable therefrom. Such further development does not include changes in scope, systems, kinds and quality of materials, finishes or equipment, all of which, if required, shall be incorporated by Change Order.

**§ 3.4.3.7** The Owner shall authorize preparation of revisions to the Contract Documents that incorporate the agreed-upon assumptions contained in Section 3.4.3.5. The Owner shall promptly furnish such revised Contract Documents to the Contractor. The Contractor shall notify the Owner and Architect of any inconsistencies between the agreed-upon assumptions contained in Section 3.4.3.5 and the revised Contract Documents.

**§ 3.5 Liquidated damages, if any: N/A**

(Insert terms and conditions for liquidated damages, if any.)

« »

**ARTICLE 4 PAYMENT**

**§ 4.1 Progress Payments**

**§ 4.1.1** Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

**§ 4.1.2** The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

« »

**§ 4.1.3** Provided that an Application for Payment is received by the Architect not later than the «15th » day of a month, the Owner shall make payment of the certified amount to the Contractor not later than the «30th » day of the « following » month. If an Application for Payment is received by the Architect after the date fixed above, payment shall be made by the Owner not later than «Thirty » ( «30 » ) days after the Architect receives the Application for Payment.

(Federal, state or local laws may require payment within a certain period of time.)

§ 4.1.4 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold retainage from the payment otherwise due as follows:  
(Insert a percentage or amount to be withheld as retainage from each Application for Payment and any terms for reduction of retainage during the course of the Work. The amount of retainage may be limited by governing law.)

« Five Percent (5%) »

In addition to the aforesaid retainage, all payments shall be reduced by Three (3%) Percent pursuant to RIGL 44-1-6 (non-resident contractors tax withholding), if applicable.

§ 4.1.5 Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.  
(Insert rate of interest agreed upon, if any.)

« 1 » % «(one percent)

§ 4.1.6 In addition to other required items, each Application for Payment shall be accompanied by:

- (i) With each Application for Payment, a completed Partial Release of Lien as noted in **EXHIBIT D**.

§ 4.1.7 Applications for Payment shall be pursuant to AIA Document G702 and G703, attached hereto as **EXHIBIT C**.

## § 4.2 Final Payment

§ 4.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 18.2, and to satisfy other requirements, if any, which extend beyond final payment;
- .2
- .3 a final Certificate for Payment has been issued by the Architect in accordance with Section 15.7.1.
- .4 a copy of duly executed Final Releases by the Contractor and its subcontractors, see **EXHIBIT D**;
- .5 copies of all documentation to the Owner including, but not limited to, warranties, manufacturer's instructions and any other documentation in relation to all systems including, but not limited to, HVAC, plumbing, windows, and all other required documents pursuant to the Contract between the parties.

§ 4.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

« »

## ARTICLE 5 DISPUTE RESOLUTION

### § 5.1 Binding Dispute Resolution

For any claim subject to, but not resolved by, mediation pursuant to Section 21.5, the method of binding dispute resolution shall be as follows:

(Check the appropriate box.)

[  ] Arbitration pursuant to Section 21.6 of this Agreement

[  ] Litigation in a court of competent jurisdiction

[  ] Other (Specify)

« »

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, claims will be resolved in a court of competent jurisdiction.

**ARTICLE 6 ENUMERATION OF CONTRACT DOCUMENTS – See EXHIBIT LIST dated the    day of    in the year 2022 with Exhibits A through \_, which is incorporated herein.**

§ 6.1 The Contract Documents are defined in Article 7 and, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 6.1.1 The Agreement is this executed AIA Document A104™–2017, Standard Abbreviated Form of Agreement Between Owner and Contractor.

§ 6.1.2 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:

*(Insert the date of the E203–2013 incorporated into this Agreement.)*

« N/A »

§ 6.1.3 The Supplementary and other Conditions of the Contract: N/A

Document	Title	Date	Pages

§ 6.1.4 The Specifications:

*(Either list the Specifications here or refer to an exhibit attached to this Agreement.)*

« See Contractor’s Proposal and Specifications dated **(Date on Specifications)** (See EXHIBIT B) »

Section	Title	Date	Pages

§ 6.1.5 The Drawings:

*(Either list the Drawings here or refer to an exhibit attached to this Agreement.)*

«See Architectural Drawings dated **(Date on Drawings)**, copies of which are attached hereto as EXHIBIT E\_»

Number	Title	Date

§ 6.1.6 The Addenda, if any: EXHIBIT F - None

Number	Date	Pages
Addendum # X (If Any)	Date of Addendum	xx Pages

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are enumerated in this Article 6.

§ 6.1.7 Additional documents, if any, forming part of the Contract Documents: N/A

.1 Other Exhibits:

*(Check all boxes that apply.)*

Exhibit A, Determination of the Cost of the Work.

AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:  
*(Insert the date of the E204-2017 incorporated into this Agreement.)*



<< >>

[ << >> ] The Sustainability Plan:

Title	Date	Pages

[ << >> ] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

- .2 Other documents, if any, listed below:  
(List here any additional documents that are intended to form part of the Contract Documents.)

<< >>

## ARTICLE 7 GENERAL PROVISIONS

### § 7.1 The Contract Documents

The Contract Documents are enumerated in Article 6 and consist of this Agreement (including, if applicable, Supplementary and other Conditions of the Contract), Drawings, Specifications, Addenda issued prior to the execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

### § 7.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind between any persons or entities other than the Owner and the Contractor.

### § 7.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

### § 7.4 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

### § 7.5 Ownership and use of Drawings, Specifications and Other Instruments of Service

§ 7.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 7.5.2 The Contractor, Subcontractors, Sub-subcontractors and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to the protocols established pursuant to Sections 7.6 and 7.7, solely

and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.

## § 7.6

## § 7.7

### § 7.8 Severability

The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

### § 7.9 Notice

§ 7.9.1 Except as otherwise provided in Section 7.9.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier.

*(If other than in accordance with AIA Document E203–2013, insert requirements for delivering Notice in electronic format such as name, title and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)*

<< >>

§ 7.9.2 Notice of Claims shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

### § 7.10 Relationship of the Parties

Where the Contract is based on the Cost of the Work plus the Contractor's Fee, with or without a Guaranteed Maximum Price, the Contractor accepts the relationship of trust and confidence established by this Agreement and covenants with the Owner to cooperate with the Architect and exercise the Contractor's skill and judgment in furthering the interests of the Owner; to furnish efficient business administration and supervision; to furnish at all times an adequate supply of workers and materials; and to perform the Work in an expeditious and economical manner consistent with the Owner's interests. The Owner agrees to furnish and approve, in a timely manner, information required by the Contractor and to make payments to the Contractor in accordance with the requirements of the Contract Documents.

## ARTICLE 8 OWNER

### § 8.1 Information and Services Required of the Owner

#### § 8.1.1

§ 8.1.2 The Owner shall furnish all necessary surveys and a legal description of the site.

§ 8.1.3 The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 8.1.4 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 9.6.1, the Owner shall secure and pay for other necessary approvals, easements, assessments, and charges required for the construction, use, or occupancy of permanent structures or for permanent changes in existing facilities.

### § 8.2 Owner's Right to Stop the Work

If the Contractor fails to correct Work which is not in accordance with the requirements of the Contract Documents, or repeatedly fails to carry out the Work in accordance with the Contract Documents, the Owner may issue a written

order to the Contractor to stop the Work, or any portion thereof, until the cause for such order is eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity.

### **§ 8.3 Owner's Right to Carry Out the Work**

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents, and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to any other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 15.4.3, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including the Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 21.

**§ 8.4** In no event shall the Owner have control over, charge of, or any responsibility for construction means, methods, techniques, sequences, or procedures or for safety precautions and programs in connection with the work.

## **ARTICLE 9 CONTRACTOR**

### **§ 9.1 Review of Contract Documents and Field Conditions by Contractor**

**§ 9.1.1** Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

**§ 9.1.2** Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 8.1.2, shall take field measurements of any existing conditions related to that portion of the Work and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies, or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional unless otherwise specifically provided in the Contract Documents.

**§ 9.1.3** The Contractor is not required to ascertain that the Architectural Drawings pursuant to **EXHIBIT E** are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

**§ 9.1.4** The Contractor shall comply with all applicable federal, state and local laws, statutes, rules, codes, ordinances and regulations.

### **§ 9.2 Supervision and Construction Procedures**

**§ 9.2.1** The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters.

**§ 9.2.2** The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for or on behalf of the Contractor or any of its Subcontractors.

### **§ 9.3 Labor and Materials**

**§ 9.3.1** Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other

facilities and services necessary for proper execution and completion of the Work whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

**§ 9.3.2** The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.

**§ 9.3.3** The Contractor may make a substitution only with the consent of the Owner, after evaluation by the Architect and in accordance with a Modification.

#### **§ 9.4 Warranty**

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation or normal wear and tear under normal usage. All other warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 15.6.3.

#### **§ 9.5 Taxes**

The Contractor shall pay sales, consumer, use, and other similar taxes that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

#### **§ 9.6 Permits, Fees, Notices, and Compliance with Laws**

**§ 9.6.1** Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

**§ 9.6.2** The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work. If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

#### **§ 9.7 Allowances**

The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. The Owner shall select materials and equipment under allowances with reasonable promptness. Allowance amounts shall include the costs to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts. Contractor's costs for unloading and handling at the site, labor, installation, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowance.

#### **§ 9.8 Contractor's Construction Schedules See EXHIBIT A**

**§ 9.8.1** The Contractor, upon execution of this Agreement, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

**§ 9.8.2** The Contractor shall perform the Work in general accordance with the most recent schedule submitted to the Owner and Architect.

#### **§ 9.9 Submittals**

**§ 9.9.1** The Contractor shall review for compliance with the Contract Documents and submit to the Architect Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents in coordination with the Contractor's construction schedule and in such sequence as to allow the Architect reasonable time for review. By

submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them; (2) determined and verified materials, field measurements, and field construction criteria related thereto, or will do so; and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents. The Work shall be in accordance with approved submittals.

**§ 9.9.2** Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents.

**§ 9.9.3** The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents or unless the Contractor needs to provide such services in order to carry out the Contractor's own responsibilities. If professional design services or certifications by a design professional are specifically required, the Owner and the Architect will specify the performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional. If no criteria are specified, the design shall comply with applicable codes and ordinances. Each Party shall be entitled to rely upon the information provided by the other Party. The Architect will review and approve or take other appropriate action on submittals for the limited purpose of checking for conformance with information provided and the design concept expressed in the Contract Documents. The Architect's review of Shop Drawings, Product Data, Samples, and similar submittals shall be for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. In performing such review, the Architect will approve, or take other appropriate action upon, the Contractor's Shop Drawings, Product Data, Samples, and similar submittals.

#### **§ 9.10 Use of Site**

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment. CONTRACTOR IS AWARE THAT ADJACENT TO THE PREMISES UNDER THE SCOPE OF WORK PURSUANT TO THIS CONTRACT, CONTRACTOR SHALL PROVIDE ANY AND ALL SAFETY TECHNIQUES AND PRECAUTIONS TO PROTECT THE ADJACENT AREA AND THE PUBLIC AND EMPLOYEES OF THE OWNER.

#### **§ 9.11 Cutting and Patching**

The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly.

#### **§ 9.12 Cleaning Up**

The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus material from and about the Project.

#### **§ 9.13 Access to Work**

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

#### **§ 9.14 Royalties, Patents and Copyrights**

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

#### **§ 9.15 Indemnification**

**§ 9.15.1** To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the

negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Section 9.15.1.

**§ 9.15.2** In claims against any person or entity indemnified under this Section 9.15 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 9.15.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

## **ARTICLE 10 ARCHITECT**

**§ 10.1** The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction, until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified in writing in accordance with other provisions of the Contract.

**§ 10.2** Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

**§ 10.3** The Architect will visit the site at intervals appropriate to the stage of the construction to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general, if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

**§ 10.4** On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

**§ 10.5** Based on the Architect's evaluations of the Work and of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

**§ 10.6** The Architect has authority to reject Work that does not conform to the Contract Documents and to require inspection or testing of the Work.

**§ 10.7** The Architect will review and approve or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

**§ 10.8** The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect will make initial decisions on all claims, disputes, and other matters in question between the Owner and Contractor but will not be liable for results of any interpretations or decisions rendered in good faith.

**§ 10.9** The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

## **ARTICLE 11 SUBCONTRACTORS**

§ 11.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site.

§ 11.2 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the Subcontractors or suppliers proposed for each of the principal portions of the Work. The Contractor shall not contract with any Subcontractor or supplier to whom the Owner or Architect has made reasonable written objection within ten days after receipt of the Contractor's list of Subcontractors and suppliers. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 11.3 Contracts between the Contractor and Subcontractors shall (1) require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by the terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by the Contract Documents, assumes toward the Owner and Architect, and (2) allow the Subcontractor the benefit of all rights, remedies and redress against the Contractor that the Contractor, by these Contract Documents, has against the Owner.

## **ARTICLE 12 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS**

§ 12.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation. This section should only apply for out-of-scope work whereby separate contractors are retained by the Owner.

§ 12.2 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's activities with theirs as required by the Contract Documents.

## **ARTICLE 13 CHANGES IN THE WORK**

§ 13.1 By appropriate Modification, changes in the Work may be accomplished after execution of the Contract. The Owner, without invalidating the Contract, may order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, with the Contract Sum and Contract Time being adjusted accordingly. Such changes in the Work shall be authorized by written Change Order signed by the Owner, Contractor, and Architect, or by written Construction Change Directive signed by the Owner and Architect. Upon issuance of the Change Order or Construction Change Directive, the Contractor shall proceed promptly with such changes in the Work, unless otherwise provided in the Change Order or Construction Change Directive. Agreement on any Change Order shall constitute a final settlement and release of all claims by the Contractor relating to the changed work that is subject to the Change Order including, but not limited to, all direct and indirect costs associated with such change and any and all adjustments to the Contract Sum and the Contract Schedule including any and all claims of the Contractor to the date of the Change Order. In the event that the Owner has any claims against the Contractor, the Owner shall notify the Contractor in writing by the 30<sup>th</sup> day of each month during construction.

§ 13.2 Adjustments in the Contract Sum and Contract Time resulting from a change in the Work shall be determined by mutual agreement of the parties or, in the case of a Construction Change Directive signed only by the Owner and Architect, by the Contractor's cost of labor, material, equipment, and reasonable overhead and profit, unless the parties agree on another method for determining the cost or credit. Pending final determination of the total cost of a Construction Change Directive, the Contractor may request payment for Work completed pursuant to the Construction Change Directive. The Architect will make an interim determination of the amount of payment due for purposes of certifying the Contractor's monthly Application for Payment. When the Owner and Contractor agree on adjustments to the Contract Sum and Contract Time arising from a Construction Change Directive, the Architect will prepare a Change Order. Contractor's overhead and profit on any change shall be limited to Fifteen (15%) Percent.

§ 13.3 The Architect will have authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be effected by written order and shall be binding on the Owner and Contractor. The Contractor shall carry out such written orders promptly. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work.

§ 13.4 If concealed or unknown physical conditions are encountered at the site that differ materially from those indicated in the Contract Documents or from those conditions ordinarily found to exist, the Contract Sum and Contract Time shall be equitably adjusted as mutually agreed between the Owner and Contractor; provided that the Contractor provides notice to the Owner and Architect promptly and before conditions are disturbed.

#### ARTICLE 14 TIME

§ 14.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing this Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 14.2 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 14.3 The term “day” as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 14.4 The date of Substantial Completion is the date certified by the Architect in accordance with Section 15.6.3.

§ 14.5 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) changes ordered in the Work; (2) by labor disputes, fire, unusual delay in deliveries, abnormal adverse weather conditions not reasonably anticipatable, unavoidable casualties, or any causes beyond the Contractor’s control; or (3) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine, subject to the provisions of Article 21.

#### ARTICLE 15 PAYMENTS AND COMPLETION

##### § 15.1 Schedule of Values

§ 15.1.1 Where the Contract is based on a Stipulated Sum or the Cost of the Work with a Guaranteed Maximum Price pursuant to Section 3.2 or 3.4, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Stipulated Sum or Guaranteed Maximum Price to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy required by the Architect. This schedule of values shall be used as a basis for reviewing the Contractor’s Applications for Payment. Contractor’s Schedule of Values is noted in **EXHIBIT G** attached hereto.

§ 15.1.2 The allocation of the Stipulated Sum or Guaranteed Maximum Price under this Section 15.1 shall not constitute a separate stipulated sum or guaranteed maximum price for each individual line item in the schedule of values.

##### § 15.2

§ 15.3.3 Payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment stored, and protected from damage, off the site at a location agreed upon in writing.

§ 15.3.4 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor’s knowledge, information and belief, be free and clear of liens, claims, security interests or other encumbrances adverse to the Owner’s interests.



## § 15.4 Certificates for Payment

§ 15.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner of the Architect's reasons for withholding certification in whole or in part as provided in Section 15.4.3.

§ 15.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluations of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 15.4.3 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 15.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 15.4.1. If the Contractor and the Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 9.2.2, because of

- .1 defective Work not remedied;
- .2 third-party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;
- or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents;
- .8 failure to provide Owner with Partial or Final Releases.

§ 15.4.4 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 15.4.3, in whole or in part, that party may submit a Claim in accordance with Article 21.

## § 15.5 Progress Payments

§ 15.5.1 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to sub-subcontractors in a similar manner.

§ 15.5.2 Neither the Owner nor Architect shall have an obligation to pay or see to the payment of money to a Subcontractor or supplier except as may otherwise be required by law.

§ 15.5.3 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 15.5.4 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

### § 15.6 Substantial Completion

§ 15.6.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 15.6.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 15.6.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. When the Architect determines that the Work or designated portion thereof is substantially complete, the Architect will issue a Certificate of Substantial Completion which shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 15.6.4 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

### § 15.7 Final Completion and Final Payment

§ 15.7.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions stated in Section 15.7.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 15.7.2 Final payment shall not become due until the Contractor has delivered to the Owner a complete release of all liens arising out of this Contract or receipts in full covering all labor, materials and equipment for which a lien could be filed, or a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including costs and reasonable attorneys' fees.

§ 15.7.3 The making of final payment shall constitute a waiver of claims by the Owner except those arising from

- .1 liens, claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents; or
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 15.7.4 Acceptance of final payment by the Contractor, a Subcontractor or supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of the final Application for Payment.

**ARTICLE 16 PROTECTION OF PERSONS AND PROPERTY – Contractor's Safety Program is attached hereto as EXHIBIT J**

**§ 16.1 Safety Precautions and Programs**

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation, or replacement in the course of construction.

The Contractor shall comply with, and give notices required by, applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons and property and their protection from damage, injury, or loss. The Contractor shall promptly remedy damage and loss to property caused in whole or in part by the Contractor, a Subcontractor, a sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 16.1.2 and 16.1.3. The Contractor may make a claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 9.15.

**§ 16.2 Hazardous Materials and Substances**

**§ 16.2.1** The Contractor is responsible for compliance with the requirements of the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents, and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

**§ 16.2.2** To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area, if in fact, the material or substance presents the risk of bodily injury or death as described in Section 16.2.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

**§ 16.2.3** If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

**ARTICLE 17 INSURANCE AND BONDS – SEE EXHIBIT H**

**§ 17.1 Contractor's Insurance**

**§ 17.1.1** The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in this Section 17.1 or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the insurance required by this Agreement from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 18.4, unless a different duration is stated below:

<< >>

§ 17.1.2 Commercial General Liability insurance for the Project written on an occurrence form with policy limits of not less than «One Million Dollars » (\$ «1,000,000 » ) each occurrence, «Two Million Dollars » (\$ «2,000,000 » ) general aggregate, and «Two Million Dollars » (\$ «2,000,000 » ) aggregate for products-completed operations hazard, providing coverage for claims including

- .1 damages because of bodily injury, sickness or disease, including occupational sickness or disease, and death of any person;
- .2 personal and advertising injury;
- .3 damages because of physical damage to or destruction of tangible property, including the loss of use of such property;
- .4 bodily injury or property damage arising out of completed operations; and
- .5 the Contractor's indemnity obligations under Section 9.15.

§ 17.1.3 Automobile Liability covering vehicles owned by the Contractor and non-owned vehicles used by the Contractor, with policy limits of not less than «One Million Dollars » (\$ «1,000,000 » ) per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance, and use of those motor vehicles along with any other statutorily required automobile coverage.

§ 17.1.4 The Contractor may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided such primary and excess or umbrella insurance policies result in the same or greater coverage as those required under Section 17.1.2 and 17.1.3, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers.

§ 17.1.5 Workers' Compensation at Rhode Island statutory limits.

§ 17.1.6 Employers' Liability with policy limits not less than «One Million Dollars » (\$ «1,000,000 » ) each accident, « » (\$ « » ) each employee, and « » (\$ « » ) policy limit.

§ 17.1.7 If the Contractor is required to furnish professional services as part of the Work, the Contractor shall procure Professional Liability insurance covering performance of the professional services, with policy limits of not less than « » (\$ « » ) per claim and « » (\$ « » ) in the aggregate.

§ 17.1.8 If the Work involves the transport, dissemination, use, or release of pollutants, the Contractor shall procure Pollution Liability insurance, with policy limits of not less than « Two Million Dollars » (\$ «2,000,000 » ) per claim and « » (\$ « » ) in the aggregate.

§ 17.1.9 Coverage under Sections 17.1.7 and 17.1.8 may be procured through a Combined Professional Liability and Pollution Liability insurance policy, with combined policy limits of not less than « Two Million Dollars » (\$ «2,000,000 » ) per claim and «Two Million Dollars » (\$ «2,000,000 » ) in the aggregate.

§ 17.1.10 The Contractor shall provide certificates of insurance acceptable to the Owner evidencing compliance with the requirements in this Section 17.1 at the following times: (1) prior to commencement of the Work; (2) upon renewal or replacement of each required policy of insurance; and (3) upon the Owner's written request. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment and thereafter upon renewal or replacement of such coverage until the expiration of the period required by Section 17.1.1. The certificates will show the Owner as an additional insured on the Contractor's Commercial General Liability and excess or umbrella liability policy. **THE CONTRACTOR SHALL PROVIDE THE OWNER WITH AN ENDORSEMENT FOR ADDITIONAL INSURED COVERAGE.**

§ 17.1.11 The Contractor shall disclose to the Owner any deductible or self-insured retentions applicable to any insurance required to be provided by the Contractor.

§ 17.1.12 To the fullest extent permitted by law, the Contractor shall cause the commercial liability coverage required by this Section 17.1 to include (1) the Owner, the Architect, and the Architect's Consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the

Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions for which loss occurs during completed operations. The additional insured coverage shall be primary and non-contributory to any of the Owner's general liability insurance policies and shall apply to both ongoing and completed operations. To the extent commercially available, the additional insured coverage shall be no less than that provided by Insurance Services Office, Inc. (ISO) forms CG 20 10 07 04, CG 20 37 07 04, and, with respect to the Architect and the Architect's Consultants, CG 20 32 07 04.

§ 17.1.13 Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by this Section 17.1, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

**§ 17.1.14 Other Insurance Provided by the Contractor**

*(List below any other insurance coverage to be provided by the Contractor and any applicable limits.)*

Coverage	Limits
Umbrella Liability	\$5,000,000

**§ 17.2 Owner's Insurance**

**§ 17.2.1 Owner's Liability Insurance**

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

**§ 17.2.2 Property Insurance**

§ 17.2.2.1 The Owner shall purchase and maintain, from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located, property insurance written on a builder's risk "all-risks" completed value or equivalent policy form and sufficient to cover the total value of the entire Project on a replacement cost basis. The Owner's property insurance coverage shall be no less than the amount of the initial Contract Sum, plus the value of subsequent Modifications and labor performed or materials or equipment supplied by others. The property insurance shall be maintained until Substantial Completion and thereafter as provided in Section 17.2.2.2, unless otherwise provided in the Contract Documents or otherwise agreed in writing by the parties to this Agreement. This insurance shall include the interests of the Owner, Contractor, Subcontractors, and Sub-subcontractors in the Project as insureds. This insurance shall include the interests of mortgagees as loss payees.

§ 17.2.2.2 Unless the parties agree otherwise, upon Substantial Completion, the Owner shall continue the insurance required by Section 17.2.2.1 or, if necessary, replace the insurance policy required under Section 17.2.2.1 with property insurance written for the total value of the Project that shall remain in effect until expiration of the period for correction of the Work set forth in Section 18.4.

§ 17.2.2.3 If the insurance required by this Section 17.2.2 is subject to deductibles or self-insured retentions, the Owner shall be responsible for all loss not covered because of such deductibles or retentions.

§ 17.2.2.4 If the Work involves remodeling an existing structure or constructing an addition to an existing structure, the Owner shall purchase and maintain, until the expiration of the period for correction of Work as set forth in Section 18.4, "all-risks" property insurance, on a replacement cost basis, protecting the existing structure against direct physical loss or damage, notwithstanding the undertaking of the Work. The Owner shall be responsible for all co-insurance penalties.

§ 17.2.2.5 Prior to commencement of the Work, the Owner shall secure the insurance, and provide evidence of the coverage, required under this Section 17.2.2 and, upon the Contractor's request, provide a copy of the property insurance policy or policies required by this Section 17.2.2. The copy of the policy or policies provided shall contain all applicable conditions, definitions, exclusions, and endorsements.

§ 17.2.2.6 Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any insurance required by this Section 17.2.2, the Owner shall provide notice to the

Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

**§ 17.2.2.7 Waiver of Subrogation**

**§ 17.2.2.7.1** The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by this Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this Section 17.2.2.7 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

**§ 17.2.2.7.2** If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 17.2.2.7.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

**§ 17.2.2.8** A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements, written where legally required for validity, the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

**§ 17.2.3 Other Insurance Provided by the Owner N/A**

*(List below any other insurance coverage to be provided by the Owner and any applicable limits.)*

**Coverage**

**Limits**

**§ 17.3 Performance Bond and Payment Bond SEE EXHIBIT I**

**§ 17.3.1** The Owner shall require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in the Contract Documents on the date of execution of the Contract.

The Contractor shall provide the necessary Performance and Payment Bonds, i.e. statutory bonds pursuant to R.I.G.L. 37-12-1 and 37-13-14. Any bond shall be with a surety noted in the United States Federal Register of Sureties.

**§ 17.3.2** Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

## ARTICLE 18 CORRECTION OF WORK

§ 18.1 The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed, or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 18.2 In addition to the Contractor's obligations under Section 9.4, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 15.6.3, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty.

§ 18.3 If the Contractor fails to correct nonconforming Work within a reasonable time, the Owner may correct it in accordance with Section 8.3.

§ 18.4 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 18.5 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Article 18.

## ARTICLE 19 MISCELLANEOUS PROVISIONS

### § 19.1 Assignment of Contract

Neither party to the Contract shall assign the Contract without written consent of the other, except that the Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

### § 19.2 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 21.6.

### § 19.3 Tests and Inspections

Tests, inspections, and approvals of portions of the Work required by the Contract Documents or by applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities shall be made at an appropriate time. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

### § 19.4 The Owner's representative:

*(Name, address, email address and other information)*

« Brian F. Byrnes – Deputy Superintendent of Parks »

« Roger Williams Park – Dalrymple Boathouse »

« 1000 Elmwood Avenue »

« Providence, RI 02905 »

§ 19.5 The Contractor's representative:  
(Name, address, email address and other information)

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§ 19.6 Neither the Owner's nor the Contractor's representative shall be changed without ten days' prior notice to the other party.

## ARTICLE 20 TERMINATION OF THE CONTRACT

### § 20.1 Termination by the Contractor

If the Architect fails to certify payment as provided in Section 15.4.1 for a period of 30 days through no fault of the Contractor, or if the Owner fails to make payment as provided in Section 4.1.3 for a period of 30 days, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.

### § 20.2 Termination by the Owner for Cause

§ 20.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 20.2.2 When any of the reasons described in Section 20.2.1 exists, the Owner, upon certification by the Architect that sufficient cause exists to justify such action, may, without prejudice to any other remedy the Owner may have and after giving the Contractor seven days' notice, terminate the Contract and take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor and may finish the Work by whatever reasonable method the Owner may deem expedient. Upon request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 20.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 20.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 20.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Architect, upon application, and this obligation for payment shall survive termination of the Contract.

### § 20.3 Termination by the Owner for Convenience

The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause. The Owner shall pay the Contractor for Work executed; and costs incurred by reason of such termination, including costs attributable to termination of Subcontracts; and a termination fee, if any, as follows:

*(Insert the amount of or method for determining the fee payable to the Contractor by the Owner following a termination for the Owner's convenience, if any.)*

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## ARTICLE 21 CLAIMS AND DISPUTES

### § 21.1 DELETED



## § 21.2 Notice of Claims

§ 21.2.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 18.2, shall be initiated by notice to the Architect within 3 days after occurrence of the event giving rise to such Claim or within 3 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 21.2.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 18.2, shall be initiated by notice to the other party.

## § 21.3 Time Limits on Claims

The Owner and Contractor shall commence all claims and causes of action against the other and arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in this Agreement whether in contract, tort, breach of warranty, or otherwise, within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 21.3.

§ 21.4 The parties shall endeavor to resolve their disputes by mediation with a mutually agreed upon Mediator, shall be administered by the American Arbitration Association in accordance with their Construction Industry Mediation Procedures in effect on the date of this Agreement. A request for mediation shall be made in writing, delivered to the other party to this Agreement, and filed with the person or entity administering the mediation. The request may be made concurrently with the binding dispute resolution but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 21.5 If the parties have selected arbitration as the method for binding dispute resolution in this Agreement, any claim, subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered pursuant to the Rhode Island Public Works Arbitration Act, 37-16-1 et. seq.. Demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 21.6 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to this Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

## § 21.7 Continuing Contract Performance

Pending final resolution of a Claim, except as otherwise agreed in writing, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 20. Nothing contained in this Section 21.11 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

## ARTICLE 22 EXHIBIT LIST

§ 22.1 Exhibit List. See Exhibit List attached hereto.

This Agreement entered into as of the day and year first written above.

**PROVIDENCE PUBLIC BUILDING  
AUTHORITY**

**Vendor Company Name**

**OWNER** *(Signature)*

**Ron Crosson, Chairman**  
*(Printed name and title)*

**CONTRACTOR** *(Signature)*

**«Owner's Name & Title»**  
*(Printed name and title)*



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## SECTION 010000 - GENERAL REQUIREMENTS

### PART 1 - GENERAL

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

#### A. SCOPE OF WORK

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

#### B. WORK COVERED BY CONTRACT DOCUMENTS

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

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

#### E. PROJECT INFORMATION

##### 1. OWNER

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

##### 2. OWNER'S REPRESENTATIVE

- a. Sam Greenwood

### 1.2 PROJECT LOCATION

A. Glenbridge Ave & Barbara St, Providence, RI

### PART 2 - PRODUCTS

#### 2.1 CONTRACTOR USE OF PREMISES

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



1. The Contractor shall maintain vehicular access and utility service to the abutting properties at all times throughout the course of the construction.
2. The Contractor shall assume full responsibility for security of all materials and equipment on the site, including those of the subcontractors.
3. If directed by the Owner's Representative, the Contractor shall relocate or move any stored items that interfere with operations of the Owner.
4. The Contractor may elect to obtain (at no cost to the Owner) additional storage or work areas off-site if needed to perform the work.

## 2.2 OWNER OCCUPANCY REQUIREMENTS

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

## 2.3 MOBILIZATION, SITE PREPARATION, & DEMOLITION

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

## 2.4 CONSTRUCTION STAGING/STOCKPILE AREAS

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

## 2.5 MATERIALS AND EQUIPMENT:

- A. Materials to be Removed and Stockpiled.



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

B. Signs: Conform to requirements of Temporary Facilities and Controls.

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

## 2.6 TEMPORARY CONSTRUCTION FACILITIES AND UTILITIES

A. Make arrangements with the Owner's Representative for storage of materials and equipment in designated locations at the construction site. If staged on site, materials shall be secured from vandalism and or theft.

B. Plastic construction fence or snow fencing if installed shall be maintained in good condition. Provide barricades, barrels, fencing and/or other barriers around excavations and trenches as required for safety. Upon completion, temporary fencing shall be removed and the affected area restored existing conditions.

## 2.7 SITE MAINTENANCE

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

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

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

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

## 2.8 TRAFFIC CONTROL

A. For all of his operations, the Contractor shall provide appropriate traffic control in accordance with, TEMPORARY FACILITIES AND CONTROLS. The purposes of the traffic control are 1) to ensure that operations in the project area are performed in a safe and orderly manner, and 2) to





minimize the impact of truck and equipment traffic and noise on adjacent homes near the project area. The Contractor shall be responsible for obtaining any and all required permits and approvals.

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

## 2.9 DEMOBILIZATION

- A. Contractor shall be responsible for site security and safety at all times. Upon substantial completion of the work, Contractor shall remove all excess materials, equipment, construction debris, temporary facilities and construction measures (fencing, signs, barriers, etc.) from the project area, and shall leave the site in suitable condition for full occupancy and use by the Owner. The sedimentation and erosion controls installed as part of the Work may not necessarily be removed at this time (see below).
- B. The Owner's Representative shall be the sole judge of whether the site has been suitably cleaned.
- C. Upon suitable stabilization of all disturbed "erodible" areas (e.g. acceptable level of grass growth in loamed and seeded areas, mulch applied and stable in planting areas, etc.), contractor shall remove and legally dispose of all sedimentation and erosion control measures (silt fence, hay bales, catch basin inserts, etc.). See Section 024119 Selective Demolition and 329200 Turf and Grasses for directives and procedures.

## PART 3 - EXECUTION

### 3.1 GENERAL REQUIREMENTS

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



### 3.2 CHANGE ORDER PROCEDURE

#### A. DESCRIPTION

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

### 3.3 CHANGE SUBMITTALS

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

### 3.4 COMPLIANCE

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

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

- A. The Owner's Representative will initiate changes only in writing. The Owner will sign any Request for Proposal (RFP). This will establish an Extra Work Order (EWO) number, by which the change will be identified until such time as it may be incorporated into the contract by formal Change Order (CO).
- B. The Contractor may or may not be authorized to proceed with the changed work pending resolution of changes in the contract price or time of performance. If the work described in the RFP becomes critical to the timely performance of the Contractor's work, a written request for a Notice to Proceed must be forwarded to the Owner immediately. The Owner will issue any Notice



to Proceed. This unilateral modification to the contract may be subject to further negotiation regarding price and time for completion.

- C. Payment for changed work, covered by an authorized modification, will not be made until a notice to proceed covering the changed work has been executed.
- D. The Contractor shall prepare and submit its proposal for change to include at a minimum:
  - 1. A cover letter referencing the EWO number and citing the attachments, if any, which constitute the Contractor's total proposal.
  - 2. A detailed price proposal showing labor, construction equipment, and material quantities and prices at the lowest practical level of each element of the work.
  - 3. Any drawings, sketches, catalog cuts, samples, certifications, or other data required to be submitted by the Owner's Representative that is required to fully document
  - 4. A statement of the proposed change in the time of completion of the contract, together with all required justification for such a change.
  - 5. A statement to the effect that there is "no change in price and/or time of completion of the work under this contract as a result of this proposed change", if that is the case.
- E. The Owner may accept the Contractor's proposal without negotiation. Alternatively, upon receipt of a proposal which is satisfactory in form, the Owner's Representative may require negotiation with the Contractor to arrive at a fair and equitable change in the contract price and time of completion. Upon agreement, a contract modification will be issued by the Owner for Contractor's execution.

### 3.6 PROCESSING CHANGES INITIATED BY THE CONTRACTOR

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

### 3.7 EXECUTING CHANGED WORK

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



### 3.8 TERMINATIONS AND DELAYS

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

### 3.9 INSPECTION OF WORK

#### A. DESCRIPTION

1. Work included in this Section consists of periodic observation of construction of the project. The Contractor's work shall be monitored periodically by the Owner's Representative
2. The Owner's Representative presence on site or construction observation work is inspectional in nature and will not include supervision or direction of the actual work of the contractor.
3. In no event will the Owner's Representative be responsible or liable for the contractor's use or administration of personnel, machinery, staging, or other temporary or precautionary construction, safety precautions or procedures, or for compliance by the contractor with the provisions, terms, or specifications of the contract. Observation services provided by the Owner's Representative are solely for the benefit of the Owner.
4. The Contractor shall keep the Owner's Representative informed concerning the work status and projected work schedule through regular communications.
5. The Contractor shall not cover any work related to the required field visits until one of the following occurs:
  - a. The Contractor is authorized by the Owner's Representative to proceed after the field visit.



- b. The field visit is re-scheduled by the Owner's Representative to a later construction event
- c. The field visit is waived in writing by the Owner's Representative
6. The Contractor shall request a Final Inspection seven calendar days in advance of the planned completion date. After review of the Notice of Completion, the Owner's Representative may reject the Notice for cause or schedule the Final Inspection. The Owner's Representative will perform its Final Inspection on all phases of the work and develop a comprehensive punch list, which will be provided to the Contractor.
7. The Final Inspection will be scheduled when the punch list items discovered during the Final Inspection have been corrected. If discovered, the Owner's Representative may add new items to the punch list at this inspection.
8. The Contractor is advised that the Owner's Representative will not accept the work until the Owner's Representative determines Substantial Completion has been achieved. Therefore, to minimize its risk, the Contractor should schedule its work to be substantially complete in time to allow the Final Inspection and punch list work to occur in advance of the Project Close Out Date. Due to the construction time period and the anticipated weather conditions, substantially complete will be defined as the completion of construction for all item and the temporary stabilization of all disturbed areas, excluding planting and final seeding. Planting and final seeding is to occur during the time periods specified..
9. Nothing in this Section shall be construed to limit the Owner's Representative right to inspect the work at any time.

### 3.10 CONSTRUCTION SCHEDULES

#### A. DESCRIPTION

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

### 3.11 CONSTRUCTION SCHEDULE

#### A. Submit the following to the Owner's Representative in accordance with the Submittals Section. Submittals are for the record or approval as indicated.

1. The proposed construction schedule shall be submitted for approval within five (5) calendar days after receipt of Notice to Proceed.
2. Submit contract Weekly Summary Reports to the Owner's Representative for the record at weekly site meeting at request by the Owner.
3. Submit construction progress schedule including a two week look ahead as back up to progress invoices.

#### B. The construction schedule shall show all work activities for completion of the work to be performed under this contract and will reflect Contractor's general sequential approach to the work. The construction schedule will be in a bar chart format. The minimum level of detail



(number of activities) shall include the activities described in the Schedule of Values and the Scope of the Work. The construction schedule shall demonstrate completion of all work within the period of performance of the contract in a reasonable and achievable manner.

### 3.12 PERIODIC SCHEDULE UPDATES

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

### 3.13 SUBMITTAL PROCEDURES

#### A. DESCRIPTION

- 1. This Specification Section covers the preparation and submission of all work plans, drawings, samples, manufacturer's literature and brochures, installation instructions, and operation and maintenance manuals as specified herein and in the various sections of these Specifications.
- 2. A Submittal Schedule shall be submitted for approval within five (5) calendar days after receipt of Notice to Proceed.

### 3.14 DRAWINGS

- A. The term "drawings" as used herein includes 'Shop Drawings' as required for fabrication, erection and installation, layout, and setting of proposed improvements; lists or schedules of materials and catalogues and brochures; performance and test data; and all other drawings and descriptive data pertaining to materials and methods of construction as may be required to show that the materials, equipment, or systems and the positions thereof conform to the requirements of the Contract Documents.



- B. Where specified and if so directed by the Owner's Representative provide shop drawings that are accompanied by design computations.
- C. Sheet sizes of drawings shall not exceed 24 in. by 36 in. The title block on all drawings shall bear the name of the Owner, the name of the project, and the project location.
- D. The Contractor's drawings shall be submitted electronically in PDF format to the Owner's Representative for review and approval.
- E. The Contractor shall maintain a complete set of construction drawings at the jobsite, clearly marked to reflect as-built conditions. Upon completion of the work, the Contractor shall submit these Record Drawings to the Owner's Representative.
- F. The Owner's Representative will review drawings and schedules only for conformance with the design of the Project and for compliance with the Contract Documents and Contract Drawings. The Contractor shall make any and all updates and corrections required by the Owner's Representative.
- G. Drawings shall be reviewed and returned within ten (10) working days of receipt of drawings at jobsite. Drawings and all supporting data, catalogs, or similar information shall be prepared by the Contractor or his suppliers and subcontractors but shall be submitted as instruments of the Contractor.
- H. The Owner's Representative review of drawings will be of a general nature and shall not relieve the Contractor from responsibility for errors and omissions of any sort, for deviations from Drawings or Specifications, or for conflict with the work of others that may result from such deviations. The Owner's Representative review of drawings will not relieve the Contractor of responsibility to complete the work in accordance with the requirements of the Contract Documents.
- I. After Notice of Award, the Contractor shall submit a Submittal Schedule to the Owner's Representative. The Contractor's schedule shall be brought up to date from time to time to show the latest changes, omissions, and additions. The Schedule will be based on the Contractor's Construction Schedule and will show when the Contractor will submit the drawings and when he/she expects them to be returned so that construction activities shown on the Construction Schedule are not interrupted. There will be a minimum of three weeks between these two activities. Specific methods and routines for handling drawing reviews shall be established in advance within the general framework of the Contract Documents.
- J. Work for which the Contractor's submittals are required shall not be started until the submittals have been reviewed and accepted in writing by the Owner or Landscape Architect. Any revision by the Contractor of a previously accepted submittal must be accepted in writing by the Owner's Representative before implementation.



### 3.15 SAMPLES

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

### 3.16 PRODUCT DATA

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

#### B. SUBMITTAL LOG

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

### 3.17 QUALITY CONTROL DESCRIPTION

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

### 3.18 WORKMANSHIP

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





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

### 3.19 MANUFACTURER'S INSTRUCTIONS

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

### 3.20 MANUFACTURER'S CERTIFICATES

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

### 3.21 TESTING LABORATORY SERVICES (NIC)

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

### 3.22 MANUFACTURER'S FIELD SERVICES

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

### 3.23 AUTHORITY OF OWNER'S REPRESENTATIVE

- A. The Owner's Representative will decide all questions that may arise as to the quality and acceptability of materials furnished. All questions that may arise as to the interpretation of the Contract Drawing and Specifications shall be determined by the Owner's Representative.
- B. The Owner and Owner's Representative shall not be responsible for the Contractor's means, methods, techniques, sequences, or procedures of construction or the safety precautions and programs incident thereto, and the Owner's Representative will not be responsible for the Contractor's failure to perform the work in accordance with the Contract Documents.
- C. The Owner's Representative will not be responsible for the acts or omissions of the Contractor or any subcontractors, of the agents or employees of any Contractor or subcontractor, or of any other persons at the site or otherwise performing any of the work.



### 3.24 COORDINATION OF DRAWINGS AND SPECIFICATIONS

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

### 3.25 COOPERATION WITH UTILITIES

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

### 3.26 INDEPENDENT TESTING AND INSPECTION (NIC)

- A. Not Applicable under this Contract

### 3.27 REQUIREMENTS

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



### 3.28 MATERIAL AND EQUIPMENT

#### A. DESCRIPTION

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

### 3.29 MANUFACTURER REQUIREMENTS

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

### 3.30 TRANSPORTATION AND HANDLING

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

### 3.31 STORAGE AND PROTECTION

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



### 3.32 SUBSTITUTIONS

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

### 3.33 REJECTED MATERIALS AND DEFECTIVE WORK

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

### 3.34 PROJECT CLOSEOUT

- A. DESCRIPTION



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

### 3.35 WARRANTIES

#### A. DESCRIPTION

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



relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

## B. DEFINITIONS

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

## C. WARRANTY REQUIREMENTS

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



D. WARRANTY PERIOD

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

END OF SECTION 010000



## SECTION 015639 - TEMPORARY TREE AND PLANT PROTECTION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes general protection and pruning of existing trees and plants that are affected by execution of the Work, whether temporary or permanent construction.
- B. Related Requirements:
  - 1. Section 024119 - Selective Demolition

#### 1.3 DEFINITIONS

- A. (DBH): Diameter breast height; diameter of a trunk as measured by the average of the smallest and largest diameters at a height **54 inches** above the ground line for trees with caliper of **8 inches** or greater as measured at a height of **12 inches** above the ground.
- B. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction and indicated on Drawings.
- C. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction and indicated on Drawings defined by a circle concentric with each tree with a radius 1.5 times the diameter of the drip line unless otherwise indicated .
- D. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

#### 1.4 PRE- CONSTRUCTION MEETINGS

- A. Pre-construction Conference: Conduct conference at Project site .
  - 1. Review methods and procedures related to temporary tree and plant protection including, but not limited to, the following:
    - a. Tree-service firm's personnel, and equipment needed to make progress and avoid delays.





- b. Arborist's responsibilities.
- c. Coordination of Work and equipment movement with the locations of protection zones.
- d. Trenching by hand or with air spade within protection zones.
- e. Field quality control and maintenance.
- f. Coordination by Parks Department City Forester and Forestry crews.

## 1.5 ACTION SUBMITTALS

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

## 1.6 QUALITY ASSURANCE

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

## 1.7 FIELD CONDITIONS

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

## PART 2 - PRODUCTS

### 2.1 MATERIALS

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



- B. Organic Mulch: Free from deleterious materials and suitable as a top dressing for trees and shrubs, consisting of one of the following:
1. Type: .Ground or shredded bark .
  2. Size Range: **3 inches** maximum, **1/2 inch** minimum .
  3. Color: Natural. - no orange or dyed mulch.
- C. Protection-Zone Fencing: Fencing fixed in position and meeting the following requirements:
1. Plastic Protection-Zone Fencing: Plastic construction fencing constructed of high-density extruded and stretched polyethylene fabric with **2-inch** maximum opening in pattern and weighing a minimum of **0.4 lb/ft.**; remaining flexible from **minus 60 to plus 200 deg F**; inert to most chemicals and acids; minimum tensile yield strength of **2000 psi** and ultimate tensile strength of **2680 psi**; secured with plastic bands or galvanized-steel or stainless-steel wire ties; and supported by tubular or T-shape galvanized-steel posts spaced not more than **96 inches** apart.
    - a. Height: 72 inches .
    - b. Color: High-visibility orange, nonfading.
  2. Tree Trunk Protection: 2"x3" or 2"x4" softwood lumber wrapped around tree with wire ties or strapping

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.
- B. Tree-Protection Zones: Mulch areas inside tree-protection zones and other areas indicated. Do not exceed indicated thickness of mulch.
1. Apply **2-inch** uniform thickness of organic mulch unless otherwise indicated. Do not place mulch within **6 inches** of tree trunks.

### 3.2 PROTECTION ZONES

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



- B. Maintain protection zones free of trash.
- C. Maintain protection-zone fencing in good condition as acceptable by Owner's Representative and remove when construction operations are complete and equipment has been removed from the site.
  - 1. Do not remove protection-zone fencing, even temporarily, to allow deliveries or equipment access through the protection zone.
  - 2. Temporary access is permitted subject to preapproval in writing by Owner's Representative if a root buffer effective against soil compaction is constructed as directed by Owner's Representative. Maintain root buffer so long as access is permitted.

### 3.3 EXCAVATION

- A. General: Excavate at edge of protection zones and for trenches indicated within protection zones according to requirements in Section 312000 "Earth Moving" unless otherwise indicated.
- B. Redirect roots in backfill areas where possible. If encountering large, main lateral roots, expose roots beyond excavation limits as required to bend and redirect them without breaking. If encountered immediately adjacent to location of new construction and redirection is not practical, cut roots approximately **3 inches** back from new construction and as required for root pruning.
- C. Do not allow exposed roots to dry out before placing permanent backfill. Provide temporary earth cover and wrap with dampened burlap. Water and maintain in a moist condition. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil or as directed by Owner's Representative.

### 3.4 ROOT PRUNING

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



narrow-tine spading forks to comb soil to expose roots. Cleanly cut roots as close to excavation as possible.

### 3.5 REGRADING

- A. Lowering Grade: Where new finish grade is indicated below existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.
- B. Lowering Grade within Protection Zone: Where new finish grade is indicated below existing grade around trees, slope grade away from trees as recommended by Owner's Representative unless otherwise indicated.
  - 1. Root Pruning: Prune tree roots exposed by lowering the grade. Do not cut main lateral roots or taproots; cut only smaller roots. Cut roots as required for root pruning.
- C. Raising Grade: Where new finish grade is indicated above existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.
- D. Minor Fill within Protection Zone: Where existing grade is **2 inches** or less below elevation of finish grade, fill with backfill soil. Place backfill soil in a single uncompacted layer and hand grade to required finish elevations.

### 3.6 REPAIR AND REPLACEMENT

- A. General: Repair or replace trees, shrubs, and other vegetation indicated to remain or to be relocated that are damaged by construction operations, in a manner approved by Owner's Representative.
  - 1. Submit details of proposed pruning and repairs.
  - 2. Perform repairs of damaged trunks, branches, and roots within 24 hours according to arborist's written instructions.
  - 3. Replace trees and other plants that cannot be repaired and restored to full-growth status, as determined by Owner's Representative. Replacement trees to be equal to the total diameter of mature tree by multiple equal diameter specimens.
- B. Trees: Remove and replace trees tha damaged during construction operations that Owner's Representative determines are incapable of restoring to normal growth pattern.
  - 1. Small Trees: Provide new trees of same size and species as those being replaced for each tree that measures 4" or smaller in caliper size.
  - 2. Large Trees: Provide multiple trees of 2-1/2" - 3" caliper size to equal total diameter of tree being replaced. .
    - a. Species: As determined by Owner's Representative.
  - 3. Plant and maintain new trees as specified in Section 329300 "Plants."



- C. Excess Mulch: Rake mulched area within protection zones, being careful not to injure roots. Rake to loosen and remove mulch that exceeds a 2-inch <insert dimension> uniform thickness to remain.
- D. Soil Aeration: Where directed by Owner's Representative, aerate surface soil compacted during construction. Aerate to loosen soil 10 feet beyond drip line and no closer than 36" to tree trunk with air spade.

### 3.7 DISPOSAL OF SURPLUS AND WASTE MATERIALS

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

END OF SECTION 015639



## SECTION 024119 - SELECTIVE DEMOLITION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:

- 1. Demolition and removal of selected site elements.

- B. Related Requirements:

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

#### 1.3 DEFINITIONS

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

#### 1.4 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.



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

#### 1.5 PRE-CONSTRUCTION MEETINGS

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

#### 1.6 INFORMATIONAL SUBMITTALS

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

#### 1.7 FIELD CONDITIONS

- A. Owner will occupy portions of the site immediately adjacent to selective demolition area. Conduct selective demolition so Owner's use will not be disrupted.



- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
  - 1. Before selective demolition, Owner will remove the items specifically indicated on the drawings
- C. Notify Owner's Representative of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
  - 1. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.
- E. Storage or sale of removed items or materials on-site is not permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

#### 1.8 WARRANTY

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

#### 1.9 COORDINATION

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

### PART 2 - PRODUCTS

#### 2.1 PERFORMANCE REQUIREMENTS

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





## PART 3 - EXECUTION

### 3.1 EXAMINATION

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

### 3.2 PROTECTION

- A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
  - 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of the site.
  - 2. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
  - 3. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."
- B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
  - 1. Strengthen or add new supports when required during progress of selective demolition.



- C. Remove temporary barricades and protections where hazards no longer exist.

### 3.3 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
  - 1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
  - 2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
  - 3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
  - 4. Maintain adequate ventilation when using cutting torches.
  - 5. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
  - 6. Dispose of demolished items and materials promptly and legally off site.
- B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

### 3.4 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

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



### 3.5 DISPOSAL OF DEMOLISHED MATERIALS

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

### 3.6 CLEANING

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

END OF SECTION 024119



## SECTION 031000 - CONCRETE FORMING AND ACCESSORIES

### PART 1 - PART 1 - GENERAL

#### 1.1 DESCRIPTION:

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

#### 1.2 RELATED WORK SPECIFIED ELSEWHERE

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

#### 1.3 QUALITY ASSURANCE:

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

#### 1.4 STORAGE OF MATERIALS:

- A. Store materials on and under protective sheeting.

#### 1.5 COORDINATION:

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

### PART 2 - PART 2 - PRODUCTS

#### 2.1 MATERIALS:

- A. Forms:



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

### PART 3 - PART 3 - EXECUTION

#### 3.1 CONSTRUCTION AND ERECTION:

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

#### 3.2 INSERTS AND ACCESSORIES:

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

#### 3.3 REMOVAL OF FORMS AND SHORING:

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

#### 3.4 CLEANUP:

- A. Remove debris and trash.

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SECTION 031000 -  
CONCRETE FORMING AND  
ACCESSORIES

END OF SECTION 031000



## SECTION 032000 - CONCRETE REINFORCING

### PART 1 - PART 1 - GENERAL

#### 1.1 DESCRIPTION:

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

#### 1.2 RELATED WORK SPECIFIED ELSEWHERE:

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

#### 1.3 DELIVERY AND STORAGE:

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

#### 1.4 REFERENCE STANDARDS:

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



1.5 SUBMITTALS:

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

PART 2 - PART 2 - PRODUCTS

2.1 MATERIALS:

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

2.2 FABRICATION:

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

PART 3 - PART 3 - EXECUTION

3.1 INSTALLATION:

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

3.2 WELDING REINFORCEMENT:

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





3.3 CLEANUP:

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

END OF SECTION 032000



## SECTION 033000 - CAST-IN-PLACE CONCRETE

### PART 1 - PART 1 – GENERAL

#### 1.1 RELATED INFORMATION

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

#### 1.2 SUBMITTALS:

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

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

#### 1.3 COORDINATION:

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



#### 1.4 QUALITY ASSURANCE

- A. Concrete Testing
  - 1. Prepare samples by each application crew using the equipment, materials and mix proportions proposed for the Project.
- B. Acceptance: Final acceptance of the cast-in-place concrete will be based upon Skate Park Architect's approval.
- C. Regulatory Requirements: Meet requirements of applicable laws, codes, and regulations required by authorities having jurisdiction over Work.
- D. Contractor Samples:
  - 1. Samples shall be completed to the satisfaction of the aggregates, texture, color, and finishes to Landscape Architect. These samples will become the standard of quality by which future paving samples and work will be judged.
  - 2. Samples to remain on-site and be protected during the course of construction, as a means to compare work in progress.
- E. Concrete Manufacturer Qualifications: Manufacturer of ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.
- F. Contractor Experience: Provide evidence to indicate successful experience in providing cast-in-place concrete work for skate parks similar in scope to that specified herein and can demonstrate successful experience through past project documentation and references.
- G. Required Experience: Contractor or Subcontractor must have completed (3) public concrete skate park facilities in the last 5 years. Parks must be open and in good operating condition for at least one year.
- H. Evidence of Experience: Contractor or Subcontractor shall submit to Skate Park Architect satisfactory documentation of the aforementioned experience and qualification. If a Contractor cannot provide this information or if it is unverifiable, work under this Section and any other related Section cannot be completed by Contractor. This submission must contain the Project Name & Location, Owner's Name & Contact Information, Architect Name & Contact Information, Project Size, Contract Value, Completion Date, and Supervisor and/or Key Personnel responsible for this experience for each of the qualifying projects.
- I. Safety and Performance Guidelines: Comply with all safety and performance requirements and all applicable references as specified in the ASTM F2480 Standard Guide for In-ground Skate Parks.



1.5 REFERENCE STANDARDS:

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

1.6 JOB CONDITIONS:

- A. Environmental Conditions: Submit plan to monitor wind velocity, relative humidity, temperature, and concrete temperature in order to maintain specified maximum rate of evaporation.
- B. Coordination:
  - 1. Coordinate schedules of concrete pours to allow adequate time for installation of other related work.
  - 2. Verify that anchor bolts and other embedded steel items to be cast into concrete are properly placed.
  - 3. Coordinate size and location of mechanical and electrical equipment concrete pads.
  - 4. Coordinate earthwork requirements with placement requirements.
  - 5. Coordinate with form-work and finishes sections to provide finish floor levelness and flatness as specified herein. Slope to drains at grades and percent slope shown on contract documents.



## PART 2 - PART 2 – PRODUCTS

### 2.1 MATERIALS:

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

### 2.2 PROPORTIONS AND MIXING:

- A. Proportions and Design: In accordance with approved mix design.
  - 1. Min. All. Comp. Strength (28 days):
  - 2. 4000 PSI
- B. Admixture: No admixtures without approval. Introduce admixtures in quantities and according to methods recommended by admixture manufacturer. Add air-entraining agent to concrete as scheduled.
- C. Slump: Not to exceed 3 ½”
- D. Mixing: Ready mixed concrete in accordance with ASTM C-94. Do not transport or use concrete after 1-1/2 hours have elapsed from time of initial mixing. Supplier of transit-mixed concrete shall have a plant of sufficient capacity, and adequate transportation facilities to assure continuous delivery at required rate, to provide continuous concrete placement throughout a pour.
- E. Grout and Dry Pack: Non-Shrink, Non-Metallic: U.S. Grout Corp. “Five Star Grout” ASTM C-877, C-191, and C-109, 5,000 PSI.

### 2.3 CURING MATERIALS:

- A. Water: Domestic Quality, clear and potable with no chemical content.



- B. Sheet Material: ASTM C171. Moisture loss maximum .055 g/ cm sq. Color: White.
- C. Curing Compounds: Cure/ Seal: Curecrete Ashford Formula or equal.

### PART 3 - PART 3 – EXECUTION

#### 3.1 INSPECTION:

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

#### 3.2 INSTALLATION:

##### A. Placing Concrete:

1. Convey and place concrete allowing no separation of ingredients in accordance with ACI 304 and as specified below.
2. Maximum height of concrete free fall: five-feet.
3. Regulate rate of placement to maintain plasticity and flow into position.
4. Deposit concrete continuously until panel or section is completed.
5. Place concrete in horizontal layers 18" maximum thickness.

##### B. Consolidation:

1. Use mechanical vibrating equipment for consolidation.
2. Vertically insert and remove hand-held vibrators at 18" o.c. for 10 to 15 seconds.
3. Do not use vibrators to transport concrete in forms.
4. Provide vibrators with minimum speed of 8000 RPM and with amplitude to consolidate effectively.
5. Thoroughly consolidate concrete and work around reinforcement, embedded items and into corners of forms. Thoroughly consolidate layers of concrete with previous layers.

##### C. Construction Joints:

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



D. Expansion Joint Fillers:

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

3.3 CLEAN UP:

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

END OF SECTION 033000



## SECTION 033713 - SHOTCRETE

### PART 1 - PART 1 – GENERAL

#### 1.1 SCOPE

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

#### 1.2 RELATED INFORMATION

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

#### 1.3 QUALITY ASSURANCE

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





- a. Cut cores from the structure and test in accordance with ASTM C42. A set of three (3) cores shall be taken not less than once each shift nor less than one for each 50 cubic yards of shotcrete placed through the nozzle. Cores shall be soaked in water for a minimum of 40 hours before testing.
  - b. When the length of a core is less than twice the diameter, apply the correction factors given in ASTM C42 to obtain the compressive strength of individual cores. The average compressive strength of three cores taken from the structure, representing a shift or 50 cubic yards of shotcrete, must equal or exceed  $0.85f_c$  with no individual core less than  $0.75f_c$ .
- E. Acceptance: Final acceptance of the shotcrete will be based upon the results obtained from cores. Use of data obtained from impact devices will not be permitted for final acceptance of the shotcrete. However, these data may be useful for determining uniformity of the shotcrete.

#### 1.4 QUALITY ASSURANCE

- A. Concrete Testing: Prepare samples by each application crew using the equipment, materials and mix proportions proposed for the Project.
- B. Acceptance: Final acceptance of the shotcrete will be based upon Skate Park Architect's approval.
- C. Regulatory Requirements: Meet requirements of applicable laws, codes, and regulations required by authorities having jurisdiction over Work.
- D. Contractor Samples:
  1. Contractor shall prepare a sample for each slab type indicated on Drawings, prior to installation.
  2. Samples shall be completed to the satisfaction of the aggregates, texture, color, and finishes to Skate Park Architect.
  3. These samples will become the standard of quality by which future paving samples and work will be judged.
  4. Samples to remain on-site and be protected during the course of construction, as a means to compare work in progress.
- E. Concrete Manufacturer Qualifications: Manufacturer of ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.
- F. Contractor Experience: Provide evidence to indicate successful experience in providing cast-in-place concrete work for skate parks similar in scope to that specified herein and can demonstrate successful experience through past project documentation and references.
- G. Required Experience: Contractor or Subcontractor must have completed (3) public concrete skate park facilities in the last 5 years. Parks must be open and in good operating condition for at least one year.



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

#### 1.5 SUBMITTALS

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

#### 1.6 DELIVERY, HANDLING, AND STORAGE

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



## PART 2 - PART 2 - PRODUCTS

### 2.1 CONCRETE MATERIALS

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

### 2.2 ACCESSORIES

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

### 2.3 PROPORTIONING AND DESIGN OF CONCRETE MIXES

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



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

## 2.4 CONCRETE APPLICATION EQUIPMENT

### A. For Wet Mix Shotcrete:

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

## PART 3 - PART 3 -EXECUTION

### 3.1 INSPECTION

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

### 3.2 PREPARATION FOR INSTALLATION OF CONCRETE

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

### 3.3 CONCRETE BATCHING AND MIXING

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



### 3.4 CONCRETE PLACEMENT

- A. Placement: Use suitable delivery equipment and procedures that will result in shotcrete in place meeting the requirements of this Specification. Determine operating procedures for placement in, extended distances, and around any obstructions where placement velocities and mix consistency must be adjusted.
- B. Placement Techniques: Do not place shotcrete if drying or stiffening of the mix takes place at any time prior to delivery to the nozzle.
  - 1. Control thickness, method of support, air pressure, and/or water content of shotcrete to preclude sagging or sloughing off. Discontinue shotcreting or provide suitable means to screen the nozzle stream if wind or air currents cause separation of the nozzle stream during placement.
  - 2. Hold nozzle as perpendicular to surface as work will permit, to secure maximum compaction with minimum rebound.
  - 3. In shotcreting walls, begin application at bottom. Ensure work does not sag.
  - 4. Layering:
    - a. Build up layers by making several passes of nozzle over work area.
    - b. Broom or scarify the surface of freshly placed shotcrete to which, after hardening, additional layers of shotcrete are to be bonded. Dampen surface just prior to application of succeeding layers.
    - c. Allow each layer of shotcrete to take initial set before applying succeeding layers.
    - d. Use radial templates to insure exact radii from flat bottom of skate park, deck and coping. Template shall be fabricated from steel or ¾" Plywood. Contractor to submit shop drawing for all templates to be used on the project.
  - 5. Placement Around Reinforcement:
    - a. Hold the nozzle at such distance and angle to place materials behind reinforcement before any material is allowed to accumulate on its face. In the dry-mix process, additional water may be added to the mix when encasing reinforcement to facilitate a smooth flow of material behind the bars.
    - b. Test to ascertain if any void or sand pockets have developed around or behind reinforcement by probing with an awl or other pointed tool after the shotcrete has achieved its initial set, by removal of randomly selected bars, or coring or other suitable standards.

### 3.5 REMOVAL OF SURFACE DEFECTS IN CONCRETE

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



### 3.6 CONCRETE FINISH

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

### 3.7 CONCRETE JOINTS

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

### 3.8 STEEL COPING

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

### 3.9 CONCRETE CURING AND PROTECTION

- A. Initial Curing: Immediately after finishing, keep shotcrete continuously moist for at least 24 hours. Use one of the following materials or methods:
  - 1. Ponding or continuous sprinkling.
  - 2. Cover and keep continuously wet.
- B. Final Curing: Provide additional curing immediately following the initial curing and before the shotcrete has dried. Use one of the following materials or methods:
  - 1. Continue the method used in initial curing.
  - 2. Materials conforming to "Specifications for Sheet Materials for Curing Concrete", (ASTM C 171).
- C. Duration of Curing: Continue for the first 7 days after shotcreting or until specified strength is obtained. During the curing period, maintain shotcrete above 40 degrees and in a moist condition. Prevent rapid drying at the end of the curing period.

Providence Parks Department  
Woonasquatucket Adventure  
Park Phase II



SECTION 033713 -  
SHOTCRETE

END OF SECTION 033713



## SECTION 033900 - CONCRETE CURING

### PART 1 - PART 1 - GENERAL

#### 1.1 DESCRIPTION

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

#### 1.2 RELATED WORK

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

#### 1.3 DELIVERY AND STORAGE

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

### PART 2 - PRODUCTS

#### 2.1 MATERIALS

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

### PART 3 - EXECUTION

#### 3.1 CURING

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





1. Remove debris and trash resulting from specified work.

END OF SECTION 033900



## SECTION 047200 - CAST STONE MASONRY

### PART 1 - GENERAL

#### 1.1 SECTION INCLUDES

- A. CAST STONE MASONRY: Wet Cast Method: Performance criteria, materials, design, production, and installation.
1. Cast Stone items a. Precast concrete block bench with integral stainless steel tube nosing
  2. Mold materials
  3. Cast stone masonry materials
  4. Concrete mixtures
  5. Mold fabrication
  6. Cast stone fabrication
  7. Fabrication tolerances
  8. Finishes.
  9. Anchors and connectors
  10. Grouts and sealants

#### 1.2 REFERENCES

- A. ASTM International (ASTM):
1. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.
  2. ASTM C33/C33M - Standard Specification for Concrete Aggregates.
  3. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar.
  4. ASTM C150/C150M - Standard Specification for Portland Cement.
  5. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete.
  6. ASTM C979/C979M - Standard Specification for Pigments for Integrally Colored Concrete.
  7. ASTM A185 - Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete.
  8. ASTM A615/A 615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Reinforced Concrete.
  9. ASTM C231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
  10. ASTM C260 - Standard Specification for Air-Entrained Admixtures for Concrete.
  11. ASTM C666 - Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing.
  12. ASTM C1116 - Standard Specification for Fiber Reinforced Concrete and Shotcrete.



13. ASTM C1194 - Standard Test Method for Compressive Strength of Architectural Cast Stone.

B. Precast/Prestressed Concrete Institute (PCI)

1. PCI MNL 117 - Manual for Quality Control for Plants and Production of Architectural Precast Concrete Products
2. PCI MNL 120 - PCI Design Handbook - Precast and Prestressed Concrete

### 1.3 DEFINITIONS

A. Cast Stone: Refined architectural concrete building unit manufactured to simulate natural cut stone, used in Division 4 masonry applications.

### 1.4 SUBMITTALS

A. Submit under provisions of Section 010000 General Requirements

B. Product Data: For each product.

1. Cast Stone Masonry design mixes.
2. Manufacturer's data sheets on each product to be used.
3. Preparation instructions and recommendations.
4. Storage and handling requirements and recommendations.
5. Typical installation methods.

C. Shop Drawings: Fabrication and installation details for Cast Stone materials.

1. Elevations, sections, and dimensions.
2. Reinforcement details.
3. Finishes.
4. Joint and attachment details.
5. Connection Hardware Attached to Structure: Locations and details.
6. Items cast into stones.
7. Erection sequences.
8. Relationship to adjacent materials.
9. Loose, cast-in, and field hardware.

D. Verification Samples: 12 by 12 inches (305 by 305 mm). For expose surface finishes. Representative of finish, color, and texture expected.

E. Delegated-Design Submittal: Product analysis and data signed and sealed to the City Representative.

F. Qualification Data: For manufacturer.



- G. Source Quality-Control Program: For Cast Stone Masonry manufacturer.
  - 1. Test Reports: For inserts, and anchors.

#### 1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Designated an APA-certified plant for Cast Stone Masonry production.
- B. Installer Qualifications: Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.
- C. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Handle and transport Cast Stone masonry on protective material and with protective spacers between stones.
- B. Store Cast Stone off ground on sturdy pallets, supported on protective material and with protective resilient spacers between stones. Place stored stones so identification marks are clearly visible.
- C. Prevent prolonged contact of materials that retain moisture.

### PART 2 - PRODUCTS

#### 2.1 PRECAST CONCRETE BLOCK BENCH WITH INTEGRAL STAINLESS STEEL TUBE NOSING

- A. MANUFACTURER
  - 1. DeVinci PreCast 4520 S. MacArthur Blvd Oklahoma City, OK 73179 Tele 405-680-5600  
[www.devinciprecast.com](http://www.devinciprecast.com)
  - 2. or approved equal.
- B. Build precast concrete block bench as shown in plan details, installed on a compacted gravel base with a minimum of 12 inches of the bench buried below grade.
- C. Bench dimensions above grade shall be 18" in height and 36" in width and shall have a steel trowel finish and natural finish without colorant (confirm).



- D. Bench length dimensions vary according to location on plan. The length dimension shall include a stainless steel tube nosing (or coping) integral to the concrete. This nosing is known as a grind rail, making the bench resilient to skateboard impacts.
1. The nosing (coping) shall be anchored in the concrete bench using a stainless steel hook anchor or Nelson stud of minimum size (4" x 3/8") as shown in detail.
  2. The nosing (coping) shall be 1"x1" having a 1/8" tooled joint continuous along top and bottom of coping, which shall be filled with an elastomeric sealant.

## 2.2 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Cast Stone materials must withstand design loads and dimensional changes due to thermal and moisture extreme, as governed by applicable codes and standards.

## 2.3 MOLD MATERIALS

- A. Molds: Rigid, dimensionally stable, non-absorptive alkali resistant, warp, and buckle free. Provide continuous surfaces within tolerances; and capable of producing required finish surfaces.
1. Mold-Release Agent: Commercial liquid-release. Must not bond with, stain, or affect cast stone surfaces.

## 2.4 CAST STONE MASONRY MATERIALS

- A. Portland Cement: ASTM C150/C150M; Type I, II, or III. Surfaces Exposed to View in Finished Structure: Use white of same type, brand, and source throughout Cast Stone production.
- B. Coarse Aggregates: ASTM C33, except for gradation.
- C. Fine Aggregates: Manufactured or natural sands, ASTM C33, except for gradation.
- D. Air Entraining Admixtures: Conforming to ASTM C260.
- E. Water: Potable.
- F. Reinforcing Bars: ASTM A615/A615M: Grades 40 or 60 steel galvanized, or epoxy coated when cover is less than 1.5 inches (38 mm).
- G. Fiber Reinforcement: ASTM C1116. tbd
- H. Coloring Admixture: ASTM C979/C979M, synthetic mineral-oxide pigments or colored water-reducing admixtures, temperature stable, nonfading, and alkali resistant.
1. Color: As determined by the City Representative.



2. Color: As detailed on the Drawings.
3. Color: \_\_tdb\_\_\_\_\_.

- I. Potable Water: No material affecting color stability, setting, or strength.
- J. Chemical Admixtures: ASTM C494/C494M, containing 0.1 percent or less chloride ions.
- K. Cast Stone Masonry Physical Material Properties as Follows:
  1. Compressive Strength per ASTM C1194: 6,500 psi (44.82 MPa) at 28 days.
  2. Air Content per ASTM C231: 4 to 8 percent for freeze thaw protection.
  3. Absorption: 6 percent maximum; cold water method.
  4. Freeze-thaw: CPWL less than 5 percent after 300 cycles.

## 2.5 CONCRETE MIXTURES

- A. Prepare design mixtures for each type of cast stone material required.
- B. Design mixtures shall be prepared by qualified plant personnel or may be formulated by independent outside qualified laboratories.

## 2.6 MOLD FABRICATION

- A. Mold Construction: To result in finished Cast Stone with profiles, dimensions, and tolerances indicated, without damaging cast stones during stripping. Prevent water leakage and loss of cement paste.
- B. Wash or Slope on horizontal surfaces where possible.
- C. Drips on projections where possible to protect staining below.
- D. Maintain molds to provide completed Cast Stone units of shapes, lines, and dimensions indicated, within fabrication tolerances specified.
  1. Coat contact surfaces of molds with form-release agent.

## 2.7 FABRICATION

- A. Manufacturing Process: Wet Cast
- B. Reinforcement: Comply with recommendations in PCI MNL 117 for fabricating, placing, and supporting reinforcement.



1. Accurately position, support, and secure reinforcement against displacement during concrete-placement and consolidation operations. Completely conceal support devices to prevent exposure on finished surfaces.
  2. Install welded wire reinforcement in lengths as long as practicable. Lap adjoining pieces at least one full mesh spacing and wire tie laps, where required by design. Offset laps of adjoining widths to prevent continuous laps in either direction.
- C. Comply with requirements in PCI MNL 117 and requirements in this Section for measuring, mixing, transporting, and placing concrete. After concrete batching, no additional water may be added.
- D. Place concrete in a continuous operation to prevent cold joints or planes of weakness from forming in precast concrete units.
- E. Thoroughly consolidate placed concrete by internal and external vibration without dislocating or damaging reinforcement and built-in items, and minimize pour lines, honeycombing, or entrapped air voids on surfaces. Use equipment and procedures complying with PCI MNL 117.
- F. Cure concrete: According to requirements in PCI MNL 117. Cure units until compressive strength is high enough to ensure that stripping does not influence performance or appearance of final product.
- G. Discard and replace architectural precast concrete units that do not comply with requirements.
- H. Panel Identification: Mark stones with identification marks on Shop Drawings. Mark casting date on each piece.

## 2.8 FABRICATION TOLERANCES

- A. Variation in Cross Section: Do not vary from indicated dimensions by more than 1/8 inch (3 mm).
- B. Variation in Length: Do not vary from indicated dimensions by more than 1/360 of the length of unit or 1/8 inch (3 mm), whichever is greater, but in no case by more than 1/4 inch (6 mm).
- C. Warp, Bow, and Twist: Not to exceed 1/360 of the length of unit or 1/8 inch (3 mm), whichever is greater.
- D. Location of Grooves, False Joints, Holes, Anchorages, and Similar Features: Do not vary from indicated position by more than 1/8 inch (3 mm) on formed surfaces of units and 3/8 inch (10 mm) on unformed surfaces.

## 2.9 FINISHES

- A. Exposed Faces: Free of joint marks, grain, and obvious defects.



- B. Corners Including False Joints: Uniform, straight, and defined.
- C. Finish exposed-face surfaces of Cast Stone to match approved design reference sample or mockups and GFRC and Architectural Precast where intent is to match finish.
  - 1. As-Cast-Surface Finish: Surfaces to match approved sample for acceptable surface, air voids, sand streaks, and honeycomb, with uniform color and texture.
  - 2. Retarded Finish: Use chemical-retarding agents applied to concrete forms and washing and brushing procedures to expose aggregate and surrounding matrix surfaces after form removal.
  - 3. Acid-Etched Finish: Use acid and hot-water solution equipment, application techniques, and cleaning procedures to expose fine aggregate and surrounding matrix surfaces.

## 2.10 SOURCE QUALITY CONTROL

- A. Quality-Control Testing: Test and inspect precast concrete according to PCI MNL 117 requirements. If using self-consolidating concrete, also test and inspect according to PCI TR-6, ASTM C1610/C1610M, ASTM C1611/C1611M, ASTM C1621/C1621M, and ASTM C1712.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly constructed and prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect in writing of unsatisfactory preparation before proceeding.

### 3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

### 3.3 ERECTION

- A. Install clips, hangers, and other accessories required for connecting Cast Stone materials to supporting members and backup materials.
- B. Install Cast Stone level, plumb, square, and in alignment. Provide temporary supports and bracing as required.





1. Maintain horizontal and vertical joint alignment and uniform joint width.
- C. Wet joint surfaces thoroughly before applying mortar or setting in mortar.
- D. Set units in full bed of mortar with full head joints unless otherwise indicated.
  1. Fill dowel holes and anchor slots with mortar.
- E. Comply with Noncumulative Tolerances:
  1. Variation from Plumb: Do not exceed 1/8 inch in 10 feet (3 mm in 3 m), 1/4 inch in 20 feet (6 mm in 6 m), or 1/2 inch (12 mm) maximum.
  2. Variation from Level: Do not exceed 1/8 inch in 10 feet (3 mm in 3 m), 1/4 inch in 20 feet (6 mm in 6 m), or 1/2 inch (12 mm) maximum.
  3. Variation in Joint Width: Do not vary joint thickness more than 1/8 inch in 36 inches (3 mm in 900 mm) or one-fourth of nominal joint width, whichever is less.
  4. Variation in Plane between Adjacent Surfaces (Lipping): Do not vary from flush alignment with adjacent units or adjacent surfaces indicated to be flush with units by more than 1/16 inch (1.5 mm), except where variation is due to warpage of units within tolerances specified.

### 3.4 REPAIRS

- A. Maintain structural adequacy of panel do not impair appearance. Must be approved by Architect.
- B. Patches must blend with color, texture, and uniformity of adjacent exposed surfaces.
- C. Remove and replace damaged Cast Stone material if repairs do not comply with requirements.

### 3.5 CLEANING AND PROTECTION

- A. Clean per Cast Stone manufacturer's written instructions.
  1. Soiled Surfaces: Clean with detergent and water, with soft fiber brushes and sponges. Rinse with clean water.
  2. Prevent damage to Cast Stone surfaces

END OF SECTION 047200



## SECTION 055000 - METAL FABRICATIONS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes construction and contractor requirements for inclusive assembly and installation of the following:
1. Architectural half moon steel trellis Poligon of Holland, MI tele 616-399-1963 [www.poligon.com](http://www.poligon.com) Building type TREF 8 feet X 10 feet Latilla roof type or approved equal.
    - a. The City of Providence will purchase the half-moon steel trellis; the Contractor should work with the Owner Representative to coordinate delivery and installation of the trellis to the site.
  2. Architectural rectangular steel trellis Poligon of Holland, MI tele 616-399-1963 [www.poligon.com](http://www.poligon.com) Building type CON-22 22 feet X 11 feet 3 inches or approved equal
  3. Vehicular gate as shown in plans
  4. Steel Pipe Bollard as shown in plans

#### 1.2 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Structural steel shall be detailed and erected in accordance with the latest edition of the American Institute of Steel Construction (AISC) Specification Manual.

#### 1.3 SUBMITTALS

- A. Product Data: Submit product data for the following:
1. Manufacturer's information for rectangular and half moon steel trellises
  2. Bicycle Rack
  3. Grout
  4. Paint product
- B. Shop Drawings: Submit shop drawings detailing the fabrication and erection of each metal fabrication indicated. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.
- C. For installed products indicated to comply with design loads, include structural analysis data.



#### 1.4 QUALITY ASSURANCE

- A. Fabricator/Installer Qualifications: A firm experienced in producing metal fabrications similar to those indicated for this Project for a minimum of 5 years, with a record of successful in-service performance, with sufficient production capacity to produce required units without causing delay in the work.
- B. Welding: qualify procedures and personnel according to the following:
  - 1. AWS D1.1, "Structural Welding Code--Steel."
  - 2. AWS D1.3, "Structural Welding Code--Sheet Steel."
- C. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.
- D. Determination of built structure to accommodate snow and other loads.

#### 1.5 STORAGE, DELIVERY AND HANDLING

- A. Store metal fabrications to prevent any type of damage to the fabricated work.

#### 1.6 PROJECT CONDITIONS

- A. Field Measurements: Where metal fabrications are indicated to fit with other constructed elements, verify dimensions by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- B. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating metal fabrications without field measurements. Coordinate construction to ensure that actual dimensions correspond to established dimensions. Allow for trimming and fitting. Coordinate installation of anchorages for metal fabrications. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

### PART 2 - PRODUCTS

#### 2.1 METALS, GENERAL

- A. Metal Surfaces, General: For metal fabrications exposed to view in the completed Work, provide materials with smooth, flat surfaces without blemishes.



- B. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.

## 2.2 FERROUS METALS

- A. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- B. Cold Finished Steel Bars: ASTM A108, grade as selected by fabricator.
- C. Steel Tubing: Cold-formed steel tubing complying with ASTM A 500, or hot formed steel tubing complying with ASTM A 501.
- D. Steel Pipe: ASTM A 53, standard weight (Schedule 40) minimum, unless otherwise indicated or required to satisfy the performance requirements; finish as follows:
  - 1. Black finish, unless otherwise indicate.
  - 2. Galvanized finish for exterior installations, and where indicated.
- E. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded

## 2.3 BICYCLE RACK

- A. Bicycle racks shall be the surface mounted U/2 Inverted-U Rack Vintage Racks as manufactured by Cycle-Safe, Incorporated, 4630 Ada Drive, Suite B, Ada, MI 49301, 888-950-6531, or approved equal, at the locations shown on the plans, and in accordance with the manufacturer's specifications.
- B. Steel hardware, handrail fittings, post caps, extruded rail shapes, and accessories shall be fabricated from steel conforming to ASTM A307 requirements. Aluminum items shall be cast from Almag 35. All hardware and accessories shall be steel unless they are not available in steel. Contractor shall provide all hardware as required for installation and in accordance with approved Shop Drawings.
- C. Steel parts shall be comprised of the following:
  - 1. One and 7/8-inch O.D. steel round posts, and continuous top rail. Steel pipe shall conform to ASTM A53 latest addition
- D. Fabrication: Comply with requirements of ASTM A 143, ASTM A 384 and ASTM A 385. Fabricator shall submit shop drawings of all tubular fabrications.
- E. All steel parts shall be color galvanized. Contractor shall use the issued manufacturer provided touch-up paint to match factory finish.



- F. Surface appearance: Contractor shall be responsible for surface defects due to manufacture or fabrication of steel components. Contractor shall provide materials with acceptable appearance and smoothness.
- G. All mounting hardware shall be stainless steel conforming to AISI Type 304 and ASTM A193 latest requirements, sizes as shown on the Drawings. Anchor bolts and carriage bolts shall be grouted in with threads down. All exposed bolts shall be painted to match castings.
- H. Grout shall be non-shrinking, non-metallic, non-staining, such as Hallenite "Por-Rok," Sonneborn "SonogROUT," Penn Dixie or Master Builders, or an approved equal.

#### 2.4 VEHICULAR GATE

- A. Provide a single leaf gate as shown on the drawings
- B. All pipe shall be galvanized cold formed steel conforming to ASTM A120, latest edition, Schedule 40 requirements and galvanized in conformance with ASTM A123 latest requirements, sizes as shown on the Drawings.
- C. Steel plate shall conform to ASTM Designation A36, galvanized in conformance with ASTM A123 latest requirements.
- D. All hardware shall conform to ASTM A325 latest requirements, and shall be galvanized in accordance with ASTM A153 latest requirements, sizes as shown on the Drawings.
- E. Concrete for footings shall be air - entrained 4000 psi 28 day concrete.
- F. Contractor shall submit to the Owner Representative a notarized certificate of compliance with all galvanizing requirements including ASTM number and weight of zinc coating in ounces per square foot.
- G. After galvanizing and fabrication of the gates they shall receive a color galvanized coating; color flat black. Submit for product literature for approval. All hardware shall be galvanized and color coated.
  - 1. SURFACE PREPARATION Wash Primer: Prior to applying coating all hot dip galvanized material shall be thoroughly cleaned in accordance with SSPC SP-1 latest requirements
  - 2. COATING MATERIAL Wash Primer: The wash primer to be used shall be a low flush vinyl metal conditioner conforming to U.S. Specification MIL-C-15328B. It shall be a two-component product consisting of a base material and an activator.
  - 3. COATING MATERIAL Top Coat: The top coat to be used shall be a one package vinyl chloride-vinyl acetate copolymer composed of modified vinyl resin solutions combined with completely lead free pigments. It shall be inert to caustics, alkalis, mineral acids, alcohol, oils, greases, and aliphatic hydrocarbons at normal temperatures. It shall be re-coatable within four hours at 70 degrees F., possess a hardness of 3H minimum, be



compatible with acrylics, latex, epoxy, alkyd, and vinyl, and have demonstrated 100% adhesion and freedom from chalking, peeling, blistering, and embrittlement upon aging. It shall have a gloss level of 25-30%.

## 2.5 PAINT

- A. Shop Primer for Ferrous Metal: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with performance requirements in FS TT-P-664; selected for good resistance to normal atmospheric corrosion, compatibility with finish paint systems indicated, and capability to provide a sound foundation for field- applied topcoats despite prolonged exposure.
  - 1. Galvanizing Repair Paint: High-zinc-dust-content paint for re-galvanizing welds in steel, complying with SSPC-Paint 20
  - 2. Bituminous Paint: Cold-applied asphalt mastic complying with SSPC-Paint 12, except containing no asbestos fibers, or cold-applied asphalt emulsion complying with ASTM D 1187.

## 2.6 FASTENERS

- A. General: Provide Type 304 or 316 stainless-steel fasteners for exterior use and zinc-plated fasteners with coating complying with ASTM B 633, Class Fe/Zn 5, where built into exterior walls. Select fasteners for type, grade, and class required
- B. Bolts and Nuts: Regular hexagon-head bolts, ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with hex nuts, ASTM A 563 (ASTM A 563M); and, where indicated, flat washers
- C. Anchor Bolts: ASTM F 1554, Grade 36.
- D. Machine Screws: ASME B18.6.3 (ASME B18.6.7M).
- E. Lag Bolts: ASME B18.2.1 (ASME B18.2.3.8M).
- F. Plain Washers: Round, carbon steel, ASME B18.22.1 (ASME B18.22M).
- G. Lock Washers: Helical, spring type, carbon steel, ASME B18.21.1 (ASME B18.21.2M).
- H. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and equal to four times the load imposed when installed in concrete, as determined by testing per ASTM E 488, conducted by a qualified independent testing agency.
  - 1. Exterior Expansion Anchor Material: Alloy Group 1 or 2 stainless-steel bolts complying with ASTM F 593 (ASTM F 738M) and nuts complying with ASTM F 594 (ASTM F 836M).



- I. Toggle Bolts: FS FF-B-588, tumble-wing type, class and style as needed.

## 2.7 FABRICATION, GENERAL

- A. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
  1. Welded connections may be used where bolted connections are shown.
- B. Shear and punch metals cleanly and accurately. Remove burrs.
- C. Ease exposed edges to a radius of approximately 1/32 inch (1 mm), unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- D. Weld corners and seams continuously along entire line of contact to comply with the following:
  1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
  2. Obtain fusion without undercut or overlap.
  3. Remove welding flux immediately.
  4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
    - a. Provide for anchorage of type indicated, coordinate with supporting structure. Fabricate and space anchoring devices and fasteners to secure metal fabrications rigidly in place and to support indicated loads.
    - b. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.
- E. Fabricate joints that will be exposed to weather in a manner to exclude water or provide weep holes where water may accumulate.
- F. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges.
- G. Remove sharp or rough areas on exposed traffic surfaces.
- H. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts. Locate joints where least conspicuous. Make up threaded connections tight so that threads are entirely concealed.



## 2.8 MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Provide steel framing and supports indicated and as necessary to complete the Work and which are not a part of the structural framework, including but not limited to countertop and vanities, ceiling hung toilet compartments, framing for partial height walls, mechanical and electrical equipment.
- B. Fabricate trellises from structural-steel shapes, plates, and bars of welded construction, unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction retained by framing and supports. Cut, drill, and tap units to receive hardware, hangers, and similar items.
- C. Assembly of trellises according to manufacturer's recommendation: Provide framing, including anchorage as required to sustain imposed loads and to limit deflections to  $L/360$  between hangers, fabricated from the following.
  - 1. Structural Steel Shapes, Plates and Bars: ASTM A36/A36M.
  - 2. Modular Structural Framing System: ASTM A569; modular, structural quality steel pre-formed "U" channel framing system with continuous open slot prepared to receive attachment nuts, bolts, straps, threaded rods, beam clamps, hanger rods support brackets and other accessories. Provide manufacturers standard corrosion resistant finish.

## 2.9 FINISHES GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Finish metal fabrications after assembly

## 2.10 STEEL AND IRON FINISHES

- A. Galvanizing: Hot-dip galvanize items as indicated to comply with applicable standard listed below:
  - 1. ASTM A 123, for galvanizing steel and iron products.
  - 2. ASTM A 153/A 153M, for galvanizing steel and iron hardware.
- B. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces by removing oil, grease, and similar contaminants in accordance with SSPC -SP 1 "Solvent Cleaning," followed with the SSPC surface-preparation specifications listed below and environmental exposure conditions of installed metal fabrications. Surface preparation shall be done after fabrication and immediately prior to shop painting. Apply shop coat of paint within 4 hours after cleaning and before rust bloom occurs.
  - 1. Interiors (SSPC Zone 1A): SSPC-SP 3, "Power Tool Cleaning."





2. Apply a minimum of one coat of shop primer to uncoated surfaces of metal fabrications, except those with galvanized finishes and those to be field welded, and those to be embedded in concrete, sprayed-on fireproofing, or masonry, unless otherwise indicated. Comply with SSPC- PA 1, "Paint Application Specification No. 1," for shop painting
3. Stripe paint corners, crevices, bolts, welds, and sharp edges.
4. Dry Film Thickness of Primer: 2.5 to 3.0 mils, dry film thickness. Apply paint thoroughly and evenly to dry surfaces, free from holidays and pinholes, in accordance with manufacturer's directions.

C. Stainless steel

1. Material – Stainless Steel, Type 304
2. Finish – No. 6
3. Corner Radius – 1/8"
4. Taper – 1/4" from leg edges
5. Mounting – flat head countersunk screws through shop drilled countersunk holes

### PART 3 - EXECUTION

#### 3.1 INSTALLATION, GENERAL

- A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing metal fabrications to in-place construction. Include threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws, and other connectors. Drill holes for bolts to the exact diameter of the bolt. Provide screws threaded full length to the screw head.
- B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- C. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.
- D. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.
- E. Field Welding: Comply with the following requirements:
  1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
  2. Obtain fusion without undercut or overlap.



3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

### 3.2 INSTALLING MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements.
- B. Ceiling Hung Toilet Partitions: Anchor supports securely to, and rigidly brace from, overhead building structure.

### 3.3 ADJUSTING AND CLEANING

- A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
  1. Apply by brush or spray to provide a minimum 2.0-mil (0.05-mm) dry film thickness.

END OF SECTION 055000



## SECTION 055213 - PIPE AND TUBE RAILINGS

### PART 1 - PART 1 - GENERAL

#### 1.1 REFERENCES

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

#### 1.2 SCOPE

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

#### 1.3 RELATED WORK

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

#### 1.4 SUBMITTALS

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



- and other necessary details for delivery and lifting devices and reception or installation of other work.
2. Show in large scale details any unique fabrication and setting requirements for wall veneers, caps, bases, special wall end conditions, or any other specified areas seen as necessary or as directed by the City Representative.
  3. Do not order materials until approval has been obtained from the City Representative.
    - a. Steel railing – Shop Drawings.
    - b. Non-shrinking epoxy grout—Product literature
    - c. Exterior metal primer and paint—Product literature and color charts.
- C. Construction and Fabrication of Samples:
1. Contractor shall construct and/or fabricate samples for the following items in accordance with approved Shop Drawings:
    - a. Steel railing - minimum one panel including posts.
    - b. All fabricated samples shall be complete-in-place. The quality of workmanship shall be approved by the City's Representative before any permanent construction is started. If the original sample is not approved, the Contractor shall provide additional samples as required, at no increased cost to the City, until an approved sample is obtained. The approved sample shall become the standard for the entire job. The samples can be constructed at a location that will become part of the finished work.
    - c. Obtain approval of samples by City Representative before proceeding with the final work.
    - d. If the first samples are not approved, the Contractor shall provide additional samples until an approved sample is obtained for each of the above at no additional charge to the City.
    - e. If approved, the sample shall become part of the final work.
- D. Contractor shall submit a notarized certificate of compliance to the City Representative from the galvanizer with all galvanizing and color galvanizing requirements including ASTM number and weight of coatings in ounces per square foot. Certificate of compliance shall also contain the following:
1. Sole Source Responsibility: Include statement that galvanizer accepts sole source responsibility for coatings under this Section. Galvanizer who does not accept this responsibility is not acceptable and will be rejected.
  2. Quality Assurance: Include evidence that galvanizer meets requirements of ANSI Q90.
  3. Certification of Compliance with Current Environmental Regulations: Galvanizer shall certify that coatings proposed for use comply with applicable environmental regulations. Contractor and galvanizer shall be responsible for penalties assessed by governmental or environmental authorities for coatings which do not comply with current environmental regulations. All coatings shall be lead-free.



## 1.5 QUALITY ASSURANCE

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

## 1.6 PRODUCT HANDLING AND STORAGE

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

## 1.7 EXAMINATION OF CONDITIONS

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

## 1.8 STANDARDS

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



## 1.9 QUALIFICATIONS

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

## 1.10 ACCESSIBILITY CODES AND BUILDING CODES

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

## PART 2 - PART 2 - PRODUCTS

### 2.1 RAILING

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



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

## 2.2 STEEL COPING

- A. Steel coping shall be black, cold-rolled, carbon steel, schedule 40, steel pipe, per ASTM A53 non-galvanized Type S, Grade A or B. Shape and sizing as shown on the Drawings



- B. Welded steel anchors at a minimum shall be cold rolled black steel rod or bolts. Rebar is not acceptable
- C. Fabrication: Fabricator shall submit shop drawings of tubular and non-standard fabrications.

### PART 3 - PART 3 - EXECUTION

#### 3.1 RAILINGS

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





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

### 3.2 STEEL COPING

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

END OF SECTION 055213



## SECTION 119001 – CARGO CONTAINERS

### PART 1 - PART 1 – GENERAL

#### 1.1 RELATED INFORMATION

- A. 03 00 00-Cast-in-Place Concrete

#### 1.2 SCOPE:

- A. This specification will cover the acquisition and installation of a 20’x8’x8’6” side open door steel dry cargo container for use as a park feature.

#### 1.3 COORDINATION:

- A. Coordinate with the construction of concrete pad to ensure cargo container can be properly placed and secured. Verify all measurements and layout to avoid any delay.

#### 1.4 QUALITY ASSURANCE

- A. Acceptance: Final acceptance of the cargo container shall be based upon Engineer’s approval.
- B. Regulatory Requirements: Meet requirements of applicable laws, codes, and regulations required by authorities having jurisdiction over Work.

#### 1.5 REFERENCE STANDARDS:

- A. ISO Container Standards:
  - 1. ISO 668 – Series 1 freight containers – Classification, external dimensions and ratings.
  - 2. ISO 830 – Freight Containers – Terminology.
  - 3. ISO 1161 – Series 1 freight containers – Corner castings-specification.
  - 4. ISO 1496-1 – Series 1 freight containers – Specification and testing.
  - 5. Part 1: Series 1 freight containers for general purposes (5th edition – 1990 / amendment 1 – 1993 and amendment 2 -1998)
  - 6. ISO 6346 – Freight containers – Coding, identification and marking.
- B. C.S.C. Certification – Container will be certified and compiled with the requirements of the “International Convention for the Safe Containers.”



- C. T.C.T. Certification – All exposed wooden components used for the container shall be treated to comply with the requirements of “Cargo Containers- Quarantine Aspects and Procedures” of the Commonwealth Department of Health, Australia.
- D. Classification Society - All containers shall be certified for design type and individually inspected by one of the following classification societies:
  - 1. BV: Bureau Veritas (France)
  - 2. ABS: American Bureau of Shipping (USA)
  - 3. LR: Lloyd's Register of Shipping (UK)
  - 4. GL: Germanischer Lloyd (Germany)
  - 5. CCS: China Classification Society (P.R.C)

## PART 2 - PART 2 – PRODUCTS

### 2.1 MATERIALS:

- A. Cargo container shall be a 20’x8’x8’6” side open door steel dry cargo container or as approved by the Engineer.
  - 1. Contractor to provide photographs and shop drawings of cargo container selected.
- B. Cargo container shall meet all standards as listed in section 1.5 of this specification.
- C. Condition of the cargo container shall be new or like new with all doors and locks in working order, free of rust and minimal deformations.
- D. Attachments shall be made of steel angles meeting the requirements of ASTM GR50 KSI or as approved by the Engineer.
- E. Welds shall be 3/8” along vertical leg on each side of the steel angle as shown on plans or as approved by the Engineer.
- F. Expansion bolts shall be 1/2” x 2-3/4” Type 304 Stainless-Steel Expansion Anchor or as approved by the Engineer.

## PART 3 - PART 3 – EXECUTION

### 3.1 TRANSPORTATION AND HANDLING:

- A. Cargo container shall be transported and handled using methods specified by the cargo container manufacturer.



3.2 INSTALLATION:

- A. Attachment of cargo container to concrete pad shall follow manufacturer's guidance or as approved by the engineer.
  - 1. Contractor shall provide shop drawings for proposed method of attachment based off final selection of cargo container

3.3 CLEAN UP:

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

END OF SECTION 119001



## SECTION 260000 - ELECTRICAL

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. The work under this Section shall consist of installing all conduit, wire and associated equipment required to furnish and install various components for street lighting.
- B. The work consists of furnishing and installing a complete lighting system as specified on the drawings which will include the underground system and all electrical components necessary to make the system totally operational. The complete system shall include poles, luminaires, lamps, fixtures, and associated accessories, all wire and connections, and pole mounted receptacles along with any other equipment required to complete the installation.
- C. All work performed under this Section shall be as specified herein, as shown on the plans. The Owner Representative shall have the final decision regarding all disputes on materials and workmanship.
- D. All underground installations, including any required wiring, must be complete before the finished surface is placed on walkways. All excavations required for the installation of conduit, light pole bases, lighting control cabinet, and panelboard shall be completed prior to placing and compacting gravel subbases.

#### 1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of SECTION 010000 GENERAL REQUIREMENTS apply to work of this section.

#### 1.3 DESCRIPTION OF WORK

- A. Work to be Performed: The scope of work consists of the installation of all materials to be furnished under this Section, and without limiting the generality thereof, includes:
  - 1. Light Fixtures
  - 2. Light Poles
  - 3. Conduit and Wire
  - 4. Lighting Control Cabinet
  - 5. Panelboards
- B. Reference to Drawings: Work to be done under this Section is shown on Drawings and specified herein.



- C. Related Work: The following is not included in this Section and is specified under the designated section:
1. All sections under DIVISION 31 EARTHWORK, including excavation and backfill, trenching.
  2. SECTION REINFORCED CONCRETE: Light pole bases

#### 1.4 SUBMITTALS

- A. Samples of all materials, along with the certified engineering data and written notification that the proposed materials meet these Specifications must be furnished. Upon approval of the samples and test data, delivery of the proposed materials will be made and no changes or modifications, with the exception of minor changes not affecting operation or appearance will be allowed.
- B. In the event that a modification or change to the approved materials, or the development of new material to replace approved materials is announced by the supplier, written notification must be given to the Engineer. An option to accept delivery of the modified or new material or continued delivery of the approved material must be given. In no case shall the delivery of the new or modified material result in any additional expense to the Contract.
- C. Shop Drawings shall be submitted for approval to the City Representative for the following materials:
1. Light poles
  2. Luminaires and accessories
  3. Panelboards
  4. Conduit and wire
- D. A written full one year complete replacement guarantee against defects in materials and workmanship for a period of one year from date of final acceptance of this Contract shall be furnished with all material. Defects in any material shall be replaced at the expense of the Contractor.

#### 1.5 QUALITY ASSURANCE

- A. The Contractor shall comply with the regulations of all authorities having jurisdiction over electrical work, shall arrange for all inspections that may be required by the City of Providence, shall obtain all permits and certificates at his own expense, and shall deliver to the Owner Representative certificates of acceptance of work.
- B. The Contractor shall comply with all standards and regulations of all utilities involved governing all materials and methods of construction. All work, materials and construction methods shall be in accordance with all utilities involved, except as otherwise specified herein.



- C. Trade names and catalog numbers mentioned on the Drawing, or in these Specifications, are used for the purpose of furnishing a brief description of the material. Similar materials will be accepted if, in the opinion of the Owner Representative, they are equal in quality and operation to those specifically mentioned. Only materials approved by the National Board of Fire Underwriters, and so labeled, will be considered for approval for the services indicated.
- D. All material must have the name or trademark of the manufacturer stamped thereon, where such identification is customary. All electrical equipment shall be designed, manufactured, tested and rated in accordance with the latest applicable standards of the National Electric Manufacturers Association (NEMA), the American Institute of Engineers (AIEE), American National Standards Institute (ANSI), and the American Society for Testing and Materials (ASTM).

#### 1.6 ACCEPTANCE

- A. All systems shall be complete-in-place to the satisfaction of the Owner Representative (complete systems must be totally operational) prior to the final acceptance of this work. Payment for any unit does not constitute final acceptance of that unit. The Contractor shall familiarize himself with the requirements for testing and final acceptance of completed underground utilities, electric vehicle charging stations, and lighting systems as called for in the Contract Specifications, under the appropriate items.
- B. The Contractor is responsible for all equipment until final acceptance of the Contract and for all damage from any cause whatsoever.
- C. The Contractor shall anticipate the problems inherent in coordination of his work with required issuance of work orders to all utilities involved, and the subsequent scheduling by the utilities.
- D. It should be noted that the Electrical drawings are schematic and the Contractor shall coordinate actual locations of equipment.
- E. No payments will be made for relocation's required because of improper installation by the Contractor.

#### 1.7 NAMEPLATES

- A. The Contractor shall furnish and install on the panelboards a typed directory in factory installed frame protected with plastic.

#### 1.8 CODES, STANDARDS AND REFERENCES

- A. All materials and workmanship shall comply with all applicable Codes, specifications, Local and State Ordinances, Industry Standards and Utility Company regulations, latest editions.



- B. In case of difference between building codes, State Laws, Local Ordinances, Industry Standards and Utility Company regulations and the Contract Documents, the Contractor, where such conflict exists shall promptly notify the Engineer in writing of any such difference.
- C. In case of conflict between the Contract Documents and the requirements of any Code or Authorities having jurisdiction, the most stringent requirements of the aforementioned shall govern.
- D. Should the Contractor perform any work that does not comply with the requirements of the applicable Building Codes, State Laws, Local Ordinances, Industry Standards and Utility Company regulations, he shall bear all costs arising in correcting the deficiencies, as approved by the Engineer.
- E. Applicable Codes and Standards shall include all State Laws, Local Ordinances, Industries and Utility Company regulations, and the applicable requirements of the following accepted Codes and Standards, without limiting the number, as follows:
  - F. Building Codes:
    - 1. National Electrical Code
    - 2. Occupational Safety and Health Standards
    - 3. National Fire Protection Association
    - 4. Americans with Disabilities Act
- G. In these Specifications, references made to the following Industry Standards and Code bodies are intended to indicate the latest volume or publication of the Standard. All equipment, materials and details of installation shall comply with the requirements and latest revisions of the following bodies, as applicable:
  - 1. ANSI American National Standards Institute
  - 2. ASTM American Society of Testing Materials
  - 3. UL Underwriters' Laboratories
  - 4. NEMA National Electrical Manufacturers Association
  - 5. FM Factory Mutual
  - 6. NEC National Electrical Code
  - 7. ADA Americans with Disabilities Act
- H. The Contractor for work under his Contract shall give all necessary notices, obtain all permits, pay all taxes, fees and other costs in connection with his work; file for necessary approvals with the jurisdiction under which the work is to be performed. The Contractor shall obtain all required Certificates of Inspection for his respective work and deliver same to the Engineer before request for acceptance of his portion of work is made and before final payment.





#### 1.9 GUARANTEE

- A. Attention is directed to provisions regarding guarantees and warranties for work under each Trade.
- B. Manufacturers shall provide their standard guarantees for work under the Electrical Trade. However, such guarantees shall be in addition to and not in lieu of all other liabilities which the manufacturer and/or Contractor may have by law or by other provisions of the Contract Documents.
- C. All materials, equipment and workmanship furnished by Electrical Trade shall carry the standard warranty against all defects in material and workmanship. Any fault due to defective or improper material, equipment, workmanship or design which may develop, shall be made good, forthwith, by and at the expense of the responsible Trade under which the work was provided, including all other damage done to areas, materials and other systems resulting from this failure.
- D. The Contractor shall guarantee that all elements of the systems which are to be provided under his Contract, are of sufficient capacity to meet the specified performance requirements as set forth herein or as indicated on the drawings.
- E. Upon receipt of notice from the Owner Representative of failure of any part of the systems or equipment during the guarantee period, the affected part or parts shall be replaced by the Contractor.
- F. The Contractor shall furnish, before the final payment is made, a written guarantee covering the above requirements.

#### 1.10 THE CONTRACTOR

- A. The Contractor shall visit the site and make his bids from his own site examinations and estimates and shall not hold the Engineer, the Owner or his agents or employees responsible for, or bound by, any schedule, estimate or of any plan thereof.
- B. The Contractor shall faithfully execute his work according to the terms and conditions of the Contract and Specifications, and shall take all responsibility for and bear all losses resulting to him in the execution of his work.
- C. The Contractor shall be responsible for the location and performance of work provided under his Contract as indicated on the Contract Documents. All parties employed directly or indirectly by this Contractor shall perform their work according to all the conditions as set forth in these specifications.
- D. The Contractor shall furnish all materials and perform all work in accordance with these specifications, and any supplementary documents provided by the Owner Representative. The work shall include everything shown on the drawings and/or required by the specifications as



interpreted by the Owner Representative. All work and materials furnished and installed shall be new and of the best quality and workmanship. The Contractor shall cooperate with the Owner Representative so that no error or discrepancy in the Contract Documents shall cause defective materials to be used or poor workmanship to be performed.

#### 1.11 COORDINATION OF WORK

- A. The Contractor shall compare his respective drawings and specifications with those for other trades and report any discrepancies between them to the Owner Representative and obtain written instructions for any changes necessary in the electrical work. All work shall be installed in cooperation with other trades installing interrelated work. Before installation, all trades shall make proper provisions to avoid interference in a manner approved by the Owner Representative. All changes required in the work of the trades caused by their neglect shall be performed by them as herein before specified.
- B. Locations of conduit and equipment shall be adjusted to accommodate the work with interference anticipated and encountered. The Contractor shall determine the exact routing and location of the systems prior to fabrication or installation.
- C. The Contract Drawings are diagrammatic only intending to show general runs and locations of conduit, equipment, terminals and specialties and not necessarily showing all required offsets, details and accessories and equipment to be connected. All work shall be accurately laid out to avoid conflicts and to obtain a neat and workmanlike installation which will afford maximum accessibility for operation, maintenance and headroom. In case of conflict between conduit sizes shown on plans, details or diagrams, the larger conduit size shall be included under the Contract where such discrepancy occurs.

#### 1.12 GIVING INFORMATION

- A. The Contractor shall keep himself fully informed as to the shape, size and position of all openings required for his apparatus and shall give information to the other Contractors sufficiently in advance of the work so that all openings may be built in advance.

#### 1.13 FAILURE

- A. The Contractor shall obtain detailed information from the manufacturer of apparatus which he is to furnish and/or install indicating the proper method of installing and connecting same.
- B. The Contractor shall obtain detailed information from the manufacturer of apparatus which he is to furnish and/or install indicating the proper method of installing and connecting same. The Contractor shall also obtain all pertinent information from the General Contractor and other Contractors which may be necessary to facilitate his work and the completion of the whole project.



1.14 DRAWINGS, INFORMATION AND INTERPRETATION OF SAME

- A. The Engineer shall interpret the specifications and the detailed developments and the drawings thereof. The Engineer's interpretation shall be final and binding.

1.15 CONCRETE WORK

- A. All concrete and masonry equipment bases and pads, curbs, chases, pockets and openings (except core-drilling) required for the proper installation of the work under this Contract, will be provided by the General Contractor using dimensions, templates, bolts, anchors, as shown on the drawings, or as required or recommended by the equipment manufacturers.
- B. Anchor bolts, sleeves, inserts and supports that may be required shall be furnished and installed by the Contractor for the items to be supported. Any expense resulting from the improper location or installation of anchor bolts, sleeves, inserts and supports provided under this Section shall be paid for by the Contractor.

1.16 USE OF PREMISES

- A. The Contractor shall confine his apparatus, storage of materials and construction to the limits directed by the Engineer and he shall not encumber the premises with his materials.
- B. In storing materials within areas (structure or ground) or when used as a shop the Contractor shall consult with the Engineer and will restrict his storage to space designated for such purposes. The Contractor will be held responsible for repairs, patching or cleaning arising from any unauthorized use of premises.
- C. Notwithstanding any approvals or instructions which must be obtained by the Contractor from the Engineer in connection with use of premises, the responsibility for the safe working conditions at the site shall remain that of the Contractor and the Engineer or Owner shall not be deemed to have any responsibility or liability in connection therewith.
- D. For additional requirements see also the requirements set forth in the General Requirements.

1.17 PROTECTION

- A. Materials, conduit shall be properly protected and all conduit openings shall be temporarily closed so as to prevent obstruction and damage as described herein before. Post notice prohibiting the use of all systems provided under the Contract prior to completion of work and acceptance of all systems by the Owner except otherwise instructed by the Engineer or herein before specified. Contractor shall take precautions to protect his materials from damage and theft.



- B. The Contractor shall furnish, place and maintain proper safety guards for the prevention of accidents that might be caused by the workmanship, materials, equipment or electrical systems provided by the Electrical Trade.

#### 1.18 EQUIPMENT AND MATERIALS

- A. Equipment and materials shall be delivered to the site and stored in original sealed containers, suitably sheltered from the elements, but readily accessible for inspection by the Engineer until installed. All items subject to moisture damage shall be stored in dry, heated spaces.
- B. Equipment shall be tightly covered and protected against the completion of the work, equipment and materials shall be cleaned, polished thoroughly and turned over to the Owner in a condition satisfactory to the Owner Representative. Damage or defects developing before acceptance of the work shall be made good at the respective Contractor's expense as herein before specified.
- C. The Contractor shall make necessary field measurements to ascertain space requirements, for equipment and connections to be provided under his Trade and shall furnish and install such sizes and shapes of equipment to allow for the final installation to conform to the drawings and the intent of the specifications.
- D. Manufacturer's directions shall be followed completely in the delivery, storage, protection and installation of all equipment. Notify the Engineer in writing of any conflict between any requirements of the Contract Documents and the manufacturer's directions and shall obtain the Owner Representative's written instructions before proceeding with the work. Should the Contractor perform any work that does not comply with the manufacturer's directions or the written instructions issued by the Owner Representative, he shall bear all costs arising in correcting any deficiencies that should arise.
- E. The Contractor shall furnish and install all equipment, accessories, connections and incidental items necessary to fully complete the work under his contract for use, occupancy and operation by the Owner.
- F. Where equipment of the acceptable manufacturers require different arrangement or connections from those shown, it shall be the responsibility of the Contractor to install the equipment to operate properly and in harmony with the original intent of the drawings and specifications. When directed by the Owner Representative, the Contractor proposing substitutions shall submit drawings showing the proposed installation. If the proposed installation is approved, the Contractor shall make all necessary changes in all affected related work provided by other Trades, including location of roughing in connections by other trades and supports. All changes shall be made at no increase in the Contract amount nor additional cost to the Owner.
- G. All equipment and materials required for installation under these specifications shall be new and without blemish or defect. Equipment and materials shall be products which will meet with the acceptance of the Authorities having jurisdiction over the work and as specified herein before. Where such acceptance is contingent upon having the products listed or labeled by FM or UL or



other testing laboratory, the products shall be so listed or labeled. Where no specific indication as to the type or quality of material or equipment is indicated, a first class standard article shall be provided.

- H. All equipment of one type (such as wiring devices, panelboards) shall be the products of one manufacturer.

#### 1.19 DAMAGE TO OTHER WORK

- A. The Contractor shall be held responsible and shall pay for all damages caused by his work to the new and existing building structures, and new and existing equipment, conduit, systems and all work and finishes installed under this Contract in the existing building. Repair of such damage shall be done by the Contractor at his own expense, to Engineer's satisfaction.

#### 1.20 CORRECTION OF WORK

- A. The Contractor shall promptly correct all work provided under his Contract and rejected by the Engineer as defective or as failing to conform to the Contract Documents whether observed before or after completion of work and whether or not fabricated, installed or completed. The Contractor responsible for defective work shall bear all costs of correcting such rejected work to Engineer's satisfaction.

#### 1.21 TOUCHUP PAINTING

- A. All equipment and conduit systems shall be thoroughly cleaned of rust, splatters and other foreign matter of discoloration leaving every part of all systems in an acceptable prime condition. The Contractor for the work under his Contract shall refinish and restore to the original condition all equipment which have sustained damage to the manufacturer's prime and finish coats of Paint and/or enamel.

#### 1.22 IDENTIFICATION OF MATERIALS

- A. All equipment used in the Electrical Systems shall have a permanently attached nameplate identifying the manufacturer, service, size, serial number or model number, etc. The nameplates shall be kept clean and readable at all times.



## PART 2 - PRODUCTS

### 2.1 SCHEDULE 40 PVC CONDUIT

- A. Conduits of the sizes shown on the plans shall be schedule 40 PVC construction with standard wall thickness. The conduit must be free from defects and foreign matter. All bends, fittings, and clamps shall be new and free from defects. Bends of all conduit must be made using a standard type commercial bending device.
- B. The schedule 40 PVC conduit must conform to and meet all the current requirements and testing procedures of the American Society for Testing and Materials whenever such standards and tests shall apply. The following ASTM standards shall apply as applicable:
  - 1. ASTM Specification A120-73 - Schedule 40 - PVC Conduit
  - 2. All conduit shall bear distinctive marking of the type, size, manufacture, etc., to verify that the conduit meets the special conditions of the specifications. The Contractor must supply to the Landscape Architect a letter of compliance from the manufacturer stating that the conduit meets all specifications and conditions.

### 2.2 COUPLINGS AND FITTINGS

- A. Conduit couplings and fittings shall be constructed of polyvinyl chloride rigid plastic formed to fit the outside diameter of the conduit, to be used in conjunction with a heavy bodied solvent cement.
- B. ASTM D2564 - Specifications for Solvent Cements for Polyvinyl Chloride Plastic Pipe and Fittings.

### 2.3 POLES AND LUMINAIRES

- A. Contractor shall furnish and install all lamp poles and luminaires as indicated and as specified on the drawings.

### 2.4 ELECTRIC SERVICE CABINET

- A. Electric Service utility cabinet shall be Milbank cabinet, catalog # CP3B51110AABKSL2 or approved equal, sized to house equipment as shown on the drawings. Cabinets shall be made vandal-proof.



## 2.5 ELECTRIC UTILITY METERS

- A. Contractor shall furnish and install electric utility meters in accordance with the local electrical provider standards and specifications and National Electrical Code Requirements.

## 2.6 PANELBOARDS

- A. Furnish and install the panelboard for lighting.
- B. The Panelboards shall be of hinged front ('door on door') type, dead front construction with thermal magnetic circuit breakers and shall conform to the requirements of NEMA and NEC. All panelboards shall be UL approved and labeled.
- C. The Panelboards shall consist of circuit breakers, code gauge steel cabinet or backbox, bus assembly, trim with code gauge galvanized steel doors. Gutter space shall be a minimum of 4" on all sides.
- D. Circuit breakers shall be of the quickmake, quick break trip free thermal magnetic type with characteristics as scheduled. Automatic tripping shall be clearly indicated by the operating handle assuming a midposition between ON and OFF. Two and three pole breakers shall have common trip. All circuit breakers shall be bolt-on type.
- E. The panelboards shall be provided with solid neutrals. In addition, grounding bus with lugs shall be provided on all panelboards meeting UL and NEMA standards. Other special features shall be provided as required and as indicated. All bus work shall be copper.
- F. Two milled type keys shall be provided with each panel and all panel locks shall be keyed alike.
- G. Bus arrangements shall be sequence phased such that adjacent single pole breakers shall be connected to opposite phases in such a manner, such that any two or three pole breakers could be installed anywhere in the panelboard.

## 2.7 FEEDER AND BRANCH CIRCUIT CONDUCTORS

- A. All feeder, branch circuit, remote control, signal circuit and interlock wiring shall be manufactured of copper, rated 600 volts unless noted otherwise.
- B. Minimum size wire for branch circuit and power wiring shall be #12 AWG.
- C. Insulation type shall be XHHN for feeders and power wiring, THHN./THWN for lighting.
- D. All exterior wiring shall be Type XHHW.
- E. Color coding for phase identification shall be as per industry standards.



1. Color coding shall be continuous on insulation for #6 AWG or smaller and continuous or marked with color tape at all connections for conductors larger than #6 AWG.
- F. All wiring shall conform to the National Electrical Code for construction and use.
1. G. All wiring shall be installed in conduit.

## 2.8 SOLDERLESS LUGS AND CONNECTORS

- A. All lugs for feeder conductors and connectors for branch circuit joints shall be of the solderless type suitable for copper wire.

## 2.9 DEVICE PLATES

- A. Device plates shall be manufactured of stainless steel.
1. Device plate screws shall match plates.

## 2.10 GROUNDING

- A. Provide grounding for all electrical equipment and devices in accordance with the applicable requirements of the Rhode Island Electrical Code and as indicated on the drawings.
- B. Bonding jumpers shall be installed at all locations required by RIEC.
- C. A green grounding conductor of proper size shall be installed and connected with the feeder circuit conductors to all panelboards, electrical equipment, etc. Connections to the equipment may be bolted or screwed using corrosion resisting bolts, screws. A green grounding conductor shall be installed in all branch and feeder circuits.
- D. All exposed connections shall be made by grounded grounding clamps.
- E. Grounding electrodes shall be driven, without bending or causing any damage to the rods.

## PART 3 - EXECUTION

### 3.1 INSTALLATION – GENERAL

- A. All work shall be installed in a neat and workmanlike manner and shall be done in accordance with all local and state codes.





### 3.2 INSTALLATION OF BOXES

- A. All boxes shall be rigidly mounted and shall be equipped with suitable screw fastened covers. Open knockouts or holes in boxes shall be plugged with suitable blanking devices.
- B. Mounting hangers, clamps, etc., for electrical equipment shall be as indicated on the drawing and as required.

### 3.3 INSTALLATION OF CONDUCTORS

- A. All wiring shall be installed and supported in accordance with the requirements of the Rhode Island Electrical Code
- B. Splices, taps and lugs shall be electrically and mechanically secure and solderless lugs and connectors shall be used. Lugs shall be used for conductors sizes No. 8 AWG and larger. All lugs shall be of the proper size and in no case shall strands be cut from a conductor in order to fit the conductor into a lug.

### 3.4 INSTALLATION OF LIGHTING FIXTURES

- A. Furnish and install a complete lighting system, including conduit, wire, outlet boxes, poles, lighting fixtures with lamps and receptacles as shown on the drawings.
- B. Where job conditions require locations different from those shown to avoid equipment, etc., such changes shall be made without additional cost to the Owner.

### 3.5 BRANCH AND FEEDER CIRCUITS

- A. The branch and feeder circuit wiring shall be installed as indicated on the drawings.
- B. The number and size of conductors in each run of conduit is indicated on the drawings and where there is a conflict between the number wires indicated and the actual number required, the actual number and size shall be installed.
- C. All circuits shall be connected to breakers at the Contractor's discretion. The balancing of all loads shall be the Contractor's responsibility.

### 3.6 EQUIPMENT CONNECTIONS

- A. All equipment shown on the drawings shall be connected under this section.
- B. Before connecting any piece of equipment, check the nameplate rating against the information shown on the drawings and call to the attention of the Engineer any discrepancies.



- C. The Contractor shall carefully study all equipment manufacturer's wiring diagrams and make corrections accordingly.

### 3.7 IDENTIFICATION OF EQUIPMENT

- A. Identification shall be provided for all electrical equipment. The electrical system Identification shall clearly describe the equipment connected. Method of Identification shall be by laminated nameplate made of bakelite or similar material engraved letters at least 1 1/4" high and secured to the equipment by screws. A list of nameplates shall be submitted, to the Owner Representative for approval prior to fabrication.
- B. Panelboard directory cards shall be typewritten to indicate areas and/or devices served by each circuit.

### 3.8 TESTS

- A. This Section of the Specifications shall include the making of the necessary tests referred to herein in the presence of the Owner Representative to show that the particular system or equipment has been properly installed and is in good operating condition, as hereinafter specified. The Owner Representative shall be notified two (2) weeks in advance of the date for all tests so that he may be present to witness the tests.
- B. Complete test and inspection records shall be made and incorporated into a report for each piece of equipment tested. All readings, taken shall be recorded. Test reports shall be submitted to the Owner Representative for approval.
- C. Furnish necessary meters, instruments, temporary wiring and labor to perform all required tests and adjustments of equipment and wiring installed and/or connected under this Contract, including electrical equipment furnished by others, to determine proper polarity, phasing, freedom from ground and shorts and operation of equipment. All measuring instruments shall be properly calibrated.
- D. All materials and manner of installation shall be in strict accordance with the applicable requirements of state and local authorities, the utility company and the codes of National Board of Fire Underwriters.
- E. Wherever any of the aforementioned codes, laws, etc., require that any work be tested or approved, the Contractor shall provide proper facilities for access and for inspection, all at his own expense.
- F. Wiring
  - 1. System and equipment grounds shall be checked for proper value of resistance using the Megger ground tester in accordance with manufacturer's standard instructions.



2. The Contractor shall correct or replace any nominal currentcarrying circuit which is defective or grounded and he shall also correct all other troubles encountered by these tests. All defects whether through faulty workmanship or material furnished shall be corrected under this Section at the Contractor's expense.

G. Lighting

1. Check all lighting fixtures and receptacles for proper operation.

H. Branch Circuits:

1. The branch circuit wiring shall be installed as indicated on the drawings. No major changes in wiring shall be made without the approval of the Owner Representative in writing.
2. Number associated with each branch circuit outlet identifies the branch circuit to which the device served by the outlet is to be connected. The circuit number indicated is only for reference and guidance to this Contractor and is not intended to limit the panelboard circuitry. All branch circuits shall be connected to breakers at the Contractor's discretion, in accordance with circuit requirements. The balancing of all loads shall be this Contractor's responsibility.

3.9 FINAL INSPECTION

- A. A. When the work on this project has been completed and is ready for final inspection, such inspection will be made. At this time, the Contractor for the work of this SECTION shall demonstrate that the requirements of these specifications have been met. Written results for all tests shall be submitted to the Owner Representative.

3.10 END OF SECTION

END OF SECTION 260000



## SECTION 265623 - AREA LIGHTING

### PART 1 - GENERAL

#### 1.1 DESCRIPTION

- A. This section specifies the furnishing, installation, and connection of exterior fixtures, poles, and supports. The terms "lighting fixtures", "fixture" and "luminaire" are used interchangeably.

#### 1.2 REFERENCES

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

#### 1.3 SCOPE

- A. The work of this Section consists of all Site Improvement work and related items as indicated on the Drawings and/or specified herein and includes, but is not limited to, the following:
  - 1. Lighting Poles and Standards
  - 2. Fluorescent Exterior Lighting
  - 3. Incandescent Exterior Lighting
  - 4. LED Exterior Lighting

#### 1.4 RELATED WORK

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

#### 1.5 QUALITY ASSURANCE

- A. Quality Assurance shall be in accordance with Section 260511, Requirements For Electrical Installations.



## 1.6 SUBMITTALS

- A. Submit in accordance with Section 260511, Requirements for Electrical Installations, and the following requirements:
  1. Shop Drawings:
    - a. Submit the following information for each type of lighting fixture designated on the lighting and site plans.
    - b. Material and construction details, include information on housing and optics system.
    - c. Physical dimensions and description.
    - d. Wiring schematic and connection diagram.
    - e. Installation details.
    - f. Energy efficiency data.
    - g. Photometric data based on laboratory tests complying with IES Lighting Measurements testing and calculation guides.
  2. Manuals:
    - a. Submit, simultaneously with the shop drawings, complete maintenance and operating manuals, including technical data sheets, wiring diagrams, and information for ordering replacement parts.
    - b. If changes have been made to the maintenance and operating manuals originally submitted, submit updated maintenance and operating manuals two weeks prior to the final inspection.

## 1.7 PRODUCT HANDLING AND STORAGE

- A. Provide manufacturer's standard provisions for protecting pole finishes during transport, storage, and installation. Do not remove factory-applied pole wrappings until just before installing pole.
- B. Deliver exterior lighting fixtures individually wrapped in factory-fabricated fiberboard type containers.
- C. Handle exterior lighting fixtures carefully to prevent breakage, denting and scoring the fixture finish.
- D. Do not install damaged lighting fixtures.
- E. Store exterior lighting fixtures in a clean, dry space and protect from the weather.
- F. Do not store poles on ground; they should remain in their shipping containers and kept on shipping pallets.



## 1.8 STANDARDS

- A. Except as modified by governing codes and by the Contract Documents, comply with applicable provisions and recommendations of the following:
1. AASHTO: American Association of State Highway and Transportation Officials, latest edition.
  2. American Concrete Institute (ACI)
  3. American National Standards Institute (ANSI)
    - a. American Society for Testing and Materials (ASTM)
    - b. Illuminating Engineering Society of North America (IESNA)
    - c. National Electrical Manufacturers Association (NEMA)
    - d. National Fire Protection Association (NFPA)

## 1.9 QUALIFICATIONS

- A. The electrical work shall be performed by a Contractor or Subcontractor with a minimum of (5) five years of acceptable experience in the installation of materials specified herein on projects comparable to this project and under the supervision of a qualified foreman with a minimum of five (5) years of experience.

## 1.10 ACCESSIBILITY CODES

- A. From time to time there are changes made in the federal and /or state accessibility and /or building codes or it is determined that different codes are applicable to a site. Such determinations or changes may occur during the course of the construction of this project. If changes become necessary to meet codes a change order shall be issued by the Owner to cover statutory requirements.
- B. Materials and installation shall be in accordance with the latest revision of the National Electrical Code and any applicable federal, state, and local codes and regulations.

## PART 2 - PRODUCTS

### 2.1 GENERAL REQUIREMENTS

- A. Luminaires, materials, and equipment shall be in accordance with NEC, UL, ANSI, and as shown on the drawings and specified.
1. The contractor shall use all new materials of high quality. The contractor shall submit product specifications for approval.
  2. Provide lighting fixtures, of the size, type and rating indicated on the Lighting Fixture Schedule, complete with, but not necessarily limited to, lamps, lamp holders, reflectors,



diffusers, louvers, wire guards, tube guards, ballasts, fuses, starters, and wiring. Fixtures shall be furnished with all required accessories and trim, including hold-down clips, as required for a complete installation in the ceiling-type shown on the Architectural Drawings.

## 2.2 AREA LIGHT POLE

### A. MANUFACTURER

1. Signify Canada Ltd.
  - a. 281 Hillmount Road
  - b. Markham, ON Canada L6C 2S3
  - c. 800-668-9008 [www.gardolighting.com](http://www.gardolighting.com)
2. or approved equal.

### B. MODEL

1. GARDCO SRS - Straight Round Steel Pole
  - a. Style Number: SRS
  - b. Base: CB
  - c. Pole Shaft Size: 4 in
  - d. Pole Gauge/Wall Thickness: 11
  - e. Height: 20 feet
  - f. Drilling Configuration: D1
  - g. Drilling Template: DT5
  - h. Finish: Black

## 2.3 COBRA HEAD LUMINAIRE

### A. MANUFACTURER

1. Signify Canada Ltd.
  - a. 281 Hillmount Road
  - b. Markham, ON Canada L6C 2S3
  - c. 800-668-9008 [www.gardolighting.com](http://www.gardolighting.com)
2. or approved equal.

### B. MODEL: LUMEC Road Focus Plus RPS Cobra Head (small)

1. Series Style Number: RPS
2. LED model: 95W 30 LED
3. CCT: 730
4. Gen: GI
5. Distribution: 5



6. Voltage: UNV
7. Controls: SRD
8. Options: 2C-FAWS-NRC-PHXL-SP2
9. Finish: Black

## 2.4 BRACKET

### A. MANUFACTURER

1. Signify Canada Ltd.
  - a. 281 Hillmount Road
  - b. Markham, ON Canada L6C 2S3
  - c. 800-668-9008 [www.gardolighting.com](http://www.gardolighting.com)
2. Or approved equal.

### B. MODEL

1. LUMEC RLAR Roadway Pole and Bracket Series
  - a. Short Reach Bracket is available for a 4"(102mm) to 4.9"(124mm) pole. Pole shape and size must be specified when ordered.
  - b. Catalog Style: RLAR
  - c. Dimensions: 15.25" X 2.375"
  - d. Finish: Black
  - e. Material: A356 Aluminum, mechanically assembled to the pole
2. Or approved equal.

- C. Installed poles, brackets, pole base covers, and luminaires shall be free of leaks, warps, dents, juts, paint imperfections or other faults that are a result of poor workmanship in installation.

## 2.5 CONSTRUCTION REQUIREMENTS

- A. Contractor shall perform all work to be in conformance with local and national code requirements.
- B. Before installing any of the work, the Contractor shall see that it does not interfere with the existing or proposed underground utilities or other fixed elements. Work installed by the Contractor which interferes with or modifies the design as shown on the Contract Drawings shall be changed as directed by the Owner's Representative, and all costs incidental to such changes shall be paid by the Contractor.
- C. In any and all cases of discrepancy in figures, plans or specifications the matter shall be immediately submitted to the Owner's Representative for decision.
- D. Bases, poles and luminaries shall be installed in accordance with the manufacturers' recommendation and the construction drawings.





### PART 3 - EXECUTION

#### 3.1 PREPARATION

- A. Install lighting in accordance with the NEC, as shown on the drawings, and in accordance with manufacturer's recommendations.
- B. Adjust luminaires that require field adjustment or aiming.
- C. Verify operation after installing poles, luminaires, and energizing circuits.

#### 3.2 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine roughing-in for luminaire electrical conduit to verify actual locations of conduit connections before luminaire installation.
- C. Examine walls, roofs, canopy ceilings and overhang ceilings for suitable conditions where luminaires will be installed.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.3 INSTALLATION

- A. Install lamps in each luminaire.
- B. Fasten luminaire to indicated structural supports. Additional support requirements include:
- C. Use fastening methods and materials selected to resist seismic forces defined for the application and approved by manufacturer.
  - 1. Support: Attached to structural members in walls.
  - 2. Wiring Method: Install cables in raceways. Conceal raceways and cables.
  - 3. Install luminaires level, plumb, and square with finished grade unless otherwise indicated. Install luminaires at height and aiming angle as indicated on Drawings.
  - 4. Coordinate layout and installation of luminaires with other construction.
  - 5. Adjust luminaires that require field adjustment or aiming. Include adjustment of photoelectric device to prevent false operation of relay by artificial light sources, favoring a north orientation.



### 3.4 CORROSION PREVENTION

- A. Aluminum: Do not use in contact with earth or concrete. When in direct contact with a dissimilar metal, protect aluminum by insulating fittings or treatment.
- B. Steel Conduits: Comply with Section 260533 "Raceways" In concrete foundations, wrap conduit with thick, pipe-wrapping plastic tape applied with a 50 percent overlap.

### 3.5 FINISHING

- A. Inspect each installed luminaire for damage. Replace damaged luminaires and components.
- B. Luminaire will be considered defective if it does not pass tests and inspections.
- C. Prepare a written report of tests, inspections, observations, and verifications indicating and interpreting results. If adjustments are made to lighting system, retest to demonstrate compliance with standards.

END OF SECTION 265623



## SECTION 312000 - EARTH MOVING

### PART 1 - PART 1 GENERAL

#### 1.1 SCOPE

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

#### 1.2 RELATED SECTIONS

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

#### 1.3 REFERENCES AND STANDARDS

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

#### 1.4 SOILS REPORT

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

#### 1.5 PROJECT CONDITIONS

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



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

## PART 2 - MATERIALS

### 2.1 FILL FOR USE UNDER PAVING AND STRUCTURES

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

### 2.2 PLANTING SOIL FOR PLANT BACKFILL

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

## PART 3 - EXECUTION

### 3.1 PREPARATION

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

### 3.2 EXISTING UTILITIES

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



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

### 3.3 GENERAL SITE GRADING

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

### 3.4 FINISH GRADING

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

### 3.5 DRAINAGE

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

### 3.6 DISPOSAL OF WASTE MATERIALS

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



3.7 CLEANING

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

END OF SECTION 312000



## SECTION 312313 - SUBGRADE PREPARATION

### PART 1 - PART 1 GENERAL

#### 1.1 SUMMARY

#### 1.2 SCOPE

- A. Provide labor, material and equipment for the subgrade preparation and the base material installation.

#### 1.3 RELATED SECTIONS

- A. Section 312000: Earth Moving
- B. Section 024113: Site Demolition
- C. Section 033000: Cast-In-Place Concrete

#### 1.4 REFERENCES AND STANDARDS

- A. Perform work in accordance with applicable laws, codes and regulations.
- B. ASTM Standards

### PART 2 - MATERIALS

#### 2.1 EXISTING SOIL

- A. Free from vegetative matter or other deleterious substances.
- B. The percentage composition by weight of aggregate base shall conform to the Standard Specifications.



### PART 3 - EXECUTION

#### 3.1 SUBGRADE PREPARATION

- A. Subgrade (the upper one foot of the soil that will be supporting structures) is that area on which pavement, surfacing, base, sub-base, or a layer of other material which may be specified, is to be placed.
- B. Plow or scarify subgrade to a depth of 6" below the final subgrade elevation; and by harrowing, dry rolling and breaking clods, the earth shall be brought to finely divided condition. Remove boulders, hardened material, roots of 1" or larger and/or rock encountered. The earth shall be uniform for the full depth and width of the subgrade.
- C. Water loose earth to a uniform depth of 4" .
- D. The finished subgrade, immediately prior to placing subsequent material thereon, shall be compacted to 95% standard proctor.

#### 3.2 BASE

- A. Base shall be readily compacted to 95% and spread with equipment that will provide a uniform layer conforming to the planned section.

#### 3.3 CLEANUP

- A. Upon completion of the subgrade preparation and base, remove surplus construction materials, earth and debris so that the job site is left in a neat and orderly condition.

END OF SECTION 312313





## SECTION 312500 - EROSION AND SEDIMENTATION CONTROLS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Furnish all labor, materials, equipment and incidentals required and perform all installation, maintenance, removal and area cleanup related to erosion and sedimentation control work required to meet Federal, State, and local permit requirements and as shown on the Drawings and as specified herein. The work shall include, but not necessarily be limited to; installation of temporary access ways and staging areas, compost filter socks, catch basin sediment filters (silt sack), sediment removal and disposal, device maintenance, removal of temporary devices, and final cleanup.
- B. Related Sections:
  - 1. Section 329119 - Landscape Grading.

#### 1.2 REFERENCES

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

#### 1.3 SUBMITTALS

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



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

#### 1.4 QUALITY ASSURANCE

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

#### PART 2 - PRODUCTS

##### 2.1 MATERIALS

- A. When work is performed outside of normal seeding window straw mulch shall be utilized on all newly graded areas to protect areas against washouts and erosion. Straw mulch shall be comprised of threshed straw of oats, wheat, barley, or rye that is free from noxious weeds, mold or other objectionable material. The straw mulch shall contain at least 50 percent by weight of material to be 10-in or longer. Straw shall be in an air-dry condition and suitable for placement with blower equipment.
- B. If newly seeded areas contain slopes greater than 4:1 install Jute Mesh/Netting for erosion control. Jute Mesh should conform to following specifications:
  1. Open Area: 70 - 75%
  2. Mesh size: 11mm x 18mm
  3. Water Absorption: >450% of fabric weight
  4. Thickness: 0.25 inch (6 mm)
  5. Recommended shear stress: 0.45 lbs./sq.ft. (22 N/sq.m)
  6. Recommended flow capacity: 6 fps (1.8 m/s)



C. Compost Filter Sock

1. Machine produced.
2. Straw filled tubes of compacted straw of rice, wheat or barley.
3. Compost filter sock to be certified as weed free.
4. Netting for tubes to be seamless, high density polyethylene with ultra violet inhibitors.
5. Roll length to be 10.0 feet to 25.0 feet.
6. Weight per linear foot, 12-inch: 2.5 lbs. minimum 9-inch: 1.5 lbs. minimum
7. Stakes shall be wooden, 1 1/8-inch x 1 1/8-inch x 2.5 feet long, with lower ends tapered to facilitate driving into compacted soil. Rebar may be substituted for wooden stakes

PART 3 - EXECUTION

3.1 INSTALLATION

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

3.2 MAINTENANCE AND INSPECTION

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



### 3.3 REMOVAL AND FINAL CLEANUP

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

END OF SECTION 312500



## SECTION 319001 - CONSTRUCTION ACCESS

### PART 1 - PART 1 – GENERAL

#### 1.1 RELATED INFORMATION

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

#### 1.2 SCOPE:

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

#### 1.3 REFERENCE STANDARDS:

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

### PART 2 - PART 2 – PRODUCTS

#### 2.1 MATERIALS:

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



### PART 3 - PART 3 – EXECUTION

#### 3.1 INSTALLATION:

- A. Clear the area of the construction accesses of all vegetation, roots, stumps, or other objectionable material. Excavate the area to subgrade and grade the area. Place geosynthetic material on the prepared subgrade before the placement of the stone pad according to the specified dimensions.
- B. Install stabilized stone pads for use as construction entrances at location shown on plans.
- C. Dimensions:
  1. Thickness. Ensure that the thickness of the stabilized stone pad is a minimum of 5 in.
  2. Width. Ensure that the width is not less than the full width of the respective points of ingress or egress.
  3. Length. Provide a length for construction accesses that is at least 50 ft where the soils are sands or gravels, except where the traveled length is less than 50 ft. Where soils are clays or silts, provide a length for construction accesses that is at least 100 ft, except where the traveled length is less than 100 ft.

#### 3.2 CLEAN UP:

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

END OF SECTION 319001



## SECTION 319002 - MAINTENANCE AND CLEANING OF EROSION AND POLLUTION CONTROLS

### PART 1 - PART 1 – GENERAL

#### 1.1 RELATED INFORMATION

- A. 31 25 00 - Erosion and Sedimentation Controls
- B. 31 90 01 - Construction Accesses

#### 1.2 SCOPE:

- A. This work includes:
  - 1. The maintenance and cleaning of erosion, sediment, and pollution prevention control items
  - 2. Performing inspection and documentation of RIDOT SWPPP and/or RIDOT SESC reports year-round
- B. Install all erosion, sediment, and pollution prevention controls and devices before the start of excavation when required by the RIDOT SWPPP/SESC. There is no winter shutdown period associated with RIDOT Blue Book Section 212. RIDOT Blue Book Section 907 addresses dust control to reduce dust nuisance and hazards.

#### 1.3 REFERENCE STANDARDS:

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

### PART 2 - PART 2 – PRODUCTS

#### 2.1 MATERIALS:

- A. Provide materials used to repair and restore damaged erosion, sediment, and pollution prevention controls that comply with RIDOT Blue Book Subsections 206.02.



### PART 3 - PART 3 – EXECUTION

#### 3.1 MAINTANENCE:

- A. Maintain erosion, sediment, and pollution prevention controls. Provide erosion, sediment, and pollution prevention controls that prevent, under normal weather conditions, both the movement of soil materials and the intrusion of sediment-laden discharges into environmentally sensitive areas.
- B. Do not initiate or continue construction until all specified erosion, sediment, and pollution controls are in place, properly installed, and accepted by the Engineer.
- C. Routinely inspect erosion, sediment, and pollution prevention controls according to the SWPPP or SESC. Conduct these inspections at a minimum of every seven calendar days, within 24 hours of corrective actions occurring, and within 24 hours if the site receives 0.25 in. of rainfall from an individual storm event.
- D. After each inspection, implement corrective actions and perform all necessary cleaning, maintenance, and repairs when the maintenance of the erosion, sediment, and pollution controls is required. Initiate the requisite cleaning, maintenance, and repairs no later than the next consecutive calendar day after the SWPPP or SESC inspection was conducted and expeditiously perform the cleaning, maintenance, and repair work until the issue is remedied. If a holiday or weekend storm event occurs, ensure that the resources are available to restore and, if necessary, to replace any damaged erosion controls.
- E. Perform SWPPP or SESC inspections until the following criteria are met:
  1. All disturbed areas are permanently stabilized, including storage/laydown areas.
  2. All Project specific regulatory permit requirements have been met.

#### 3.2 THRESHOLD FOR CLEANING EROSION, SEDIMENT AND POLLUTION PREVENTION CONTROLS:

- A. When directed by the Engineer and/or SWPPP inspector/Environmental Monitor, clean the erosion, sediment, and pollution controls after a rainstorm or when sediment deposits reach the heights indicated in the Table below.
- B. Minimum Threshold for Cleaning
  1. Erosion, Sediment, and Pollution Prevention Controls
    - a. Baled Straw Erosion Checks - ½ Bale Height
    - b. Silt Fence - 6 inches
    - c. Baled Straw Erosion Checks and Silt Fence Combined - ½ Bale Height
    - d. Compost Filter Sock - ½ Sock Height





2. Check Dams
  - a. Sand Bag Erosion Dike -  $\frac{1}{2}$  Dike Height
  - b. Stone Check Dam -  $\frac{1}{2}$  Dam Height
  - c. Compost Filter Sock Check Dam -  $\frac{1}{2}$  Sock Height
3. Dewatering
  - a. Dewatering Basins:  $\frac{1}{2}$  Original Basin Height
  - b. Filter Fabric Retention Basin:  $\frac{1}{2}$  Original Basin Height
4. Storm Drain Inlet Protection
  - a. Silt Fence Inlet Protection: 6 in.
  - b. Baled Straw Inlet Protection:  $\frac{1}{2}$  Bale Height
  - c. Sack Insert Inlet Protection:  $\frac{1}{3}$  Sack Height or per manufacturer's requirements
5. Temporary Sediment Basin:  $\frac{1}{2}$  Depth Below Outlet Elevation
6. Construction Accesses: When track out is occurring

END OF SECTION 319002



## SECTION 319003 - HAZARDOUS MATERIALS

### PART 1 - PART 1 – GENERAL

#### 1.1 SCOPE:

- A. This work includes observation of the work site to ensure project safety.

#### 1.2 REFERENCE STANDARDS:

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

### PART 2 - PART 2 – EXECUTION

#### 2.1 OBSERVATION:

- A. If the Contractor encounters or exposes any abnormal condition that may indicate the presence of a hazardous material or toxic waste, it shall immediately suspend Work in the area and notify the Engineer in writing. The Contractor's operation in this area shall not resume until directed by the Engineer in writing. However, the Contractor shall continue working in other areas of the Project.
  - 1. Abnormal conditions shall include:
    - a. Barrels
    - b. Tanks
    - c. Discolored earth
    - d. Obnoxious odors
    - e. Obnoxious or discolored liquids
    - f. Excessively hot earth
    - g. Smoke
    - h. Any other condition that could indicate the presence of hazardous material or toxic waste
- B. The Contractor shall comply with all Federal, State, and local laws, ordinances, rules, regulations, and orders for the disposition of the hazardous material or toxic waste.

END OF SECTION 319003



## SECTION 321216 - ASPHALT PAVING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:

- 1. Hot-mix asphalt paving.

- B. Related Requirements:

- 1. Section 024119 "Selective Demolition" for demolition and removal of existing asphalt pavement.
- 2. Section 312000 "Earth Moving" for subgrade preparation, fill material, separation geotextiles, unbound-aggregate subbase and base courses, and aggregate pavement shoulders.
- 3. Section 321313 "Concrete Paving" for concrete pavement and for separate concrete curbs, gutters, and driveway aprons.
- 4. Section 321400 "Unit Paving" for granite curbs.

#### 1.3 UNIT PRICES

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

#### 1.4 PREINSTALLATION MEETINGS

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

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



#### 1.5 ACTION SUBMITTALS

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

#### 1.6 INFORMATIONAL SUBMITTALS

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

#### 1.7 QUALITY ASSURANCE

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

#### 1.8 FIELD CONDITIONS

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



## PART 2 - PRODUCTS

### 2.1 AGGREGATES

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

### 2.2 ASPHALT MATERIALS

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



## 2.3 AUXILIARY MATERIALS

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

## 2.4 MIXES

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

## PART 3 - EXECUTION

### 3.1 EXAMINATION

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

### 3.2 PREPARATION

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

### 3.3 REPAIRS

### 3.4 SURFACE PREPARATION

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



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

### 3.5 PLACING HOT-MIX ASPHALT

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

### 3.6 COMPACTION

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



- B. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.
- C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:
  - 1. Average Density: 92 percent of reference maximum theoretical density according to ASTM D 2041/D 2041M, but not less than 90 percent or greater than 96 percent.
- D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.
- E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.
- F. Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.
- G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.
- H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

### 3.7 INSTALLATION TOLERANCES

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





### 3.8 SURFACE TREATMENTS

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

### 3.9 FIELD QUALITY CONTROL

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

### 3.10 WASTE HANDLING

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

END OF SECTION 321216



## SECTION 321313 - CONCRETE PAVING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes Concrete Paving Including the Following:
  - 1. Walks
  - 2. Ramps
  - 3. Pads for Benches & Trash Receptacles.
  - 4. Pad for Conex box storage container
- B. Related Requirements:
  - 1. Section 033000 "Cast-in-Place Concrete" for general building applications of concrete.

#### 1.3 DEFINITIONS

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

#### 1.4 PREINSTALLATION MEETINGS

#### 1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples for Initial Selection: For each type of product, ingredient, or admixture requiring color selection.



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

## 1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified ready-mix concrete manufacturer .
- B. Material Certificates: For the following, from manufacturer:
  - 1. Cementitious materials.
  - 2. Fiber reinforcement and reinforcement accessories.
  - 3. Aggregate
  - 4. Admixtures.
  - 5. Curing compounds.
  - 6. Applied finish materials.
  - 7. Bonding agent or epoxy adhesive.
- C. Material Test Reports: For each of the following:
  - 1. Aggregates: Include service-record data indicating absence of deleterious expansion of concrete due to alkali-aggregate reactivity.

## 1.7 QUALITY ASSURANCE

- A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
  - 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities" (Quality Control Manual - Section 3, "Plant Certification Checklist").
- B. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
  - 1. Build mockups of full-thickness sections of concrete paving to demonstrate typical joints; surface finish, texture, and color; curing; and standard of workmanship.
  - 2. Build mockups of concrete paving in the location and of the size indicated or, if not indicated, build mockups where directed by Architect and not less than 24" x 60" .
  - 3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.



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

## 1.8 PRECONSTRUCTION TESTING

## 1.9 FIELD CONDITIONS

- A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.
- B. Cold-Weather Concrete Placement: Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing, or low temperatures. Comply with ACI 306.1 and the following:
  1. When air temperature has fallen to or is expected to fall below **40 deg F**, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than **50 deg F** and not more than **80 deg F** at point of placement.
  2. Do not use frozen materials or materials containing ice or snow.
  3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in design mixtures.
- C. Hot-Weather Concrete Placement: Comply with **ACI 301** and as follows when hot-weather conditions exist:
  1. Cool ingredients before mixing to maintain concrete temperature below **90 deg F** at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated in total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.

## PART 2 - PRODUCTS

### 2.1 CONCRETE, GENERAL

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

### 2.2 FORMS

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



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

## 2.3 CONCRETE MATERIALS

- A. Cementitious Materials: Use the following cementitious materials, of same type, brand, and source throughout Project:
  - 1. Portland Cement: ASTM C 150/C 150M, gray portland cement Type I .
  - B. Normal-Weight Aggregates: ASTM C 33/C 33M, Class 4M , uniformly graded. Provide aggregates from a single source with documented service-record data of at least 10 years' satisfactory service in similar paving applications and service conditions using similar aggregates and cementitious materials.
    - 1. Maximum Coarse-Aggregate Size: **3/4 inch** nominal.
    - 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
  - C. Chemical Admixtures: Admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.
    - 1. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
  - D. Color Pigment: ASTM C 979/C 979M, synthetic mineral-oxide pigments or colored water-reducing admixtures; color stable, free of carbon black, nonfading, and resistant to lime and other alkalis.
    - 1. **Manufacturers:** Subject to compliance with requirements, provide products by the following:
      - a. Brickform; a division of Solomon Colors.
    - 2. Color: Sterling UMX-140 .
  - E. Water: Potable and complying with ASTM C 94/C 94M.

## 2.4 FIBER REINFORCEMENT

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



## 2.5 CURING MATERIALS

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

## 2.6 CONCRETE MIXTURES

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



1. Compressive Strength (28 Days): **4000 psi** .
2. Maximum W/C Ratio at Point of Placement: 0.45 .
3. Slump Limit: **4 inches** , plus or minus **1 inch**.

## 2.7 CONCRETE MIXING

- A. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Mix concrete materials in appropriate drum-type batch machine mixer.
  1. For concrete batches of **1 cu. yd.** or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released.
  2. For concrete batches larger than **1 cu. yd.**, increase mixing time by 15 seconds for each additional **1 cu. yd.**.
  3. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixing time, quantity, and amount of water added.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

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

### 3.2 PREPARATION

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



### 3.3 EDGE FORMS AND SCREED CONSTRUCTION

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

### 3.4 JOINTS

- A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.
- B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.
- C. Edging: After initial floating, tool edges of paving, and joints in concrete with an edging tool to a **1/4-inch** radius. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

### 3.5 CONCRETE PLACEMENT

- A. Before placing concrete, inspect and complete formwork installation and items to be embedded or cast-in.
- B. Remove snow, ice, or frost from subbase surface before placing concrete. Do not place concrete on frozen surfaces.
- C. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.
- D. Comply with **ACI 301** requirements for measuring, mixing, transporting, and placing concrete.
- E. Do not add water to concrete during delivery or at Project site. Do not add water to fresh concrete after testing.
- F. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
- G. Consolidate concrete according to **ACI 301** by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.





- H. Screed paving surface with a straightedge and strike off.
- I. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleedwater appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

### 3.6 FLOAT FINISHING

- A. General: Do not add water to concrete surfaces during finishing operations.
- B. Float Finish: Begin the second floating operation when bleedwater sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Rfloat surface immediately to uniform granular texture.
  - 1. Medium-to-Fine-Textured Broom Finish: Draw a soft-bristle broom across float-finished concrete surface, perpendicular to line of traffic, to provide a uniform, fine-line texture.

### 3.7 CONCRETE PROTECTION AND CURING

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



### 3.8 PAVING TOLERANCES

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

### 3.9 REPAIR AND PROTECTION

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

END OF SECTION 321313



## SECTION 321400 - UNIT PAVING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:

- 1. Granite Curb

- B. Related Requirements:

- 1. Section 31200 - Earth Moving for Subgrade preparation

#### 1.3 PREINSTALLATION MEETINGS

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

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For the following:

- 1. Mortar and grout materials.
  - 2. Granite curbs.

- B. Samples for Initial Selection: For each type of unit paver indicated .

- 1. Granite curbs.



1.5 INFORMATIONAL SUBMITTALS

1.6 QUALITY ASSURANCE

- A. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.
  - 1. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 DELIVERY, STORAGE, AND HANDLING

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

1.8 FIELD CONDITIONS

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



## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

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

### 2.2 CURBS AND EDGE RESTRAINTS

- A. Granite Curb from on-site Stockpile
- B. Size: +/-6"W x +/-18"T, length varies

### 2.3 AGGREGATE SETTING-BED MATERIALS

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

## PART 3 - EXECUTION

### 3.1 EXAMINATION

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

### 3.2 PREPARATION

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



### 3.3 INSTALLATION, GENERAL

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

### 3.4 AGGREGATE SETTING-BED APPLICATIONS

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

### 3.5 REPAIRING, POINTING, AND CLEANING

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



- C. Cleaning: Remove excess grout from exposed paver surfaces; wash and scrub clean.

END OF SECTION 321400



## SECTION 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.

- B. Related Requirements:

- 1. Section 033000 for cast-in-place concrete and post footings.

#### 1.3 PREINSTALLATION MEETINGS

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

- 1. Review Scope of Work for repairs and new installation of fences and gates .

#### 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.
  - c. Accessories: Fence-top Protection Device .
  - d. Gates and hardware.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Product Data Sheet .





## 1.6 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.

## 1.7 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.
- Failures include, but are not limited to, the following:
    - Failure to comply with performance requirements.
    - Deterioration of metals, metal finishes, and other materials beyond normal weathering.
  - 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:
- Fabric Height: As indicated on Drawings.
  - Steel Wire for Fabric: Wire diameter of 0.148 inch 9 Gauge .
    - Mesh Size: 2 inches .
    - Zinc-Coated Fabric: ASTM A 392, Type II, Class 2, 2.0 oz./sq. ft. with zinc coating applied after weaving.
  - Selvage: Knuckled at both selvages .

### 2.2 FENCE FRAMEWORK

- A. Posts and Rails : 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:
- Fence Height: As indicated on Drawings .
  - Horizontal Framework Members: top and bottom rails according to ASTM F 1043.
    - Top Rail: 1- 5/8" Diameter .
  - Metallic Coating for Steel Framework:
    - Coatings: Any coating above.



## 2.3 TENSION WIRE

- A. Metallic-Coated Steel Wire: **7 Gauge** 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. Matching chain-link fabric coating weight.

## 2.4 SWING GATES

- A. General: ASTM F 900 for gate posts and double swing gate types.
  - 1. Gate Leaf Width: As indicated .
  - 2. Framework Member Sizes and Strength: Based on gate fabric height as indicated .
- B. Pipe and Tubing:
  - 1. Zinc-Coated Steel: ASTM F 1043 and ASTM F 1083; protective coating and finish to match fence framework .
  - 2. Gate Posts: Round tubular steel .
  - 3. Gate Frames and Bracing: Round tubular steel .
- C. Frame Corner Construction: Welded .
- D. Hardware:
  - 1. Hinges: 360-degree inward and outward swing.
  - 2. Latch: Permitting operation from both sides of gate.
  - 3. Padlock and Chain: provided by owner .

## 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. Rail Clamps: Line and corner boulevard clamps for connecting bottom rails to posts.



- E. Tension and Brace Bands: Pressed steel .
- F. Tension Bars: , 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. Truss Rod Assemblies: Steel, hot-dip galvanized after threading rod and turnbuckle or other means of adjustment.
- H. 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: 9 Gauge diameter wire ; galvanized coating thickness matching coating thickness of chain-link fence fabric.
- I. Finish:
  - 1. Metallic Coating for Pressed Steel or Cast Iron: Not less than **1.2 oz./sq. ft.** of zinc.

## 2.6 GROUT AND ANCHORING CEMENT

- A. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107/C 1107M. Provide grout, recommended in writing by manufacturer, for exterior applications.
- B. Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound. Provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating, and that is recommended in writing by manufacturer for exterior applications.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for 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 Architect.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.



### 3.2 PREPARATION

- A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of **500 feet** or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

### 3.3 CHAIN-LINK FENCE INSTALLATION

- A. Install chain-link fencing according to ASTM F 567 and more stringent requirements specified.
  1. Install fencing on established boundary lines inside property line.
- B. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil.
- C. 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. Concealed Concrete: Place top of concrete **2 inches** below grade to allow covering with surface material.
- D. Terminal Posts: Install terminal end, corner, and gate posts according to ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment of 15 degrees or more as indicated on Drawings . For runs exceeding **500 feet**, space pull posts an equal distance between corner or end posts.
- E. Line Posts: Space line posts uniformly at **10 feet** o.c.
- F. 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 inches** 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.
- G. 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. As indicated on Drawings .
- H. 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.
- I. Intermediate and Bottom Rails: Secure to posts with fittings.
- J. Chain-Link Fabric: Apply fabric to outside of enclosing framework. Leave **1-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.
- K. 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.
- L. 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.
- M. Fasteners: Install nuts for tension bands and carriage bolts on the side of fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

### 3.4 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.

### 3.5 ADJUSTING

- A. Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.
- B. Lubricate hardware and other moving parts.

END OF SECTION 323113



## SECTION 323116.10 - ORNAMENTAL WELDED WIRE FENCES AND GATES

### PART 1 - GENERAL:

#### 1.1 SECTION INCLUDES

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

#### 1.2 RELATED SECTIONS

- A. Section 312213 - Rough Grading

#### 1.3 SYSTEM DESCRIPTION

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

#### 1.4 QUALITY ASSURANCE

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

#### 1.5 REFERENCES

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



## 1.6 SUBMITTALS

- A. Manufacturer's submittal package shall be provided prior to installation.
- B. Changes in specification may not be made after the bid date.
- C. Samples of assembled materials, components, hardware, accessories, and/or colors, if requested.

## 1.7 PRODUCT DELIVERY, STORAGE AND HANDLING

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

## PART 2 - PRODUCTS:

### 2.1 MANUFACTURER

- A. The fencing system shall be Patriot Ornamental Wire Fence as manufactured by Jerith Manufacturing LLC., 14400 McNulty Road, Philadelphia, PA 19154. Telephone: 800-344-2242; Fax: 215-676-9756; email: sales@jerith.com.
- B. Substitutions: Approved equal permitted.
- C. Nominal fence height shall be 48" inches.
- D. Color shall be Black.

### 2.2 MATERIALS

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



- B. Infill: Section infill wires shall be steel with a minimum yield strength of 50,000 psi. The steel shall be galvanized to meet the designation of "regular coating" in accordance with requirements of ASTM A641.

## 2.3 FINISH

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

## 2.4 FABRICATION

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





top hinge side to the bottom latch side of the gate. All gates shall support a 300 lb. vertical load on the latch side of the gate without collapsing.

- D. Heavy duty grade gate frames shall consist of 2" square x .125" wall gate uprights and 1.5" x 1.5" x .125" U-channels for top and bottom members welded at each connection with a 1" x .125" wall diagonal brace welded into place. Infill of matching Fence Section shall be welded into frame.

## 2.5 WARRANTY

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

## PART 3 - EXECUTION:

### 3.1 PREPARATION

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

### 3.2 FENCE INSTALLATION

- A. Install fence in accordance with the manufacturer's instructions.
- B. Excavate post holes to proper depth to suit local conditions for stability and support of the fence system without disturbing the underlying materials. Excavate deeper as required for adequate support in soft and loose soils.
- C. Set fence posts in concrete footers at 70" spacing from inside of post to inside of post. Note that this fence must be stepped for installations on a slope. It can not follow the grade.
- D. Center and align posts in holes to required depth. Place concrete around posts and tamp for consolidation. After tamping, check alignment of posts, and make necessary corrections before the concrete hardens.
- E. Insert rail ends into horizontal rails and fasten in place to the posts.
- F. When fence is installed on a slope, panels will be stepped evenly down the slope, with a 12" maximum vertical difference between adjacent panels. Half-sized panels may be used on steep slopes (see drawings for reference).



### 3.3 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.

### 3.4 ACCESSORIES

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

### 3.5 CLEANING

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

END OF SECTION 323116.10



## SECTION 323300 - SITE FURNISHINGS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

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

#### 1.3 ACTION SUBMITTALS

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

#### 1.4 INFORMATIONAL SUBMITTALS

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

#### 1.5 CLOSEOUT SUBMITTALS

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



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

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

## PART 2 - PRODUCTS

### 2.1 SEATING

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

### 2.2 TABLES

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

### 2.3 TRASH RECEPTACLES

- A. 26" x 32" round black steel trash receptacle with dome lid surface mount on concrete pad, Model # 26BTR5/ETR55/DL3 as manufactured by The Cary Company.
- B. Approved Equal

### 2.4 FABRICATION

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



## 2.5 GENERAL FINISH REQUIREMENTS

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

## PART 3 - EXECUTION

### 3.1 EXAMINATION

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

### 3.2 INSTALLATION

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



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

END OF SECTION 323300



## SECTION 329119 - LANDSCAPE GRADING

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Final grade topsoil for finish landscaping.

B. Related Sections:

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

#### 1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. Loam:

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

#### 1.3 SUBMITTALS

A. Section 013300 - Submittal Procedures: Submittal procedures

B. Samples: Submit, in air-tight containers, 1 cup sample of loam to testing laboratory.

C. Materials Source: Submit name of imported materials source.

#### 1.4 QUALITY ASSURANCE

A. Furnish each topsoil material from single source throughout the Work.

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



## PART 2 - PRODUCTS

### 2.1 MATERIAL

- A. Topsoil: Fill Type S2 as specified in Section 31 20 00

## PART 3 - EXECUTION

### 3.1 EXAMINATION

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

### 3.2 PREPARATION

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

### 3.3 SUBSTRATE PREPARATION

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

### 3.4 PLACING LOAM

- A. Place Loam in areas where planting is required. Minimum depth of 6", Place loam during dry weather.
- B. Fine grade loam to eliminate rough or low areas. Maintain profiles and contour of subgrade.
- C. Remove roots, weeds, rocks, and foreign material while spreading.
- D. Manually spread loam close to plant material, and path to prevent damage.





- E. Roll placed loam.
- F. Remove surplus subsoil and loam from site.
- G. Leave stockpile area and site clean and raked, ready to receive landscaping.

### 3.5 TOLERANCES

- A. Section 014000 - Quality Requirements: Tolerances.
- B. Top of loam: Plus or minus **1/2 inch**.

### 3.6 PROTECTION OF INSTALLED WORK

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

END OF SECTION 329119



## SECTION 329200 - TURF AND GRASSES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:

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

- B. Related Requirements:

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

#### 1.3 DEFINITIONS

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



1.4 PREINSTALLATION MEETINGS

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

1.5 INFORMATIONAL SUBMITTALS

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

1.6 CLOSEOUT SUBMITTALS

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

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful turf and meadow establishment.
  - 1. Professional Membership: Installer shall be a member in good standing of either the National Association of Landscape Professionals or AmericanHort.
  - 2. Experience: Five years' experience in turf installation in addition to requirements in Section 014000 "Quality Requirements."
  - 3. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
  - 4. Personnel Certifications: Installer's field supervisor shall have certification in one of the following categories from the National Association of Landscape Professionals:
    - a. Landscape Industry Certified Technician - Exterior.
    - b. Landscape Industry Certified Lawn Care Manager.
    - c. Landscape Industry Certified Lawn Care Technician.
  - 5. Pesticide Applicator: State licensed, commercial.



## 1.8 DELIVERY, STORAGE, AND HANDLING

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

## 1.9 FIELD CONDITIONS

- A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of Substantial Completion.
  - 1. Fall Planting: <Insert dates>.
- B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

## PART 2 - PRODUCTS

### 2.1 SEED MIXES

- A. Use the following seed mix for Full/Part Sun areas:
  - 1. Endophyte Enhanced Mix (modified):
    - a. 30% Improved Perennial Rye
    - b. 30% Turf Type Tall Fescue
    - c. 35% Chewings Fescue
    - d. 5% Miniature or Dutch White Clover
  - 2. Available from:
    - a. Allen's Seed Store - 693 S County Trail Exeter, RI 02822 Phone: 401-294-2722
    - b. Approved Equal
- B. Use the following mix for the Shade/Part Shade Areas:



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

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

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

## 2.2 FERTILIZERS

- A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:
  1. Composition: fertilizer to have a ratio of 18 Nitrogen (N) - 0 Phosphorous (P) - 12 Potassium (K)
- B. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:
  1. Composition: fertilizer to have a ratio of 18 Nitrogen (N) - 0 Phosphorous (P) - 12 Potassium (K)



### 2.3 EROSION-CONTROL MATERIALS

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

## PART 3 - EXECUTION

### 3.1 EXAMINATION

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

### 3.2 PREPARATION

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

### 3.3 TURF AREA PREPARATION

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



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

### 3.4 PREPARATION FOR EROSION-CONTROL MATERIALS

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

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

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



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

### 3.6 HYDROSEEDING (ALL OTHER AREAS)

- A. Hydroseeding: Mix specified seed, fertilizer, and fiber mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.
  1. Mix slurry with fiber-mulch manufacturer's recommended tackifier.
  2. Spray-apply slurry uniformly to all areas to be seeded in a one-step process. Apply slurry at a rate so that mulch component is deposited at not less than **1500-lb/acre** dry weight, and seed component is deposited at not less than the specified seed-sowing rate (5-7 lbs/1000 sq ft).

### 3.7 TURF MAINTENANCE

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





become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain the following grass height:

1. Mow Lawn Areas to a height of **2 to 3 inches** .
2. Mow Native Grass/Wildflower Areas twice per year in late Spring and Late Fall

### 3.8 SATISFACTORY TURF

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

1. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any **10 sq. ft.** and bare spots not exceeding **5 by 5 inches** .

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

### 3.9 CLEANUP AND PROTECTION

A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

B. Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of them off Owner's property.

C. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.

D. Remove nondegradable erosion-control measures after grass establishment period.

END OF SECTION 329200



## SECTION 329300 - PLANTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

##### A. Section Includes:

1. Plants.
2. Tree stabilization.
3. Tree-watering devices.

##### B. Related Requirements:

1. Section 015639 "Temporary Tree and Plant Protection" for protecting, trimming, pruning, repairing, and replacing existing trees to remain that interfere with, or are affected by, execution of the Work.
2. Section 329119 "Landscape Grading" for preparation of planting beds.

#### 1.3 DEFINITIONS

- A. Backfill: The earth used to replace or the act of replacing earth in an excavation.
- B. Balled and Burlapped Stock: Plants dug with firm, natural balls of earth in which they were grown, with a ball size not less than diameter and depth recommended by ANSI Z60.1 for type and size of plant required; wrapped with burlap, tied, rigidly supported, and drum laced with twine with the root flare visible at the surface of the ball as recommended by ANSI Z60.1.
- C. Finish Grade: Elevation of finished surface of planting soil.
- D. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. They also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant. Some sources classify herbicides separately from pesticides.



- E. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. Pests include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.
- F. Planting Area: Areas to be planted.
- G. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth. See Section 329113 "Soil Preparation" for drawing designations for planting soils.
- H. Plant; Plants; Plant Material: These terms refer to vegetation in general, including trees, shrubs, vines, ground covers, ornamental grasses, bulbs, corms, tubers, or herbaceous vegetation.
- I. Root Flare: Also called "trunk flare." The area at the base of the plant's stem or trunk where the stem or trunk broadens to form roots; the area of transition between the root system and the stem or trunk.
- J. Stem Girdling Roots: Roots that encircle the stems (trunks) of trees below the soil surface.
- K. Subgrade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.

#### 1.4 COORDINATION

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

#### 1.5 PREINSTALLATION MEETINGS

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

#### 1.6 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Plant Materials: Include quantities, sizes, quality, and sources for plant materials.
  - 2. Plant Photographs: Include color photographs in digital 3- by 5-inch print format of each required species and size of plant material as it will be furnished to Project. Take photographs from an angle depicting true size and condition of the typical plant to be furnished. Include a scale rod or other measuring device in each photograph. For species where more than 20 plants are required, include a minimum of three photographs showing



the average plant, the best quality plant, and the worst quality plant to be furnished. Identify each photograph with the full scientific name of the plant, plant size, and name of the growing nursery.

#### 1.7 INFORMATIONAL SUBMITTALS

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

#### 1.8 CLOSEOUT SUBMITTALS

#### 1.9 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful establishment of plants.
  - 1. Professional Membership: Installer shall be a member in good standing of either the Professional Landcare Network or the American Nursery and Landscape Association.
  - 2. Experience: Five years' experience in landscape installation in addition to requirements in Section 014000 "Quality Requirements."
  - 3. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
  - 4. Personnel Certifications: Installer's field supervisor or personnel assigned to the Work shall have certification in one or all of the following categories from the Professional Landcare Network:
    - a. Landscape Industry Certified Technician - Exterior.
    - b. Landscape Industry Certified Interior.
    - c. Landscape Industry Certified Horticultural Technician.
  - 5. Pesticide Applicator: State licensed, commercial.
- B. Provide quality, size, genus, species, and variety of plants indicated, complying with applicable requirements in ANSI Z60.1.



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

#### 1.10 DELIVERY, STORAGE, AND HANDLING

- A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws if applicable.
- B. Bulk Materials:
1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
  2. Provide erosion-control measures to prevent erosion or displacement of bulk materials; discharge of soil-bearing water runoff; and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
  3. Accompany each delivery of bulk materials with appropriate certificates.
- C. Deliver bare-root stock plants within 24 hours of digging. Immediately after digging up bare-root stock, pack root system in wet straw, hay, or other suitable material to keep root system moist until planting. Transport in covered, temperature-controlled vehicles, and keep plants cool and protected from sun and wind at all times.
- D. Do not prune trees and shrubs before delivery. Protect bark, branches, and root systems from sun scald, drying, wind burn, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of plants during shipping and delivery. Do not drop plants during delivery and handling.



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

#### 1.11 FIELD CONDITIONS

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



## 1.12 WARRANTY

- A. Special Warranty: Installer agrees to repair or replace plantings and accessories that fail in materials, workmanship, or growth within specified warranty period.
1. Failures include, but are not limited to, the following:
    - a. Death and unsatisfactory growth, except for defects resulting from abuse, lack of adequate maintenance, or neglect by Owner.
    - b. Structural failures including plantings falling or blowing over.
    - c. Faulty performance of tree stabilization edgings and tree grates .
    - d. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
  2. Warranty Periods: From date of planting completion .
    - a. Trees, Shrubs, Vines, and Ornamental Grasses: 12 months.
  3. Include the following remedial actions as a minimum:
    - a. Immediately remove dead plants and replace unless required to plant in the succeeding planting season.
    - b. Replace plants that are more than 25 percent dead or in an unhealthy condition at end of warranty period.
    - c. A limit of one replacement of each plant is required except for losses or replacements due to failure to comply with requirements.
    - d. Provide extended warranty for period equal to original warranty period, for replaced plant material.

## PART 2 - PRODUCTS

### 2.1 PLANT MATERIAL

- A. General: Furnish nursery-grown plants true to genus, species, variety, cultivar, stem form, shearing, and other features indicated in Plant List, Plant Schedule, or Plant Legend indicated on Drawings and complying with ANSI Z60.1; and with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully branched, healthy, vigorous stock, densely foliated when in leaf and free of disease, pests, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.
1. Trees with damaged, crooked, or multiple leaders; tight vertical branches where bark is squeezed between two branches or between branch and trunk ("included bark"); crossing trunks; cut-off limbs more than **3/4 inch** in diameter; or with stem girdling roots are unacceptable.
  2. Collected Stock: Do not use plants harvested from the wild, from native stands, from an established landscape planting, or not grown in a nursery unless otherwise indicated.



- B. Provide plants of sizes, grades, and ball or container sizes complying with ANSI Z60.1 for types and form of plants required. Plants of a larger size may be used if acceptable to Architect, with a proportionate increase in size of roots or balls.
- C. Root-Ball Depth: Furnish trees and shrubs with root balls measured from top of root ball, which begins at root flare according to ANSI Z60.1. Root flare shall be visible before planting.
- D. Labeling: Label each plant of each variety, size, and caliper with a securely attached, waterproof tag bearing legible designation of common name and full scientific name, including genus and species. Include nomenclature for hybrid, variety, or cultivar, if applicable for the plant.
- E. If formal arrangements or consecutive order of plants is indicated on Drawings, select stock for uniform height and spread, and number the labels to assure symmetry in planting.

## 2.2 MULCHES

- A. Organic Mulch: Free from deleterious materials and suitable as a top dressing of trees and shrubs, consisting of one of the following:
  - 1. Type: Ground or shredded bark Wood and bark chips .
  - 2. Size Range: 3 inches minimum. .
  - 3. Color: Natural. No color dyed mulch.
- B. Compost Mulch: Well-composted, stable, and weed-free organic matter, pH of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through a 1-inch sieve; soluble-salt content of 2 to 5 dS/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:
  - 1. Organic Matter Content: 50 to 60 percent of dry weight.
  - 2. Feedstock: Agricultural, food, or industrial residuals; biosolids; yard trimmings; or source-separated or compostable mixed solid waste.

## 2.3 TREE-STABILIZATION MATERIALS

- A. Trunk-Stabilization Materials:
  - 1. Upright and Guy Stakes: Rough-sawn, sound, new hardwood , free of knots, holes, cross grain, and other defects, 2-by-2-inch nominal by length indicated, pointed at one end.
  - 2. Tree-Tie Webbing: UV-resistant polypropylene or nylon webbing with brass grommets.





## 2.4 TREE-WATERING DEVICES

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

## 2.5 MISCELLANEOUS PRODUCTS

- A. Mycorrhizal Fungi: Dry, granular inoculant containing at least 5300 spores per **lb** of vesicular-arbuscular mycorrhizal fungi and 95 million spores per **lb** of ectomycorrhizal fungi, 33 percent hydogel, and a maximum of 5.5 percent inert material.
- B. Tree Watering Bag: provide each tree with a ARBORRAIN TOWER TREE AND PLANT HYDRATOR by AM Leonard (or Approved Equal) following planting. Contractor is responsible for filling bag when it becomes empty for during active growing seasons for 1 year following substantial completion.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

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



- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

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

### 3.3 PLANTING AREA ESTABLISHMENT

- A. General: Prepare planting area for soil placement and mix planting soil according to Section 329113 "Soil Preparation." Section 329115 "Soil Preparation (Performance Specification)."
- B. Placing Planting Soil: Place and mix planting soil in-place over exposed subgrade Place manufactured planting soil over exposed subgrade Blend planting soil in place .
- C. Before planting, obtain Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.
- D. Application of Mycorrhizal Fungi: At time directed by Architect, broadcast dry product uniformly over prepared soil at application rate according to manufacturer's written recommendations .

### 3.4 EXCAVATION FOR TREES AND SHRUBS

- A. Planting Pits and Trenches: Excavate circular planting pits.
  - 1. Excavate planting pits with sides sloping inward at a 45-degree angle. Excavations with vertical sides are unacceptable. Trim perimeter of bottom leaving center area of bottom raised slightly to support root ball and assist in drainage away from center. Do not further disturb base. Ensure that root ball will sit on undisturbed base soil to prevent settling. Scarify sides of planting pit smeared or smoothed during excavation.
  - 2. Excavate approximately three times as wide as ball diameter for stock.
  - 3. Do not excavate deeper than depth of the root ball, measured from the root flare to the bottom of the root ball.
  - 4. If area under the plant was initially dug too deep, add soil to raise it to the correct level and thoroughly tamp the added soil to prevent settling.
  - 5. Maintain angles of repose of adjacent materials to ensure stability. Do not excavate subgrades of adjacent paving, structures, hardscapes, or other new or existing improvements.
  - 6. Maintain supervision of excavations during working hours.



7. Keep excavations covered or otherwise protected overnight, after working hours, and when unattended by Installer's personnel.
  8. If drain tile is indicated on Drawings or required under planting areas, excavate to top of porous backfill over tile.
- B. Backfill Soil: Subsoil and topsoil removed from excavations may be used as backfill soil unless otherwise indicated.
- C. Obstructions: Notify Architect if unexpected rock or obstructions detrimental to trees or shrubs are encountered in excavations.
1. Hardpan Layer: Drill **6-inch-** diameter holes, **24 inches** apart, into free-draining strata or to a depth of **10 feet**, whichever is less, and backfill with free-draining material.
- D. Drainage: Notify Architect if subsoil conditions evidence unexpected water seepage or retention in tree or shrub planting pits.
- E. Fill excavations with water and allow to percolate away before positioning trees and shrubs.

### 3.5 TREE, SHRUB, AND VINE PLANTING

- A. Inspection: At time of planting, verify that root flare is visible at top of root ball according to ANSI Z60.1. If root flare is not visible, remove soil in a level manner from the root ball to where the top-most root emerges from the trunk. After soil removal to expose the root flare, verify that root ball still meets size requirements.
- B. Roots: Remove stem girdling roots and kinked roots. Remove injured roots by cutting cleanly; do not break.
- C. Balled and Burlapped Stock: Set each plant plumb and in center of planting pit or trench with root flare **2 inches** above adjacent finish grades.
1. Backfill: Planting soil . For trees, use excavated soil for backfill.
  2. After placing some backfill around root ball to stabilize plant, carefully cut and remove burlap, rope, and wire baskets from tops of root balls and from sides, but do not remove from under root balls. Remove pallets, if any, before setting. Do not use planting stock if root ball is cracked or broken before or during planting operation.
  3. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
  4. Continue backfilling process. Water again after placing and tamping final layer of soil.
- D. and Stock: Set each plant plumb and in center of planting pit or trench with root flare **2 inches** above adjacent finish grades.



1. Backfill: Planting soil . For trees, use excavated soil for backfill.
  2. Carefully remove root ball from container without damaging root ball or plant.
  3. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
  4. Continue backfilling process. Water again after placing and tamping final layer of soil.
- E. Slopes: When planting on slopes, set the plant so the root flare on the uphill side is flush with the surrounding soil on the slope; the edge of the root ball on the downhill side will be above the surrounding soil. Apply enough soil to cover the downhill side of the root ball.
- 3.6 TREE, SHRUB, AND VINE PRUNING
- A. Remove only dead, dying, or broken branches. Do not prune for shape.
  - B. Do not apply pruning paint to wounds.
- 3.7 TREE STABILIZATION
- A. Trunk Stabilization by Upright Staking and Tying: Install trunk stabilization as follows unless otherwise indicated:
    1. Upright Staking and Tying: Stake trees of **2- through 5-inch** caliper. Stake trees of less than **2-inch** caliper only as required to prevent wind tip out. Use a minimum of two stakes of length required to penetrate at least **18 inches** below bottom of backfilled excavation and to extend to the dimension indicated on Drawings above grade. Set vertical stakes and space to avoid penetrating root balls or root masses.
    2. Upright Staking and Tying: Stake trees with two stakes for trees up to **12 feet** high and **2- 1/2 inches** or less in caliper; three stakes for trees less than **14 feet** high and up to **4 inches** in caliper. Space stakes equally around trees.
    3. Support trees with bands of flexible ties at contact points with tree trunk. Allow enough slack to avoid rigid restraint of tree.
    4. Support trees with two strands of tie wire, connected to the brass grommets of tree-tie webbing at contact points with tree trunk. Allow enough slack to avoid rigid restraint of tree.
  - B. Trunk Stabilization by Staking and Guying: Install trunk stabilization as follows unless otherwise indicated on Drawings. Stake and guy trees more than **14 feet** in height and more than **3 inches** in caliper unless otherwise indicated.
    1. Site-Fabricated, Staking-and-Guying Method: Install no fewer than three guys spaced equally around tree.



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



2. Proprietary Palm-Bracing Device: Install palm-bracing system sized and positioned as recommended by manufacturer unless otherwise indicated and according to manufacturer's written instructions.

### 3.8 PLANTING AREA MULCHING

- A. Mulch backfilled surfaces of planting areas and other areas indicated.
  1. Trees and Treelike Shrubs in Turf Areas: Apply organic mulch ring of **3-inch** average thickness, with **12-inch** radius around trunks or stems. Do not place mulch within **6 inches** of trunks or stems.
  2. Organic Mulch in Planting Areas: Apply **3-inch** average thickness of organic mulch extending **12 inches** beyond edge of individual planting pit or trench and over whole surface of planting area, and finish level with adjacent finish grades. Do not place mulch within **3 inches** of trunks or stems.
  3. Mineral Mulch in Planting Areas: Apply **3-inch** average thickness of mineral mulch extending **12 inches** beyond edge of individual planting pit or trench and over whole surface of planting area, and finish level with adjacent finish grades. Do not place mulch within **3 inches** of trunks or stems.

### 3.9 EDGING INSTALLATION

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

### 3.10 INSTALLING SLOW-RELEASE WATERING DEVICE

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

### 3.11 PLANT MAINTENANCE

- A. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, adjusting and repairing tree-stabilization devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings.
- B. Fill in, as necessary, soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.



- C. Apply treatments as required to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use integrated pest management practices when possible to minimize use of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.

### 3.12 REPAIR AND REPLACEMENT

- A. General: Repair or replace existing or new trees and other plants that are damaged by construction operations, in a manner approved by Architect.
  - 1. Submit details of proposed pruning and repairs.
  - 2. Perform repairs of damaged trunks, branches, and roots within 24 hours, if approved.
  - 3. Replace trees and other plants that cannot be repaired and restored to full-growth status, as determined by Architect.

### 3.13 CLEANING AND PROTECTION

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

END OF SECTION 329300



## SECTION 329600 - TRANSPLANTING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes transplanting non-nursery-grown trees by tree spade or digging and boxing.
- B. Related Requirements:
  - 1. Section 015639 "Temporary Tree and Plant Protection" for protecting, trimming, pruning, repairing, and replacing existing trees to remain that interfere with, or are affected by, execution of the Work.
  - 2. Section 329300 "Plants" for new trees from nursery-grown sources.

#### 1.3 DEFINITIONS

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





#### 1.4 PREINSTALLATION MEETINGS

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

#### 1.5 DELIVERY, STORAGE, AND HANDLING

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

#### 1.6 FIELD CONDITIONS

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



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

## 1.7 MAINTENANCE SERVICE

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

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

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

### 2.2 PLANTING MATERIALS

- A. Backfill Soil: Excavated soil mixed with planting soil of suitable moisture content and granular texture for placing and compacting in planting pit around tree, and free of stones, roots, plants, sod, clods, clay lumps, pockets of coarse sand, concrete slurry, concrete layers or chunks, cement, plaster, building debris, and other extraneous materials harmful to plant growth.
  1. Mixture: Well-blended mix of two parts excavated soil to one part planting soil .
  2. Planting Soil: Planting soil organic leaf compost as specified in 329300: Plants

### 2.3 WATERING DEVICES

- A. Slow-Release Watering Device: Standard product manufactured for drip-irrigation of plants and emptying its water contents over a period of 2 to 9 hours; manufactured from UV-light stabilized nylon-reinforced polyethylene sheet, PVC, or HDPE plastic.
  1. See Section 329300: Plants for approved manufacturers



## 2.4 MISCELLANEOUS PRODUCTS

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

## PART 3 - EXECUTION

### 3.1 EXAMINATION

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

### 3.2 PREPARATION

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

### 3.3 PREPARATORY PRUNING

- A. Root Pruning: Perform preparatory root pruning under direction of arborist as far in advance of extracting each tree as the Project Schedule allows.
  - 1. Dig exploratory pits or trench by hand or with air spade around perimeter of tree at indicated root-ball width to determine locations of main lateral roots.
  - 2. Dig trench by hand or with tree spade around perimeter of plant at indicated root-ball width to the depth of the root system. Do not use a backhoe or other equipment that rips, tears, or pulls roots.
  - 3. Root-Ball Width: Minimum **9 inches** of root-ball diameter, or least dimension for non-round root balls, for each **inch** of tree caliper being transplanted or each foot of shrub width.
  - 4. If encountering large, main lateral roots, expose roots beyond excavation limits as required to bend and redirect them without breaking.



5. Use narrow-tine spading forks to comb soil to expose roots with minimal damage to root system.
6. Cut exposed roots manually with sharp pruning instruments; do not break, tear, chop, or slant the cuts. Do not use a backhoe or other equipment that rips, tears, or pulls roots.
7. Do not paint or apply sealants on cut root ends.
8. Backfill trench with excavated soil.

B. Crown Pruning (Tip Pruning):

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

### 3.4 EXCAVATION AND PLANTING EQUIPMENT

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

### 3.5 EXCAVATING PLANTING PITS

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

1. Excavate planting pits or trenches with sides sloping. Trim perimeter of bottom leaving center area of bottom raised slightly to support root ball and assist in drainage away from center. Do not further disturb base. Ensure that root ball will sit on undisturbed base soil. Scarify sides of planting pit smeared or smoothed during excavation.
2. Excavate approximately three times as wide as root ball.
3. Keep excavations covered or otherwise protected until replanting trees.

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

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

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

### 3.6 EXTRACTING TREES & SHRUBS

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

- B. Orientation Marking: Mark the north side of each tree with non-permanent paint before extracting.

- C. Root-Ball Width, Trees: Minimum **10 inches** of root-ball diameter, or least dimension for non-round root balls, for each **inch** of tree caliper being transplanted.



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

### 3.7 TEMPORARY STOCKPILE

- A. If new location of transplanted material is not ready, plants must be stockpiled on site.
- B. Plants should be "Heeled-in" - "Heeling-in" involves covering the root balls with shredded bark, peat moss, or other approved mulching material(s).
  1. Place plants in a trench (not to exceed depth of cap) or group plants together on ground surface.
  2. Fill around all roots and root balls with shredded bark mulch or approved equal.
  3. Water frequently to ensure rootball stays moist until ready for transplant.



### 3.8 PLANTING

- A. Planting Standard: Perform planting according to ANSI A300 (Part 6) unless otherwise indicated.
- B. Before planting, verify that root flare is visible at top of root ball. If root flare is not visible, remove soil in a level manner from the root ball to where the top-most root emerges from the trunk. After soil removal to expose the root flare, verify that root ball still meets size requirements.
- C. Ensure that root flare is visible after planting.
- D. Remove injured roots by cutting cleanly; do not break. Do not paint or apply sealants on cut root ends.
- E. Orientation: Position the tree so that its north side, marked before extracting, is facing north in its new location.
- F. Set tree plumb and in center of planting pit with bottom of root flare **1 inch** above adjacent finish grades.
  - 1. Use specified backfill soil for backfill.
  - 2. If area under the tree was initially dug too deep, add backfill to raise it to the correct level and thoroughly tamp the added soil to prevent settling.
  - 3. After placing some backfill around root ball to stabilize plant, begin backfilling.
  - 4. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
  - 5. Redirect exposed root ends downward in backfill areas where possible. Hand-expose roots as required to bend and redirect them without breaking. If encountered immediately adjacent to location of new construction and redirection is not practical, cut roots approximately **3 inches** back from new construction and as required for root pruning.
  - 6. Place planting tablets in each planting pit when pit is approximately one-half filled; in amounts recommended by arborist. Place tablets beside the root ball about 1 inch (25 mm) from root tips; do not place tablets in bottom of the hole.
  - 7. Continue backfilling process. Water again after placing and tamping final layer of soil.
- G. Planting with Tree Spade: Use the same tree spade for planting as was used to extract and transport the tree. Do not use tree spade for trees larger than the manufacturer's maximum size recommendation for the tree spade being used.
- H. Slopes: When planting on slopes, set the tree so the root flare on the uphill side is flush with the surrounding soil on the slope; the edge of the root ball on the downhill side will be above the surrounding soil. Apply enough soil to cover the downhill side of the root ball.



### 3.9 CROWN PRUNING

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

### 3.10 MULCHING

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

### 3.11 INSTALLING SLOW-RELEASE WATERING DEVICE

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

### 3.12 TREE MAINTENANCE

- A. Perform tree maintenance as recommended by arborist. Maintain arborist observation of transplanting work.
- B. Maintain trees by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, adjusting and repairing tree-stabilization devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings. Treat as required to keep trees free of insects and disease.
- C. Fill areas of soil subsidence with backfill soil. Replenish mulch materials damaged or lost in areas of subsidence.



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

### 3.13 REPAIR AND REPLACEMENT

- A. General: Repair or replace transplanted trees and other plants indicated to remain or be relocated that are damaged by construction operations, in a manner recommended by the arborist and approved by Architect.
  - 1. Submit details of proposed pruning and repairs.
  - 2. Perform repairs of damaged trunks, branches, and roots within 24 hours according to arborist's written instructions.
  - 3. Replace trees and other plants that cannot be repaired and restored to full-growth status, as determined by Architect.
- B. Remove and replace trees that are more than 50 percent dead or in an unhealthy condition before the end of the corrections period or are damaged during construction operations that Architect determines are incapable of restoring to normal growth pattern.
  - 1. Provide new trees of same size as those being replaced for each tree of 4 inches or smaller in caliper size.
  - 2. Species of Replacement Trees: Same species being replaced .

### 3.14 CLEANUP AND PROTECTION

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

### 3.15 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Except for materials indicated to be recycled, remove surplus soil, excess excavated material, waste materials, displaced plants, trash, and debris, and legally dispose of them off Owner's property.





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

END OF SECTION 329600



## SECTION 334200 - STORMWATER CONVEYANCE

### PART 1 - GENERAL

#### 1.1 SUMMARY

##### A. Section Includes:

1. Stormwater drainage piping.
2. Catch basins/area drains.
3. Bedding and cover materials.

##### B. Related Requirements:

1. Section 31200 - Earth Moving.
2. 334611.23 - Stormwater Retention Ponds

#### 1.2 DEFINITIONS

- ##### A. ABS: Acrylonitrile butadiene styrene.

#### 1.3 UNIT PRICE - MEASUREMENT AND PAYMENT

- ##### A. Section 012000 - Price and Payment Procedures: Contract Sum/Price modification procedures.

##### B. Pipe and Fittings:

1. Basis of Measurement: By linear foot .
2. Basis of Payment: Includes excavating, removing soft subsoil, bedding and fill, geotextile fabric, pipe and fittings, accessories, and connecting to building service piping and to municipal sewer.

#### 1.4 REFERENCE STANDARDS

##### A. American Association of State Highway and Transportation Officials:

1. AASHTO M288 - Standard Specification for Geotextile Specification for Highway Applications.
2. AASHTO M294 - Standard Specification for Corrugated Polyethylene Pipe, 300- to 1500-mm (12- to 60-in.) Diameter.



3. AASHTO T 180 - Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg Rammer and a 457-mm Drop.

B. ASTM International:

1. ASTM D2564 - Standard Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems.
2. ASTM D2680 - Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) and Poly(Vinyl Chloride) (PVC) Composite Sewer Piping.
3. ASTM D2729 - Standard Specification for Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
4. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).

1.5 COORDINATION

- A. Coordinate Work of this Section with termination of storm sewer connection outside building, trenching, connection to existing catch basins .

1.6 PREINSTALLATION MEETINGS

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

1.7 SUBMITTALS

- A. Product Data: Submit manufacturer information describing pipe, pipe accessories.
- B. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- C. Manufacturer Instructions: Submit special procedures required to install specified products.
- D. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.
- E. Qualifications Statement:
  1. Submit qualifications for manufacturer.

1.8 CLOSEOUT SUBMITTALS

- A. Section 017000 - Execution and Closeout Requirements: Requirements for submittals.
- B. Project Record Documents: Record actual locations of pipe runs, connections, catch basins, cleanouts, and invert elevations.



- C. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

#### 1.9 QUALITY ASSURANCE

- A. Perform Work according to RIDOT Standard Specifications for Road and Bridge Construction standards Current Edition.

#### 1.10 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years' documented experience.

#### 1.11 DELIVERY, STORAGE, AND HANDLING

- A. Follow Manufacturer requirements for transporting, handling, storing, and protecting products.
- 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. Provide additional protection according to manufacturer instructions.

#### 1.12 EXISTING CONDITIONS

- A. Field Measurements:
  - 1. Verify field measurements prior to fabrication.
  - 2. Indicate field measurements on Shop Drawings.

### PART 2 - PRODUCTS

#### 2.1 STORM DRAINAGE PIPING

- A. PVC Piping:
  - 1. Pipe:



- a. Nominal Diameter: 4 inches.
- b. SCH 40
2. Fittings: PVC.

## 2.2 MATERIALS

### A. Bedding and Cover:

1. Bedding: #2 Crushed Stone
2. Cover: Clean Fill .
3. Soil Backfill from above Pipe to Finish Grade: Loam in Seeded Areas, base material as specified in details under concrete areas .
4. Subsoil: No rocks more than **6 inches** in diameter, frozen earth, or foreign matter.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Section 017000 - Execution and Closeout Requirements: Requirements for installation examination.
- B. Verify that excavation base is ready to receive Work of this Section.
- C. Verify that excavations, dimensions, and elevations are as indicated on Drawings.

### 3.2 PREPARATION

- A. Section 017000 - Execution and Closeout Requirements: Requirements for installation preparation.
- B. Correct over-excavation with coarse aggregate .
- C. Remove large stones and other hard matter that could damage piping or impede consistent backfilling or compaction.

### 3.3 INSTALLATION

#### A. Excavation and Bedding:

1. Excavate trench to **6 inches** below pipe invert, and as specified in Section 312316.13 - Trenching.
2. Hand trim excavation for accurate placement of piping to indicated elevations.



3. Place bedding material at trench bottom.
4. Level materials in continuous layers not exceeding **6 -inch** compacted depth.
5. Maintain optimum moisture content of bedding material to attain required compaction density.
6. Level fill materials in continuous layers not exceeding **6 inches** in depth, and compact to 95 percent maximum density.
7. Place geotextile fabric over compacted bedding.

B. Piping:

1. Place pipe on minimum **6-inch-** deep bed of #2 filter aggregate.
2. Install 3/4" crushed stone at sides and over top of pipe.
3. Install top cover and compact to 95 percent maximum density.
4. Backfilling and Compaction:
  - a. Do not displace or damage pipe while compacting.
5. Connect to existing catch basins , through installed sleeves.
6. Installation Standards: Install Work according to RIDOT Standard Specifications for Road and Bridge Construction standards.

3.4 TOLERANCES

- A. Section 014000 - Quality Requirements: Requirements for tolerances.
- B. Maximum Variation from Indicated Pipe Slope: **1/8 inch in 10 feet.**

3.5 FIELD QUALITY CONTROL

- A. Section 014000 - Quality Requirements: Requirements for inspecting and testing.
- B. Inspection:

1. Request inspection by Architect/Engineer prior to placing aggregate cover over pipe.

3.6 PROTECTION

- A. Section 017000 - Execution and Closeout Requirements: Requirements for protecting finished Work.
- B. Protect pipe and aggregate cover from damage or displacement until backfilling operation is in progress.

END OF SECTION 334200



## SECTION 334611.23 - STORMWATER RETENTION PONDS

### 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. Rain Garden
  - 2. Riverstone Channel & Drain Outfall

#### 1.3 ACTION SUBMITTALS

- A. Product Data:
  - 1. Drainage Stone
  - 2. Loamy sand.
  - 3. Screened high quality compost

### PART 2 - PRODUCTS

#### 2.1 DRAINAGE STONE

- A. River Jacks Riverstone
  - 1. 12-18" dia. Rounded native stone
- B. #4 Gravel
  - 1. Washed crushed stone

#### 2.2 SOIL MATERIALS

- A. Rain Garden soil mix to be 65% Loamy sand blended with 35% screened high quality compost.



### PART 3 - EXECUTION

#### 3.1 EXAMINATION

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

#### 3.2 EARTHWORK

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

#### 3.3 RAIN GARDEN INSTALLATION

- A. Excavate area as shown in plans to 18" below finished grade. Grade bottom of trench excavations to required slope, do not compact subgrade
- B. Fill to Grade: Place satisfactory loamy sand and compost over undisturbed subgrade. Compact to 90%. Fill to finish grade.
- C. Do not fill in area over Riverstone Channel or Drain Outfall

#### 3.4 RIVERSTONE CHANNEL/OUTFALL INSTALLATION

- A. Install after Rain Garden soil mix has been installed.
- B. Dig or rake back any rain garden soil that is in the area to +/- 18" below finished grade
- C. Place setting bed (#4 stone) over subgrade and compact to a depth of 6", +/- 1/2".
- D. Install Riverjack Riverstones, packing tightly together so no voids between stones are greater than 1", stone should project 1-6" above finished grade
- E. Rake Raingarden soil to finished grade at perimeter of Riverstone and compact to 90%

#### 3.5 FIELD QUALITY CONTROL

- A. Tests and Inspections:





1. After installing Rain Garden, observe during next rain event of more than 1/2" and contact architect if there is any standing water after 24 hours.
- B. Prepare test and inspection reports.

END OF SECTION 334611.23



## SECTION 347113 - VEHICLE BARRIERS

### PART 1 - GENERAL

#### 1.1 SUMMARY

##### A. Section Includes:

1. Wood guard rail.
2. Wood posts.
3. Steel Pipe Bollards.
4. Excavating for post bases.

##### B. Related Sections:

1. Section 312316 - Excavation: Excavating for posts.
2. Section 312323 - Fill: Backfilling and compacting fill surrounding posts.

#### 1.2 REFERENCES

##### A. ASTM International:

1. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
2. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

##### B. American Wood-Preservers' Association:

1. AWWPA C14 - Wood for Highway Construction - Preservative Treatment by Pressure Processes.

##### C. Forest Stewardship Council:

1. FSC Guidelines - Forest Stewardship Council Guidelines.

##### D. American Association of State Highway and Transportation Officials

1. AASHTO M168; Standard Specifications for Wood Products



### 1.3 SYSTEM DESCRIPTION

- A. Guard Rail Height: Varies, As indicated on Drawings.
- B. Post Spacing: At intervals not exceeding **8 feet** .
- C. Post Foundation Depth: minimum 42" below finish grade
- D. Post Foundation Diameter: **16 inches**.

### 1.4 SUBMITTALS

- A. Section 013300 - Submittal Procedures: Requirements for submittals.
- B. Shop Drawings: Indicate plan layout, spacing of components, post foundation dimensions, anchorage, and schedule of components.
- C. Product Data: Submit data on rail, posts, accessories, hardware and structural capabilities of rail section.
- D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements .

### 1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with RIDOT Standard Specifications for Road & Bridge Construction

### 1.6 FIELD MEASUREMENTS

- A. Verify field measurements are as indicated on drawings .

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Furnish materials in accordance with RIDOT Standard Specifications for Road & Bridge Construction
- B. Guard Rail: pressure-treated sawn structural lumber, either spruce or fir..
  - 1. Size: 4" x 8" (nominal), length varies



C. Wood Posts: pressure-treated sawn structural lumber, either spruce or fir .

1. Size: 8" x 8" (nominal) x 76" L.

D. Steel Pipe Bollard:

1. 4" O.D. x 78"L Galvanized steel pipe, painted black
2. Fill with concrete
3. 4" D Galvanized steel plate, welded to top of pipe and painted black.

## 2.2 ACCESSORIES

A. Hardware: Steel, bolts, nuts and washers to suit rail profile.

## 2.3 FINISHES

A. Galvanizing for Nuts, Bolts and Washers: ASTM A153/A153M, 2.0 oz/sq ft coating.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Section 013000 - Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify location of underground utilities and adjust location of posts to avoid damaging utilities.

### 3.2 INSTALLATION

A. Wooden Guardrail

1. Set posts plumb in post-holes to correct elevations, properly spaced and to line and grade as indicated on Drawings.
2. Pack processed gravel in around posts to within 6" of finished grade to stabilize
3. Set posts plumb in post-holes to correct elevations, properly spaced and to line and grade as indicated on Drawings.

B. Steel Pipe Bollard

1. Excavate 42" x 16" D hole
2. Install pipe to be plumb and level then backfill with 3000 psi concrete



### 3.3 ERECTION TOLERANCES

- A. Section 014000 - Quality Requirements: Tolerances.
- B. Posts - Maximum Variation From Plumb: **1/8 inch.**
- C. Rail - Maximum Offset From Indicated Position: **1 inch.**
- D. Rail - Maximum Variation From Indicated Height: **1/2 inch.**

END OF SECTION 347113

# WOONASQUATUCKET ADVENTURE PARK PHASE II

GLENBRIDGE AVENUE & BARBARA STREET  
PLAT 113 LOTS 261, 305, 419, 429, 440  
PROVIDENCE, RHODE ISLAND

ISSUED FOR BID

CLIENT:  
PROVIDENCE PARKS  
1000 ELMWOOD AVENUE  
PROVIDENCE, RI 02909

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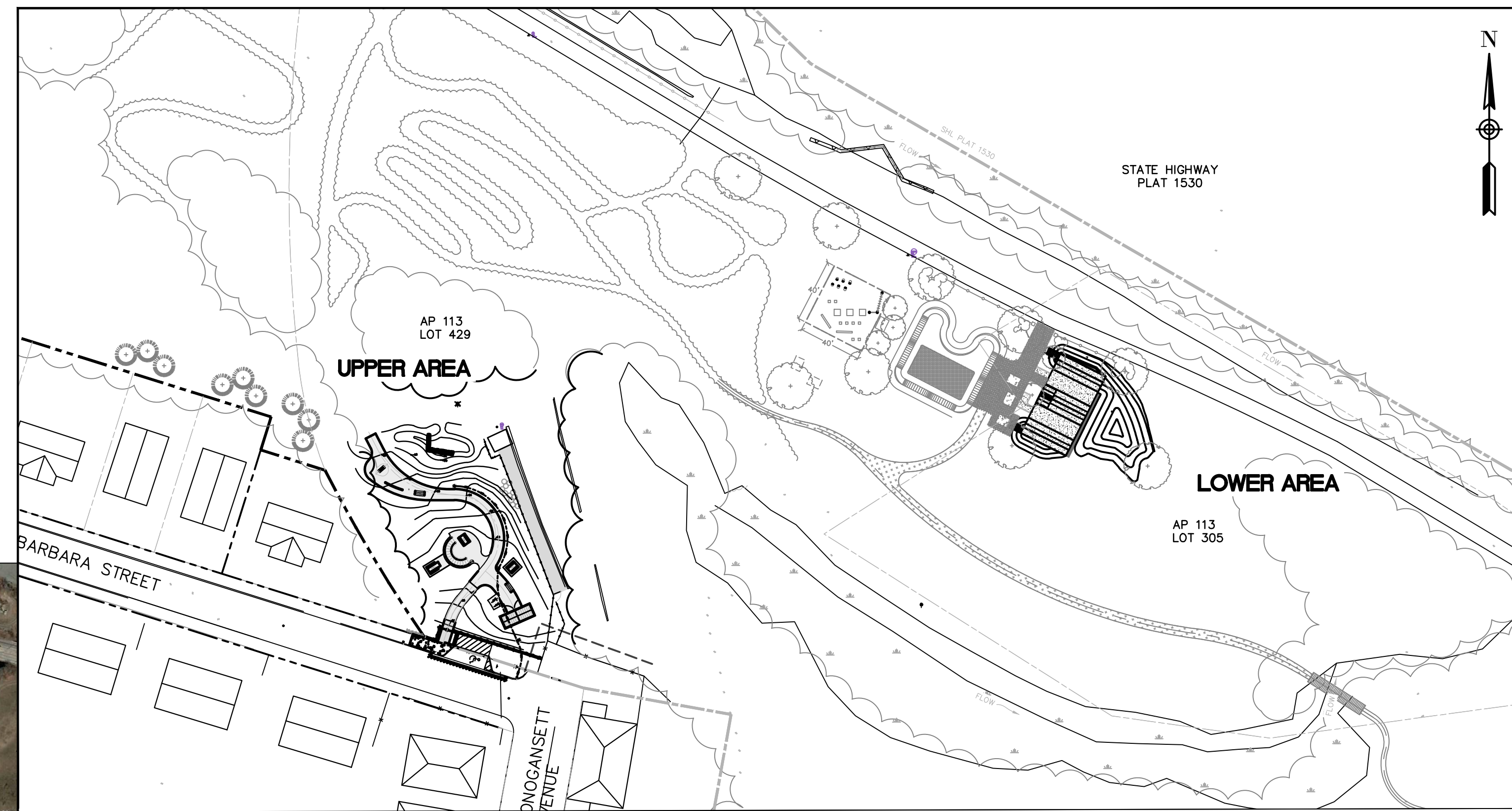
HONORABLE MAYOR BRETT P. SMILEY  
SUPERINTENDENT WENDY NILSSON  
COUNCILWOMAN ANA VARGAS

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S-900	PERSPECTIVE	05/11/2023
S-901	EXPLODED ISOMETRIC	05/11/2023

LANDSCAPE PLANS (BY IRONWOOD DESIGNS, INC.)		LATEST ISSUE
L1.0	LANDSCAPE PREPARATION PLAN	05/11/2023
L2.0	PLAN ENLARGEMENT A	05/11/2023
L2.1	PLAN ENLARGEMENT B	05/11/2023
L3.0	LANDSCAPE DETAILS	05/11/2023
L3.1	LANDSCAPE DETAILS	05/11/2023
L3.2	LANDSCAPE DETAILS	05/11/2023
L3.3	LANDSCAPE DETAILS	05/11/2023
L3.4	LANDSCAPE NOTES	05/11/2023



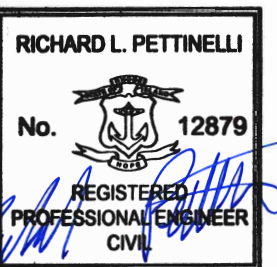
**LOCATION MAP**  
SCALE: 1"=500'



**OVERALL SITE PLAN AND LOCATION MAP**  
SCALE: 1"=60'

**PROPERTY OWNERS**

PLAT - LOT	PROPERTY ADDRESS	PROPERTY OWNER NAME	MAILING ADDRESS
113 - 305	59 PONAGANSETT AVENUE	CITY OF PROVIDENCE	25 DORRANCE STREET, PROVIDENCE, RI 02903
113 - 429	55 PONAGANSETT AVENUE	CITY OF PROVIDENCE	25 DORRANCE STREET, PROVIDENCE, RI 02903
113 - 419	108 GLENBRIDGE AVENUE	PROVIDENCE TURNERS	116 GLENBRIDGE AVENUE, PROVIDENCE, RI 02909
113 - 261	114 GLENBRIDGE AVENUE	PROVIDENCE TURNERS	116 GLENBRIDGE AVENUE, PROVIDENCE, RI 02909



SEAL:

REVISION	DATE	DESCRIPTION

CLIENT:

**PROVIDENCE PARKS DEPARTMENT**  
1000 ELMWOOD AVENUE  
PROVIDENCE, RI 02907

PROJECT:

**WOONASQUATUCKET ADVENTURE PARK PHASE II**  
GLENBRIDGE AVENUE  
PROVIDENCE, RHODE ISLAND

TITLE:

**COVER**

ISSUED FOR: BID

DATE: MAY 11, 2023

SCALE: N/A

DRAWN BY: AJP

CHECKED BY: RLP

PROJECT NO: 365220361

**LEGEND**

	EXIST	PROP		EXIST	PROP
TOP/BOTTOM CURB ELEVATION			SURVEYED PROPERTY LINE (PL)		
SPOT GRADE w/LEADER			ASSESSOR'S MAP PROP. LINE		
SPOT GRADE			RIGHT-OF-WAY/PL EASEMENT		
BORING LOCATION			BUILDING SETBACK		
TEST PIT LOCATION			50' PERIMETER WETLAND		
MONITORING WELL			100' RIVERBANK WETLAND		
BENCH MARK			200' RIVERBANK WETLAND		
DRAIN MANHOLE			ZONING LINE		
CATCH BASIN			TOWN LINE		
DOUBLE CATCH BASIN			STATE LINE		
GUTTER INLET			GRAVEL ROAD		
TRENCH DRAIN			EDGE OF PAVEMENT		
HEADWALL			BITUMINOUS CURB		
FLARED END SECTION			CAPE COD BERM		
DRAINAGE LINE			PRECAST CONC. CURB		
OVERFLOW DRAIN			VERT. GRAN. CURB		
ROOF DRAIN			SLOPED GRAN. EDGING		
OVERHEAD WIRE			LIMIT OF CURB TYPE		
WATER LINE			TREE LINE		
FIRE PROTECTION LINE			MEADOW GRASS LINE		
GAS LINE			MEADOW SHRUB LINE		
UNDERGROUND ELECTRIC			SOIL CAP LIMITS		
UNDERGROUND TELEPHONE			CRUSHED STONE		
FIRE ALARM			EROSION CONTROL FABRIC		
FIRE & POLICE CABLE			SAWCUT		
CABLE TV			MATCHLINE		
PLUG/STUB			SOLID WHITE LINE		
GREASE TRAP			SOLID YELLOW LINE		
CONTROL STRUCTURE			BROKEN WHITE LINE		
SEWER MANHOLE			BROKEN YELLOW LINE		
SEWER LINE			SOLID WHITE CHANNELIZING LINE		
WATER GATE			SOLID YELLOW CHANNELIZING LINE		
TAPPING SLEEVE, VALVE, & BOX			DOUBLE YELLOW LINE		
RISER			STOP LINE		
PRESSURE REDUCER			STEEL GUARD RAIL		
SIAMASE CONNECTION			WOOD GUARD RAIL		
FIRE HYDRANT			PATH		
WATER METER			TREE LINE		
POST INDICATOR VALVE			CHAIN LINK FENCE		
WELL			STONE WALL		
GAS GATE			RETAINING WALL		
GAS METER			HAY BALES		
ELECTRIC MANHOLE			SILT FENCE		
ELECTRIC BOX			STRAW WATTLE		
ELECTRIC METER			LIMIT OF DISTURBANCE		
LIGHT POLE			MINOR CONTOUR		
FLOOD LIGHT			MAJOR CONTOUR		
SINGLE LUMINAIRE			TOP OF SLOPE		
DOUBLE LUMINAIRE			TOE OF SLOPE		
TRIPLE LUMINAIRE			BUILDING		
QUAD LUMINAIRE			BUILDING ENTRANCE		
WALL PACK			LOADING DOCK		
TELEPHONE MANHOLE			BOLLARD		
TRAFFIC SIGNAL			DUMPSTER PAD		
SIGNAL BOX			SIGN		
FIRE ALARM CONTROL PANEL			DOUBLE SIGN		
FIRE ALARM BOX			PARKING METER		
TRANSFORMER PAD			PARKING COUNT		
MANHOLE			COMPACT PARKING STALLS		
UTILITY POLE			CROSSWALK		
GUY POLE			CEMENT CONC. PAVEMENT		
HAND HOLE			RIPRAP STONE		
PULL BOX			TRAIL REINFORCEMENT		
			ADA RAMP		
			ADA PARKING		
			VAN-ACCESSIBLE ADA PARKING		

**ABBREVIATIONS**

ABANDON	ABAN	MAXIMUM	MAX
ADJUST	ADJ	MINIMUM	MIN
AMERICAN SOCIETY FOR TESTING & MATERIALS	ASTM	NOT IN CONTRACT	NIC
AMERICANS WITH DISABILITIES ACT	ADA	NOT TO SCALE	NTS
APPROXIMATE	APPROX	ON CENTER	OC
ASPHALT COATED CORRUGATED METAL PIPE	ACCM	ONSITE WASTEWATER TREATMENT SYSTEM	OWTS
BITUMINOUS CURB	BC	PAVED WATER WAY	PWW
BOTTOM OF SLOPE	BOS	POLYVINYLCHLORIDE PIPE	PVC
CAPE COD BERM	CCV	PRECAST CONCRETE CURB	PCC
CAST IRON PIPE	CIP	PROPOSED	PROP
CHANGE IN TYPE	CIT	RADIUS	R
COLUMN	COL	REINFORCED CONCRETE PIPE	RCP
CONDUIT	COND	REMODEL	REMOD
CORRUGATED ALUMINUM PIPE	CAP	REMOVE	REM
CORRUGATED POLYETHYLENE PIPE	CPP	REMOVE AND DISPOSE	R&D
DUCTILE IRON PIPE	DIP	REMOVE AND RESET	R&R
ELEVATION	ELEV	REMOVE AND STORE	R&S
EXISTING	EXIST	RETAIN	RET
FOUNDATION	FDN	SLOPED GRANITE EDGING	SGE
FRAME AND COVER	F&C	TAPPING SLEEVE, VALVE AND BOX	TSV&B
FRAME AND GRATE	F&G	TOP OF SLOPE	TOS
GALVANIZED	GALV	TRANSITION	TRANS
GRANITE CURB	GC	TYPICAL	TYP
HIGH DENSITY POLYETHYLENE	HDPE	UTILITY POLE	UP
HYDRANT	HYD	VERTICAL GRANITE CURB	VGC
INVERT ELEVATION	INV	VITRIFIED CLAY PIPE	VCP
LANDSCAPE AREA	LA	WATER GATE	WG

**GENERAL NOTES**

- THE PROJECT SITE CONSISTS OF A PREVIOUSLY CAPPED HAZARDOUS WASTE SITE, AS SHOWN ON THE PROJECT DRAWINGS. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS, INCLUDING, BUT NOT LIMITED TO, THE ENVIRONMENTAL LAND USE RESTRICTION FOR THE SITE, AND THE RIDEM OFFICE OF WASTE MANAGEMENT.
- THESE PLANS AND THEIR CORRESPONDING ELECTRONIC DOCUMENTS, INCLUDING CAD FILES FOR THE PROJECT, ARE INSTRUMENTS OF PROFESSIONAL SERVICE AND SHALL NOT BE USED IN WHOLE OR IN PART FOR ANY OTHER PURPOSE THAN THE DEVELOPMENT OF THIS PROJECT WITHOUT THE EXPRESSED, WRITTEN CONSENT OF WSP USA INC. ANY UNAUTHORIZED USE, RE-USE, ALTERATION, OR MODIFICATION OF THIS DATA SHALL BE AT THE USER'S RISK WITH NO LIABILITY ON THE PART OF WSP USA INC.
- UPON AWARD OF THE CONTRACT AND PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND BONDS AND PAYING ALL STATE AND LOCAL FEES RELATING TO THE WORK SHOWN ON THESE DRAWINGS, THE CONSTRUCTION SPECIFICATIONS, AND CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL NOTIFY DIG-SAFE AT LEAST 72 BUSINESS HOURS PRIOR TO INITIATING ANY EXCAVATION WORK.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS. WHERE SITE SPECIFICATIONS ARE NOT PROVIDED, THE CONTRACTOR SHALL ADHERE TO LOCAL MUNICIPAL STANDARDS OR THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, AS APPLICABLE. WORK WITHIN LOCAL RIGHTS-OF-WAY SHALL ADHERE TO LOCAL MUNICIPAL STANDARDS; WORK WITHIN STATE RIGHTS-OF-WAY SHALL ADHERE TO STATE HIGHWAY STANDARDS. WHERE A DISCREPANCY EXISTS, THE MORE RESTRICTIVE STANDARD SHALL APPLY.
- REFERENCE MADE TO "STATE HIGHWAY STANDARDS," "STATE STANDARD SPECIFICATIONS," "STANDARD SPECIFICATIONS," OR "RIDOT STANDARDS" SHALL MEAN AND BE DEFINED AS THE "RHODE ISLAND DEPARTMENT OF TRANSPORTATION - STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION."
- ANY WORK NOT MEETING THE APPROVED STANDARDS SHALL BE REMOVED IMMEDIATELY AND REPLACED BY THE CONTRACTOR AT NO COST TO THE OWNER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SITE SECURITY AND JOB SAFETY AND SHALL CONFORM TO THE RULES AND REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND PROTECTION OF PEDESTRIAN AND VEHICULAR TRAFFIC INCLUDING ANY REQUIRED POLICE PROTECTION. ANY REQUIRED TEMPORARY CONSTRUCTION SIGNS, BARRICADES AND LANE CLOSURES SHALL BE IN CONFORMANCE WITH THE LATEST "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD).
- THE CONTRACTOR SHALL NOT OBSTRUCT PUBLIC ROADWAYS, SIDEWALKS, OR FIRE HYDRANTS WITHOUT FIRST OBTAINING THE NECESSARY PERMITS TO DO SO.
- ACCESSIBLE ROUTES, PARKING SPACES, SIDEWALKS, AND RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FEDERAL "AMERICANS WITH DISABILITIES ACT (ADA)" AND LOCAL AND STATE STANDARDS. WHERE A DISCREPANCY EXISTS, THE MORE RESTRICTIVE STANDARD SHALL APPLY.
- THE LIMITS-OF-WORK (A.K.A. "LIMIT OF DISTURBANCE") SHALL BE AS SHOWN ON THESE PLANS. AREAS DISTURBED BEYOND THESE DEFINED LIMITS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE. LANDSCAPE AREAS SHALL BE RESTORED WITH 6 INCHES OF LOAM AND SEED.
- UNLESS OTHERWISE NOTED ON THE PLANS, ALL UNPAVED/ LANDSCAPE AREAS SHALL RECEIVE SIX (6) INCHES OF LOAM AND SEED WITHIN THE LIMITS OF WORK SHOWN ON THESE PLANS. LOAM SHALL BE EVENLY SPREAD, SMOOTHED, AND COMPACTED PRIOR TO SEEDING.
- PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR SHALL VERIFY EXISTING PAVEMENT ELEVATIONS AT THEIR PROPOSED INTERFACE WITH PROPOSED PAVEMENTS TO ENSURE PROPER TRANSITIONS BETWEEN EXISTING AND PROPOSED FACILITIES.
- HORIZONTAL AND VERTICAL DATUMS ARE PROVIDED ON THE EXISTING CONDITIONS PLANS.
- THE SITE OF THE PROPOSED WOONASQUATUCKET ADVENTURE PARK HAS BEEN FULLY REMEDIATED AS A BROWNFIELDS SITE IN 2010. THE SITE WAS CAPPED IN 2006 AND 2010. THIS CAP INCLUDED 4" OF TOPSOIL, 8" MINIMUM OF CLEAN FILL, AND NON-WOVEN GEOTEXTILE ALL OVER EXISTING GRADE, AS NOTED ON THE APPENDED EA PLANS. ALL SOIL DISTURBANCES WITHIN THE IDENTIFIED CAP AREA SHALL BE RE-CAPPED IN ACCORDANCE WITH DETAILS NOTED IN THIS PLANSET AND/OR REQUIREMENTS SPECIFIED IN EA'S PLANS AS NOTED.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LOCAL AND STATE APPROVALS REQUIRED FOR THE PROJECT. REQUIRED PERMITS/APPROVALS FOR THE CONSTRUCTION INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:
  - CITY OF PROVIDENCE DPW APPROVAL
  - RHODE ISLAND DEPARTMENT OF TRANSPORTATION PHYSICAL ALTERATION PERMIT
  - RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
    - FRESHWATER WETLANDS INSIGNIFICANT ALTERATION PERMIT NO. XX-XXXX (TBD).
    - RHODE ISLAND POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT NO. RIR101712.
    - OFFICE OF WASTE MANAGEMENT PERMITTING
- ALL TRAFFIC CONTROL SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES 2009, INCLUDING ALL REVISIONS.

**GENERAL UTILITY NOTES:**

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES AND WORK TRADES ASSOCIATED WITH THE WORK SHOWN ON THESE PLANS.

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PAYING FOR A STREET OPENING PERMIT FROM THE CITY OF PROVIDENCE.
- THE CONTRACTOR IS RESPONSIBLE FOR MEETING THE REQUIREMENTS OF THE STREET OPENING PERMIT AND ALL CITY ORDINANCES.
- THE CONTRACTOR SHALL KEEP ALL LOCAL AGENCIES INFORMED OF SCHEDULE AS NECESSARY.
- PRIVATE UTILITIES
  - SERVICES SHALL BE APPROVED BY AND CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS AND REQUIREMENTS OF PRIVATE UTILITY SERVICE PROVIDERS (GAS, TELEPHONE, ELECTRIC, FIRE ALARM, CABLE, FIOS, ETC.)
  - CONTRACTOR SHALL FURNISH EXCAVATION, INSTALLATION, AND BACKFILL OF ALL ELECTRIC WORK. THE CONTRACTOR SHALL ALSO FURNISH AND INSTALL CONCRETE ENCASEMENT FOR DUCT BANKS, IF REQUIRED BY THE ELECTRIC COMPANY. PULLING OF ELECTRICAL CONDUIT SHALL BE BY THE ELECTRIC COMPANY.
- EXISTING UTILITIES ARE SHOWN IN THEIR APPROXIMATE LOCATION BASED ON BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE LOCATION, SIZE, MATERIAL(S), AND ELEVATION OF ALL EXISTING UTILITIES WITHIN THE LIMIT OF WORK PRIOR TO ORDERING OR INSTALLING THESE MATERIALS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES OR UTILITY CONFLICTS PRIOR TO CONSTRUCTION.
- WHERE AN EXISTING UTILITY IS FOUND TO BE IN CONFLICT WITH THE PROPOSED WORK, OR WHERE EXISTING CONDITIONS DIFFER FROM THE INFORMATION SHOWN ON THESE PLANS, SUCH THAT THE WORK CAN NOT BE COMPLETED AS INTENDED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY AND PROVIDE THE ENGINEER WITH THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY IN CONFLICT. THE CONTRACTOR SHALL NOT CONTINUE WORK IN THIS AREA UNTIL THE APPROPRIATE REMEDIAL ACTION IS AGREED UPON BY THE OWNER AND ENGINEER.
- THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ANY DAMAGE TO OVERHEAD AND/OR UNDERGROUND UTILITIES, WHETHER OR NOT SHOWN ON THESE PLANS THROUGHOUT WORK ON THIS PROJECT.
- STORM DRAIN PIPING SHALL BE CONSTRUCTED OF SDR 35 POLYVINYL CHLORIDE (PVC) UNLESS OTHERWISE NOTED ON THE PLANS;
- ALL STRUCTURES UNDER PAVED AREAS SHALL BE DESIGNED TO MEET HS-20 TRUCK LOAD.

**DEMOLITION**

- WITHIN THE LIMIT OF WORK/DISTURBANCE IN THE UPPER PARK AREA, THE CONTRACTOR SHALL CLEAR AND GRUB ALL EXISTING VEGETATION AND STOCKPILE AND SCREEN TOPSOIL FOR RE-USE IN LANDSCAPE AREAS. WITHIN THE LIMIT OF WORK/DISTURBANCE IN THE LOWER PARK AREA, THE CONTRACTOR SHALL REMOVE AND RELOCATE PLANTINGS ONLY AS SHOWN ON LANDSCAPE PLANS. THE CONTRACTOR SHALL ALSO REMOVE AND DISPOSE OF EXISTING MANMADE FEATURES, INCLUDING BUT NOT LIMITED TO BUILDINGS, STRUCTURES, PAVEMENTS, SLABS, CURBING, WALLS, FENCES, UTILITIES (BOTH OVERHEAD AND UNDERGROUND), SIGNS, ETC. WITHIN PROPOSED WORK AREAS, ONLY AS DIRECTED ON PLANS. THE EXISTING SOIL CAP SHALL ONLY BE DISTURBED AS DIRECTED WITHIN SOIL MANAGEMENT PLAN.
- ALL WETLAND DISTURBANCES ASSOCIATED WITH CONSTRUCTION ACTIVITIES SHALL BE RESTORED.
- THE CONTRACTOR SHALL DISPOSE OF ALL EXCESS MATERIALS OFF-SITE IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS.
- THE EXTENT OF DEMOLITION DEPICTED ON THESE PLANS IS INTENDED TO AID THE CONTRACTOR IN BIDDING THE PROJECT AND IS NOT NECESSARILY INTENDED TO DEPICT EACH AND EVERY ELEMENT OF DEMOLITION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE FULL EXTENTS OF THE DEMOLITION WORK PRIOR TO CONTRACT AWARD AND SHALL NOT BE COMPENSATED FOR UNFORESEEN CONDITIONS ONCE THE WORK HAS COMMENCED.
- UNLESS OTHERWISE SPECIFICALLY PROVIDED ON THESE PLANS, THE ENGINEER HAS NOT PREPARED PLANS FOR THE DISCOVERY, REMOVAL, ABATEMENT, OR DISPOSAL OF ANY HAZARDOUS OR TOXIC MATERIALS FOUND DURING CONSTRUCTION.

**100-YEAR FLOOD PLAIN IMPACT AVOIDANCE**

- THERE IS NO ANTICIPATED INCREASE IN THE 100-YEAR FLOOD ELEVATIONS RESULTANT FROM THE PROPOSED PROJECT, AS DESIGNED.

**EXISTING CONDITIONS**

- EXISTING CONDITIONS ARE COMPILED FROM THE FOLLOWING SOURCES:
- FIELD SURVEY AND WETLANDS FLAGGING BY DIPRETE ENGINEERING, SUPPLEMENTED BY RIGIS LIDAR ELEVATION DATA.
  - FEMA FLOOD MAP 44007C0304J, EFFECTIVE 10/02/2015.
  - CITY OF PROVIDENCE ASSESSORS MAP 113.
  - HANDHELD GPS MAPPING OF EXISTING TRAILS COMPLETED BY CITY OF PROVIDENCE PARKS DEPARTMENT.
  - SITE CAP LIMITS TAKEN FROM RECORD PLANS BY EA, INC.
  - SUPPLEMENTAL INFORMATION PROVIDED THROUGH FIELD VISITS BY WSP.

**SITE SPECIFIC DATA**

- TOTAL SITE AREA = 11.74± ACRES
- TOTAL AREA OF DISTURBANCE = 0.48± ACRES
- NATURAL HERITAGE AREA (NHA) IMPACT - N/A
- THREATENED SPECIES OR HABITAT IMPACT - N/A
- WATERSHED = TRIBUTARY TO WOONASQUATUCKET RIVER: I.D. R10002007R-10D

**EROSION CONTROLS/CONSTRUCTION SEQUENCING**

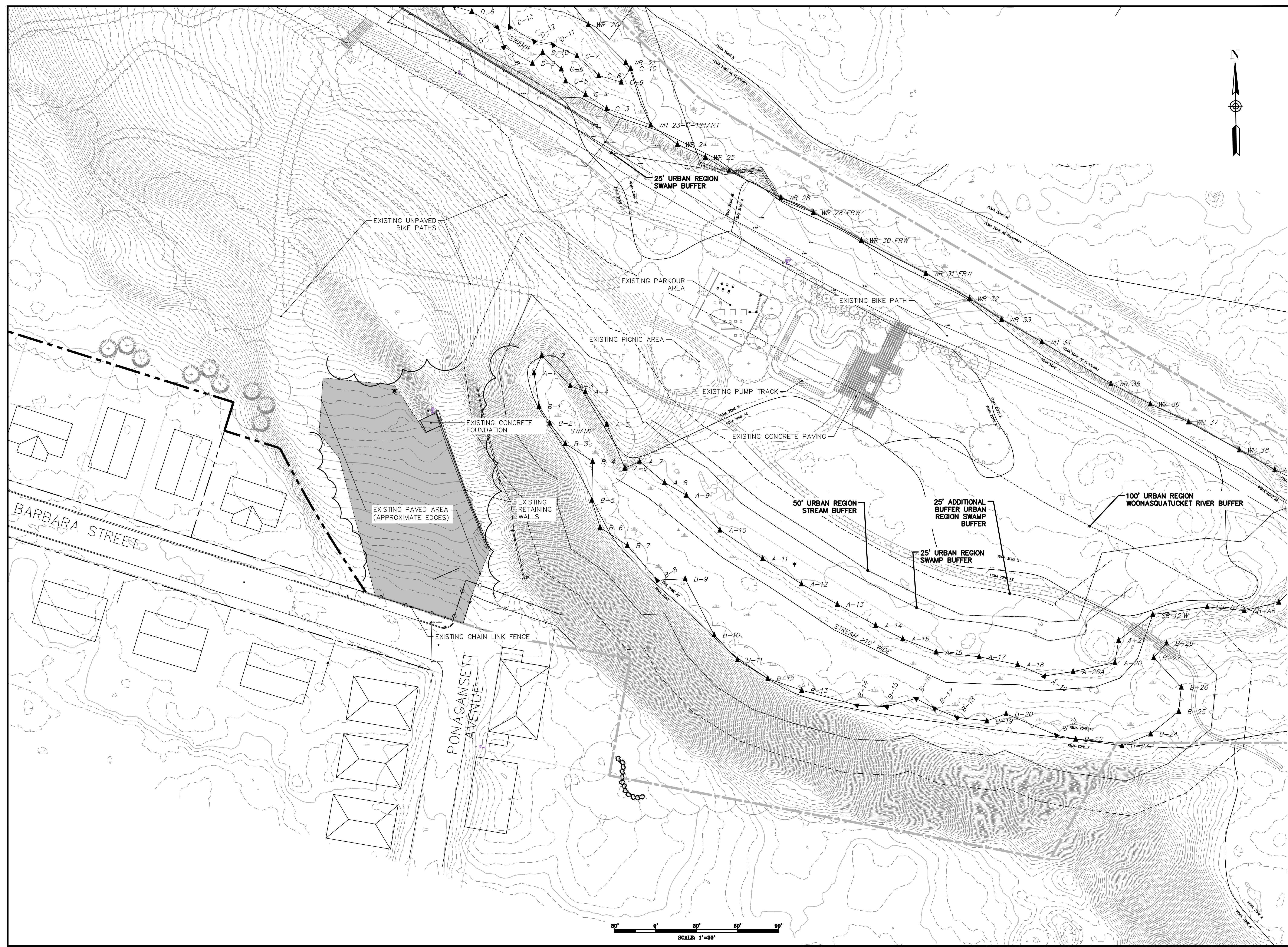
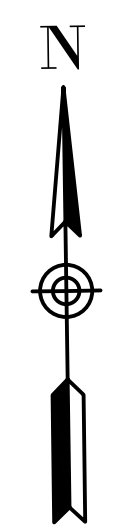
- PRIOR TO THE START OF CONSTRUCTION OF ANY EARTHWORK ACTIVITIES, THE CONTRACTOR SHALL NOTIFY ALL APPLICABLE AGENCIES AND INSTALL THE EROSION CONTROL MEASURES SHOWN ON THESE PLANS IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL PERMITS PERTAINING TO THIS PROJECT.
- THE CONTRACTOR SHALL KEEP A COPY OF THE "SOIL EROSION AND SEDIMENTATION CONTROL PLAN" (SESC) AND THE APPROVED PLAN SET AT THE CONSTRUCTION SITE AT ALL TIMES.
- THE CONTRACTOR SHALL INSTALL ALL EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES SHOWN ON THE PLAN SET IN ACCORDANCE WITH THE SESC AND THE MOST RECENT EDITION OF THE "RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK."
- THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN AND/OR UPGRADE THESE MEASURES, AS NECESSARY, THROUGHOUT CONSTRUCTION, TO MEET THE REQUIREMENTS OF ALL RELATED PERMITS FOR THE PROJECT.
- THE CONTRACTOR SHALL PREPARE AND MAINTAIN A RED-LINED COPY OF THE SESC PLAN SHOWING INTENDED AREAS FOR STAGING, STOCKPILING, WASHOUT, SOLID WASTE CONTAINMENT, AND TEMPORARY SEDIMENTATION CONTROL AREAS. ALL SUCH AREAS SHALL BE LOCATED OUTSIDE OF REGULATED WETLAND AREAS OR AREAS INTENDED FOR INFILTRATION PRACTICES.
- EROSION CONTROL DEVICES
  - AT LEAST ONE STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED FOR ACCESS TO THE PROJECT BY CONSTRUCTION VEHICLES. THE CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED BEFORE CONSTRUCTION VEHICLES ARE ALLOWED TO ENTER THE CONSTRUCTION SITE. ADDITIONAL ENTRANCES/EXITS SHALL BE INSTALLED, IF MORE THAN ONE ACCESS POINT IS ANTICIPATED BY THE CONTRACTOR. A WASH OUT PAD MAY ALSO BE INSTALLED TO WASH CONSTRUCTION VEHICLES EXITING THE SITE.
  - ROADS ADJACENT TO THE CONSTRUCTION SITE SHALL BE CLEAN AT THE END OF EACH WORK DAY.
  - TEMPORARY SEDIMENT BASINS MAY BE EXCAVATED OR BERMED/HAYBALED AND SHALL BE SIZED IN ACCORDANCE WITH THE "RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL" AND THE "RHODE ISLAND SOIL EROSION AND SEDIMENTATION CONTROL HANDBOOK." THE DISCHARGE LOCATION FROM THESE BASINS SHALL BE STABILIZED TO PREVENT EROSION.
  - STRAW WATTLE AND SILT SACKS SHALL BE INSTALLED AT ALL DOWN-GRADE GRADIENT BASINS WITHIN THE LIMIT OF WORK TO CONTROL EROSION AND SEDIMENTATION AND TO PROTECT OFF-SITE AREAS. THESE DEVICES SHALL BE INSTALLED AS SHOWN ON THE E&S CONTROL PLAN PRIOR TO INITIATION OF MAJOR SITE WORK ACTIVITIES AND SHALL BE MAINTAINED/REPAIRED UNTIL FINAL STABILIZATION OF ALL DISTURBED AREAS.
  - SILT FENCE SHALL BE INSTALLED AROUND ALL EARTH STOCKPILES. STOCKPILES SHALL BE STABILIZED WITH TEMPORARY SEED ACCORDING TO NOTE 11 BELOW. IF TEMPORARY SEED IS NOT FEASIBLE OR NOT PRACTICAL, STOCKPILES SHALL BE COVERED WITH POLYETHYLENE SHEETING OR SIMILAR PRODUCT AT THE END OF EACH DAY TO MINIMIZE DUST.
  - ALL OTHER EROSION CONTROL DEVICES SHOWN ON THESE PLANS SHALL BE IN ACCORDANCE WITH "RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL" AND THE "RHODE ISLAND SOIL EROSION AND SEDIMENTATION CONTROL HANDBOOK."
  - THE EROSION CONTROL MEASURES SHOWN ON THESE PLANS ARE INTENDED TO BE THE MINIMUM NECESSARY AT THE START OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN AND SUPPLEMENT THESE EROSION CONTROLS, AS NECESSARY THROUGHOUT CONSTRUCTION, TO PREVENT DAMAGE TO WETLANDS AND/OR SURROUNDING PROPERTIES.
  - THE CONTRACTOR SHALL PREVENT DUST, DEBRIS, AND SEDIMENTS FROM LEAVING THE SITE DURING CONSTRUCTION AND SHALL BE RESPONSIBLE TO REPAIR, CLEAN UP, AND TAKE OTHER CORRECTIVE ACTION IMMEDIATELY OR NO LATER THAN 24 HOURS AFTER ANY ISSUE ARISES.
  - THE CONTRACTOR SHALL CONTROL CONSTRUCTION STORMWATER RUNOFF IN SUCH A MANNER AS TO PREVENT DAMAGE TO DOWN-GRADE PROPERTIES; ANY PROPERTIES SO DAMAGED SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
  - THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL DEVICES ON A WEEKLY BASIS AND WITHIN 12 HOURS AFTER A RAINFALL EVENT. THE CONTRACTOR SHALL IMMEDIATELY REPAIR DAMAGED DEVICES AND SHALL REMOVE ACCUMULATED SEDIMENTS IN ACCORDANCE WITH LOCAL REQUIREMENTS AND THE RIPDES PERMIT, WHEN APPLICABLE. ACCUMULATED SEDIMENTS SHALL BE REMOVED FROM THE SITE OR PLACED AWAY FROM WETLANDS AND CLOSED DRAINAGE SYSTEMS.
  - THE CONTRACTOR SHALL MAKE EVERY EFFORT TO PERFORM EARTHWORK IN PHASES THAT ALLOW FOR STABILIZATION OF THESE AREAS IN A RELATIVELY SHORT TIME PERIOD AND TO DISCOURAGE EROSION AND SEDIMENTATION. ANY EXPOSED SOILS INTENDED TO REMAIN FOR MORE THAN 14 DAYS SHALL BE STABILIZED WITH MULCH, OR TEMPORARY SEED AND WATERED TO ENCOURAGE VEGETATION.
  - THE CONTRACTOR SHALL INSTALL PERMANENT SEEDING BETWEEN APRIL 15TH AND JUNE 15TH AND/OR AUGUST 15TH TO OCTOBER 15TH.
  - THE CONTRACTOR SHALL APPLY PERMANENT SOIL STABILIZATION MEASURES TO ALL GRADED AREAS WITHIN SEVEN (7) DAYS OF ESTABLISHING FINAL GRADE.
  - THE CONTRACTOR SHALL PERFORM A FINAL INSPECTION OF ALL EXISTING CATCH BASINS, DRAINAGE PIPING, AND ASSOCIATED DRAINAGE STRUCTURES WITHIN THE PROJECT LIMITS TO ENSURE THAT ALL SEDIMENTS HAVE BEEN REMOVED BEFORE WORK IS DEEMED COMPLETE.
  - THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL E&S MEASURES ONLY AFTER FINAL PAVEMENT IS PLACED AND VEGETATION IN LANDSCAPE AREAS IS WELL ESTABLISHED.
  - NO SNOW SHALL BE PLOWED INTO WETLAND FEATURES OR STORMWATER MANAGEMENT AREAS. ALL EXCESS SNOW MUST BE STOCKPILED IN THE EMPLOYEE PARKING LOT OR REMOVED FROM THE SITE AS NECESSARY.



REVISION

REVISION	DATE	DESCRIPTION

CLIENT:  
**PROVIDENCE PARKS DEPARTMENT**



SEAL:

REVISION	DATE	DESCRIPTION

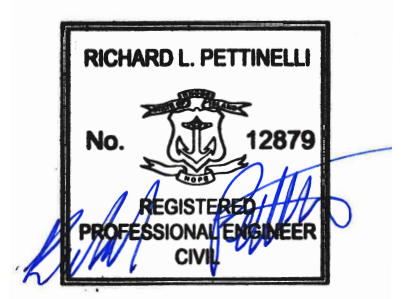
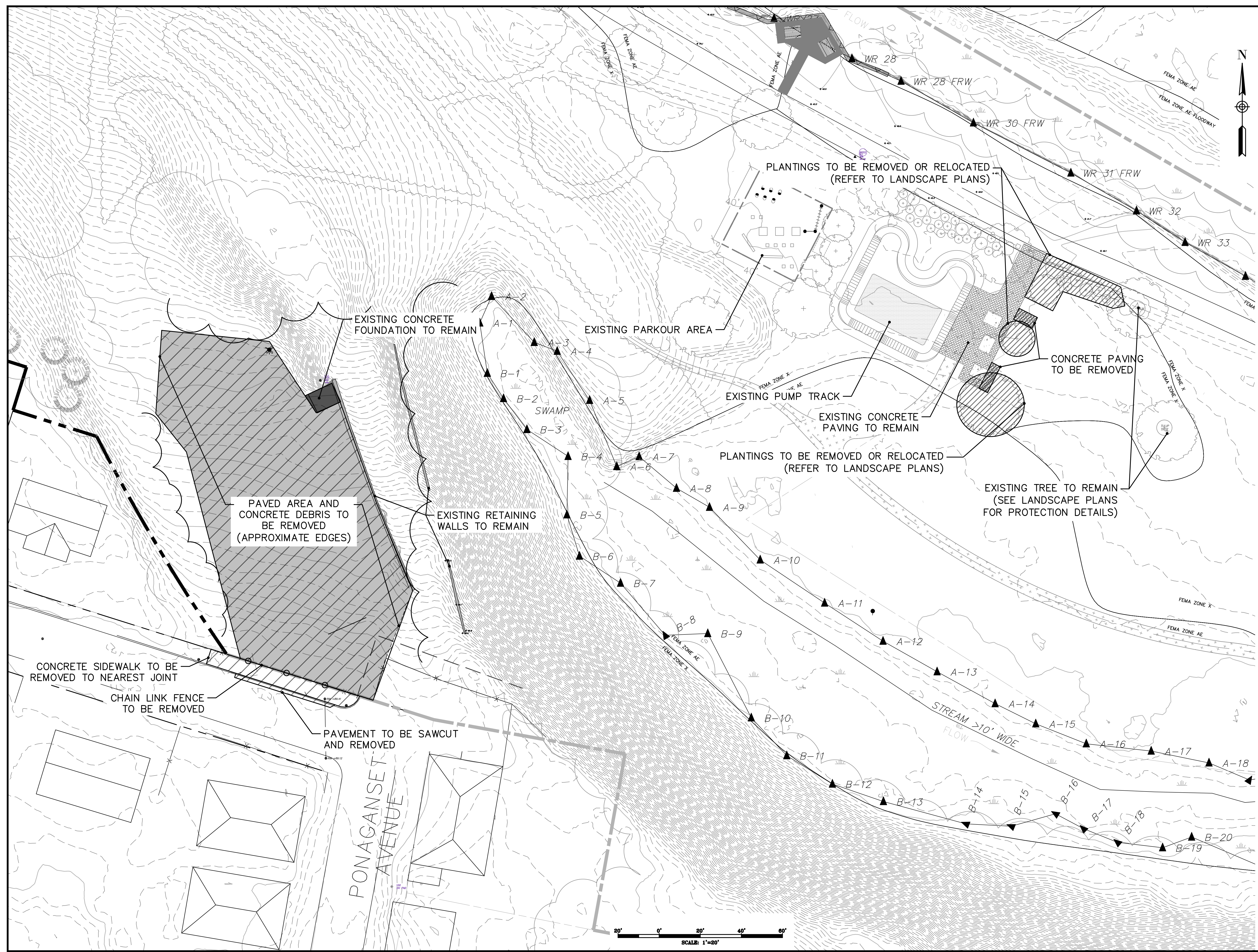
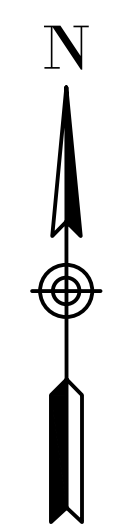
CLIENT:  
**PROVIDENCE PARKS DEPARTMENT**  
1000 ELMWOOD AVENUE  
PROVIDENCE, RI 02907

PROJECT:  
**WOONASQUATUCKET ADVENTURE PARK PHASE II**  
GLENBRIDGE AVENUE  
PROVIDENCE, RHODE ISLAND

TITLE:  
**EXISTING CONDITIONS PLAN**

ISSUED FOR: BID  
DATE: MAY 11, 2023  
SCALE: 1" = 30'  
DRAWN BY: AJP  
CHECKED BY: RLP  
PROJECT NO: 365220361





SEAL:

REVISION	DATE	DESCRIPTION

CLIENT:  
**PROVIDENCE PARKS DEPARTMENT**  
1000 ELMWOOD AVENUE  
PROVIDENCE, RI 02907

PROJECT:  
**WOONASQUATTUCKET ADVENTURE PARK PHASE II**  
GLENBRIDGE AVENUE  
PROVIDENCE, RHODE ISLAND

TITLE:  
**DEMOLITION PLAN**

ISSUED FOR: BID  
DATE: MAY 11, 2023  
SCALE: 1" = 20'  
DRAWN BY: AJP  
CHECKED BY: RLP  
PROJECT NO: 365220361



SEAL:

REVISION	DATE	DESCRIPTION

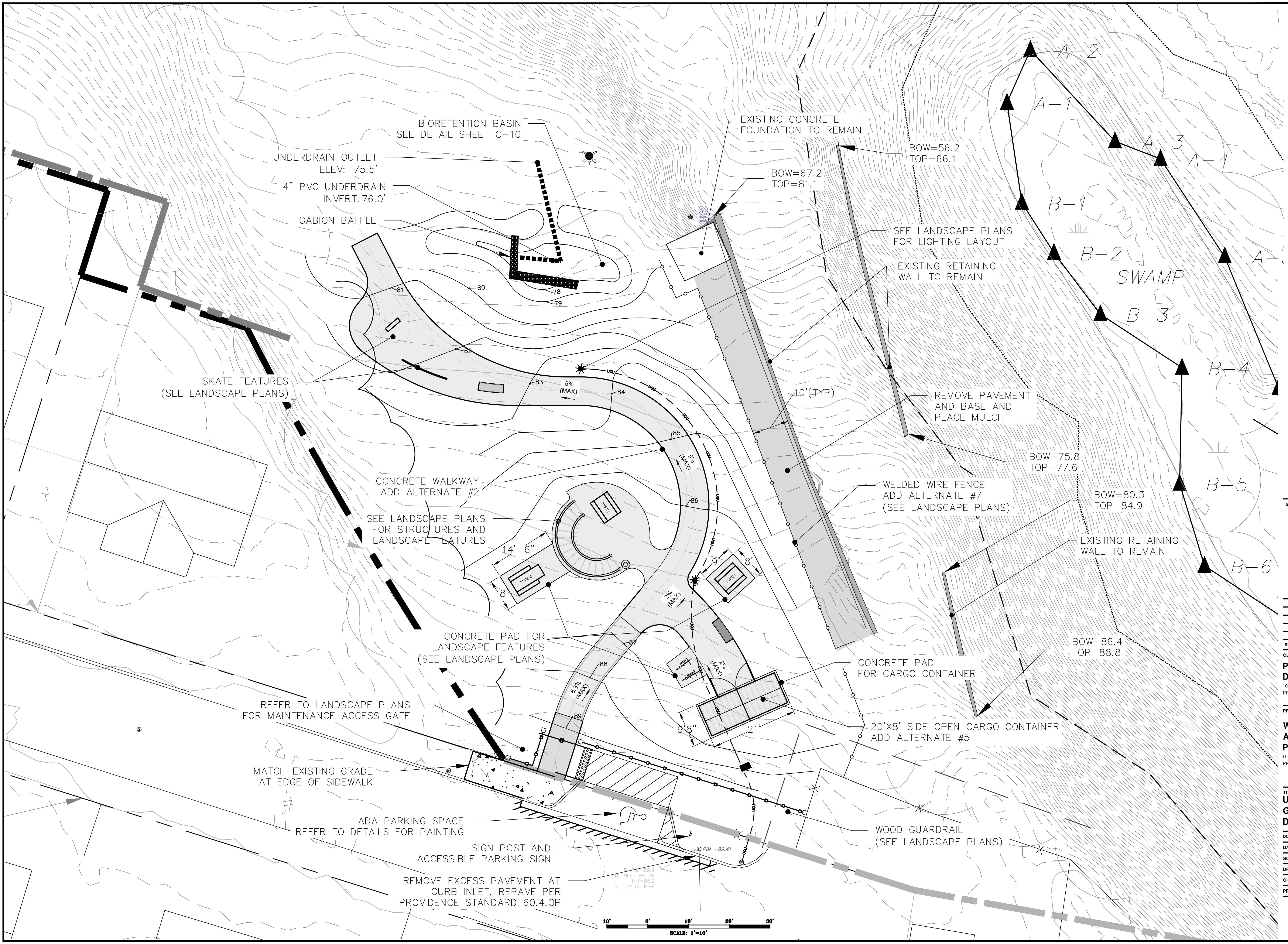
CLIENT:  
**PROVIDENCE PARKS DEPARTMENT**  
1000 ELMWOOD AVENUE  
PROVIDENCE, RI 02907

PROJECT:  
**WOONASQUATUCKET ADVENTURE PARK PHASE II**  
GLENBRIDGE AVENUE  
PROVIDENCE, RHODE ISLAND

TITLE:  
**UPPER AREA GRADING & DRAINAGE PLAN**

ISSUED FOR: BID  
DATE: MAY 11, 2023  
SCALE: 1" = 10'  
DRAWN BY: AJP  
CHECKED BY: RLP  
PROJECT NO: 365220361

**C-4**



BIORETENTION BASIN  
SEE DETAIL SHEET C-10

UNDERDRAIN OUTLET  
ELEV: 75.5'

4" PVC UNDERDRAIN  
INVERT: 76.0'

GABION BAFFLE

EXISTING CONCRETE  
FOUNDATION TO REMAIN

BOW=67.2  
TOP=81.1

BOW=56.2  
TOP=66.1

SEE LANDSCAPE PLANS  
FOR LIGHTING LAYOUT

EXISTING RETAINING  
WALL TO REMAIN

BOW=75.8  
TOP=77.6

REMOVE PAVEMENT  
AND BASE AND  
PLACE MULCH

WELDED WIRE FENCE  
ADD ALTERNATE #7  
(SEE LANDSCAPE PLANS)

BOW=80.3  
TOP=84.9

BOW=86.4  
TOP=88.8

EXISTING RETAINING  
WALL TO REMAIN

SKATE FEATURES  
(SEE LANDSCAPE PLANS)

CONCRETE WALKWAY  
ADD ALTERNATE #2

SEE LANDSCAPE PLANS  
FOR STRUCTURES AND  
LANDSCAPE FEATURES

CONCRETE PAD FOR  
LANDSCAPE FEATURES  
(SEE LANDSCAPE PLANS)

CONCRETE PAD  
FOR CARGO CONTAINER

20'X8' SIDE OPEN CARGO CONTAINER  
ADD ALTERNATE #5

REFER TO LANDSCAPE PLANS  
FOR MAINTENANCE ACCESS GATE

MATCH EXISTING GRADE  
AT EDGE OF SIDEWALK

ADA PARKING SPACE  
REFER TO DETAILS FOR PAINTING

SIGN POST AND  
ACCESSIBLE PARKING SIGN

REMOVE EXCESS PAVEMENT AT  
CURB INLET, REPAVE PER  
PROVIDENCE STANDARD 60.4.0P

SCALE: 1"=10'



SEAL:

REVISION	DATE	DESCRIPTION

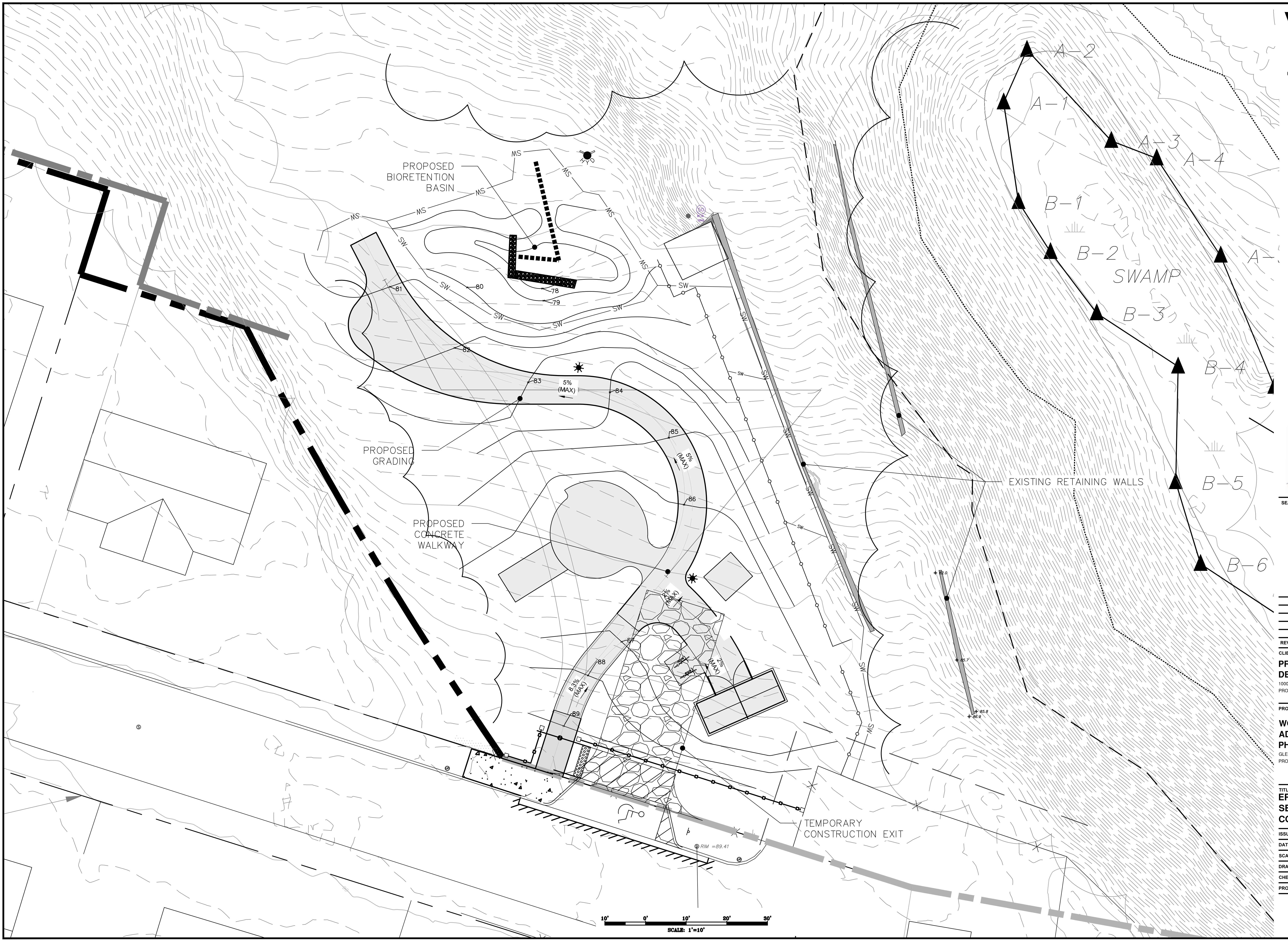
CLIENT:  
**PROVIDENCE PARKS DEPARTMENT**  
1000 ELMWOOD AVENUE  
PROVIDENCE, RI 02907

PROJECT:  
**WOONASQUATUCKET ADVENTURE PARK PHASE II**  
GLENBRIDGE AVENUE  
PROVIDENCE, RHODE ISLAND

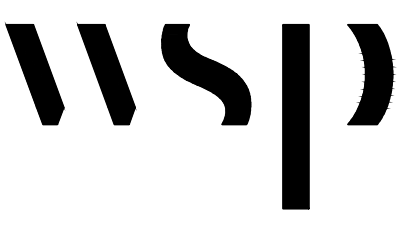
TITLE:  
**EROSION & SEDIMENTATION CONTROL PLAN 1**

ISSUED FOR: BID  
DATE: MAY 11, 2023  
SCALE: 1" = 10'  
DRAWN BY: AJP  
CHECKED BY: RLP  
PROJECT NO: 365220361

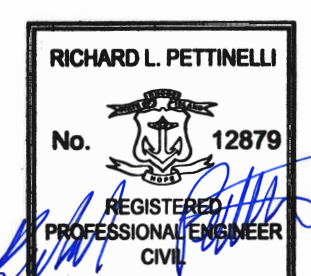
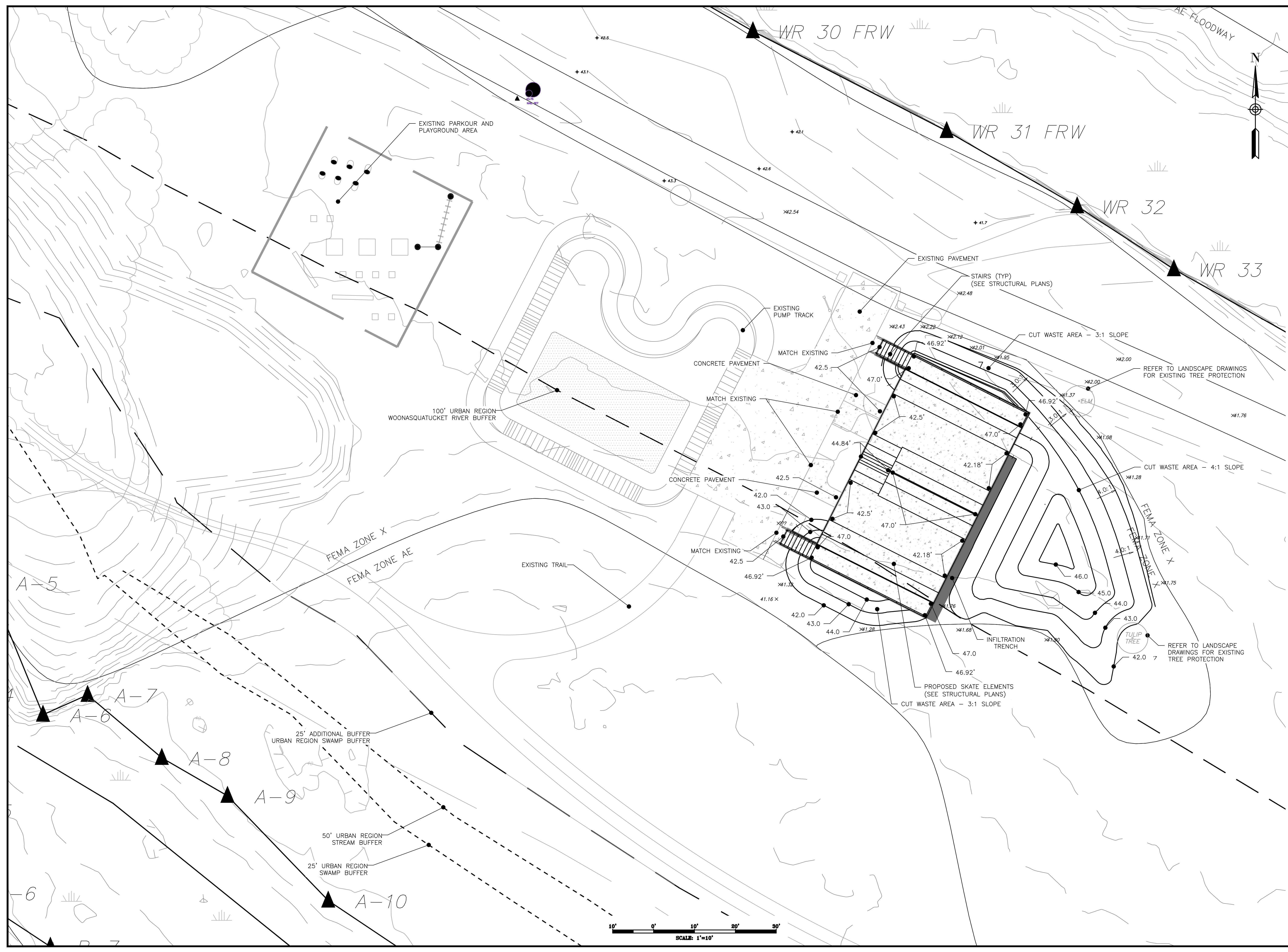
**C-5**



SCALE: 1"=10'



WSP USA INC.  
166 VALLEY STREET, BUILDING 5  
PROVIDENCE RHODE ISLAND, 02909  
WEB: WWW.WSP.COM  
(401) 648-9240



SEAL:

REVISION	DATE	DESCRIPTION

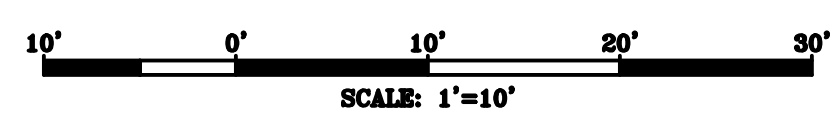
CLIENT:  
**PROVIDENCE PARKS DEPARTMENT**  
1000 ELMWOOD AVENUE  
PROVIDENCE, RI 02907

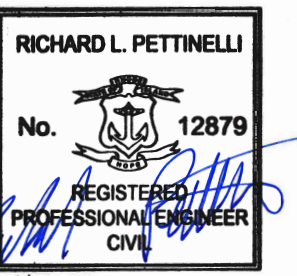
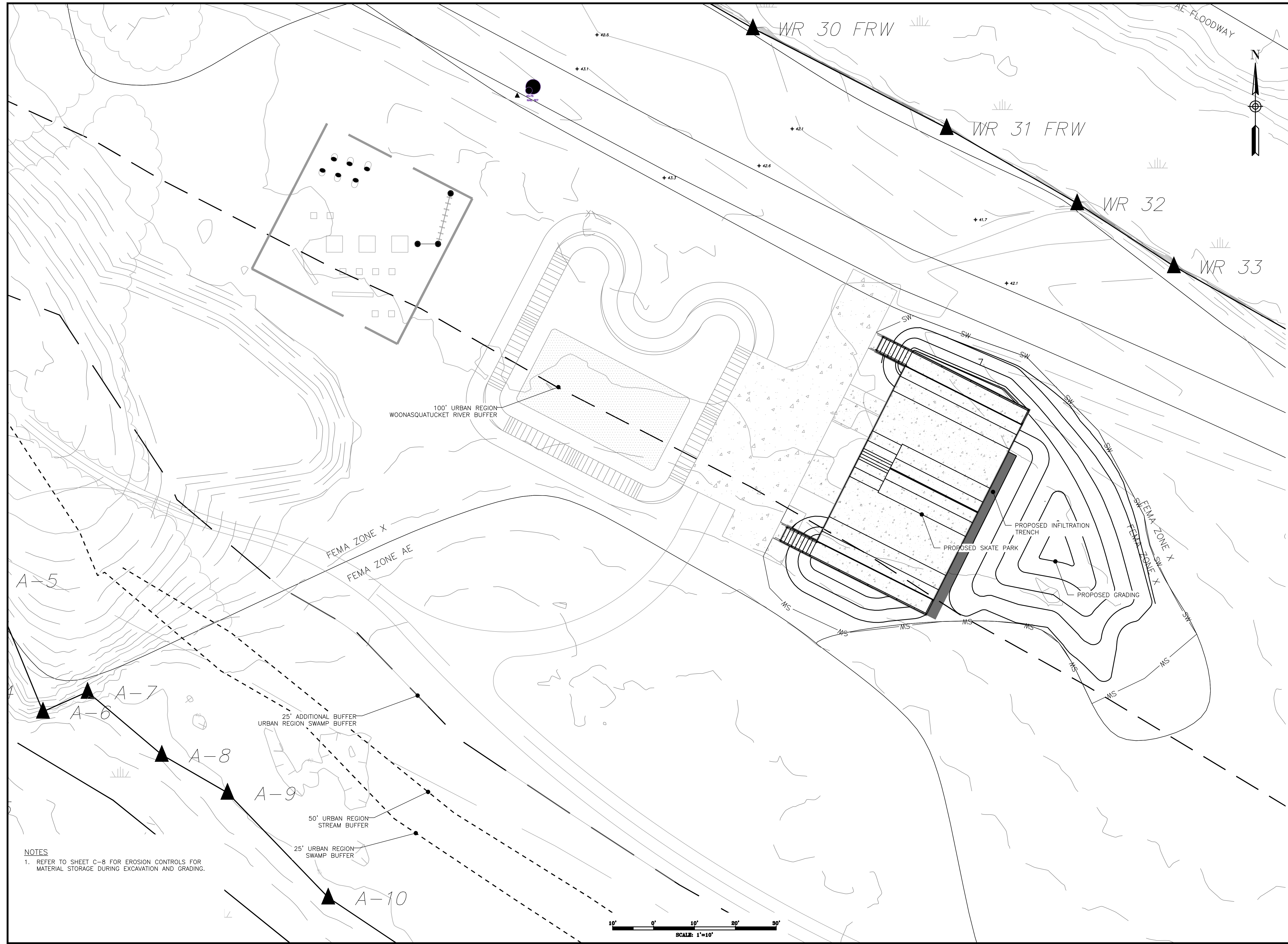
PROJECT:  
**WOONASQUATUCKET ADVENTURE PARK PHASE II**  
GLENBRIDGE AVENUE  
PROVIDENCE, RHODE ISLAND

TITLE:  
**LOWER AREA GRADING & DRAINAGE PLAN**

ISSUED FOR: BID  
DATE: MAY 11, 2023  
SCALE: 1" = 10'  
DRAWN BY: DEW  
CHECKED BY: RLP  
PROJECT NO: 365220361

**C-6**





SEAL:

REVISION	DATE	DESCRIPTION

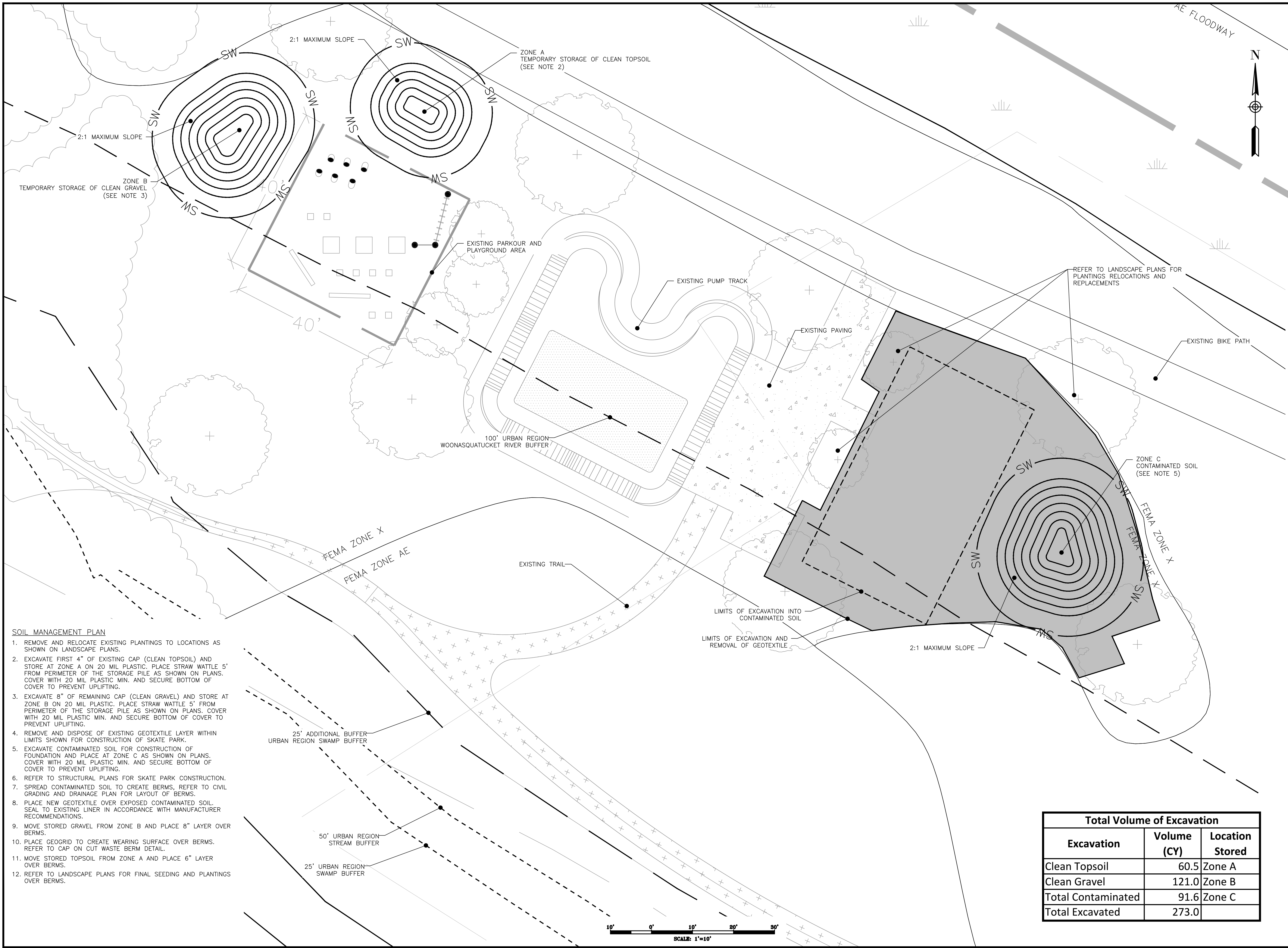
CLIENT:  
**PROVIDENCE PARKS DEPARTMENT**  
1000 ELMWOOD AVENUE  
PROVIDENCE, RI 02907

PROJECT:  
**WOONASQUATUCKET ADVENTURE PARK PHASE II**  
GLENBRIDGE AVENUE  
PROVIDENCE, RHODE ISLAND

TITLE:  
**EROSION & SEDIMENTATION CONTROL PLAN 2**

ISSUED FOR: BID  
DATE: MAY 11, 2023  
SCALE: 1" = 10'  
DRAWN BY: DEW  
CHECKED BY: RLP  
PROJECT NO: 365220361

**NOTES**  
1. REFER TO SHEET C-8 FOR EROSION CONTROLS FOR MATERIAL STORAGE DURING EXCAVATION AND GRADING.



- SOIL MANAGEMENT PLAN**
1. REMOVE AND RELOCATE EXISTING PLANTINGS TO LOCATIONS AS SHOWN ON LANDSCAPE PLANS.
  2. EXCAVATE FIRST 4" OF EXISTING CAP (CLEAN TOPSOIL) AND STORE AT ZONE A ON 20 MIL PLASTIC. PLACE STRAW WATTLE 5' FROM PERIMETER OF THE STORAGE PILE AS SHOWN ON PLANS. COVER WITH 20 MIL PLASTIC MIN. AND SECURE BOTTOM OF COVER TO PREVENT UPLIFTING.
  3. EXCAVATE 8" OF REMAINING CAP (CLEAN GRAVEL) AND STORE AT ZONE B ON 20 MIL PLASTIC. PLACE STRAW WATTLE 5' FROM PERIMETER OF THE STORAGE PILE AS SHOWN ON PLANS. COVER WITH 20 MIL PLASTIC MIN. AND SECURE BOTTOM OF COVER TO PREVENT UPLIFTING.
  4. REMOVE AND DISPOSE OF EXISTING GEOTEXTILE LAYER WITHIN LIMITS SHOWN FOR CONSTRUCTION OF SKATE PARK.
  5. EXCAVATE CONTAMINATED SOIL FOR CONSTRUCTION OF FOUNDATION AND PLACE AT ZONE C AS SHOWN ON PLANS. COVER WITH 20 MIL PLASTIC MIN. AND SECURE BOTTOM OF COVER TO PREVENT UPLIFTING.
  6. REFER TO STRUCTURAL PLANS FOR SKATE PARK CONSTRUCTION.
  7. SPREAD CONTAMINATED SOIL TO CREATE BERMS, REFER TO CIVIL GRADING AND DRAINAGE PLAN FOR LAYOUT OF BERMS.
  8. PLACE NEW GEOTEXTILE OVER EXPOSED CONTAMINATED SOIL. SEAL TO EXISTING LINER IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
  9. MOVE STORED GRAVEL FROM ZONE B AND PLACE 8" LAYER OVER BERMS.
  10. PLACE GEOGRID TO CREATE WEARING SURFACE OVER BERMS. REFER TO CAP ON CUT WASTE BERM DETAIL.
  11. MOVE STORED TOPSOIL FROM ZONE A AND PLACE 6" LAYER OVER BERMS.
  12. REFER TO LANDSCAPE PLANS FOR FINAL SEEDING AND PLANTINGS OVER BERMS.

Total Volume of Excavation		
Excavation	Volume (CY)	Location Stored
Clean Topsoil	60.5	Zone A
Clean Gravel	121.0	Zone B
Total Contaminated	91.6	Zone C
<b>Total Excavated</b>	<b>273.0</b>	



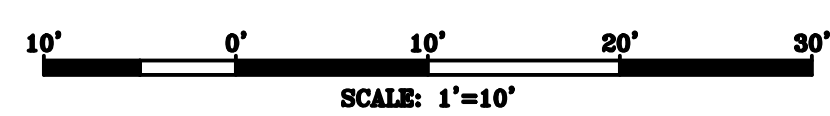
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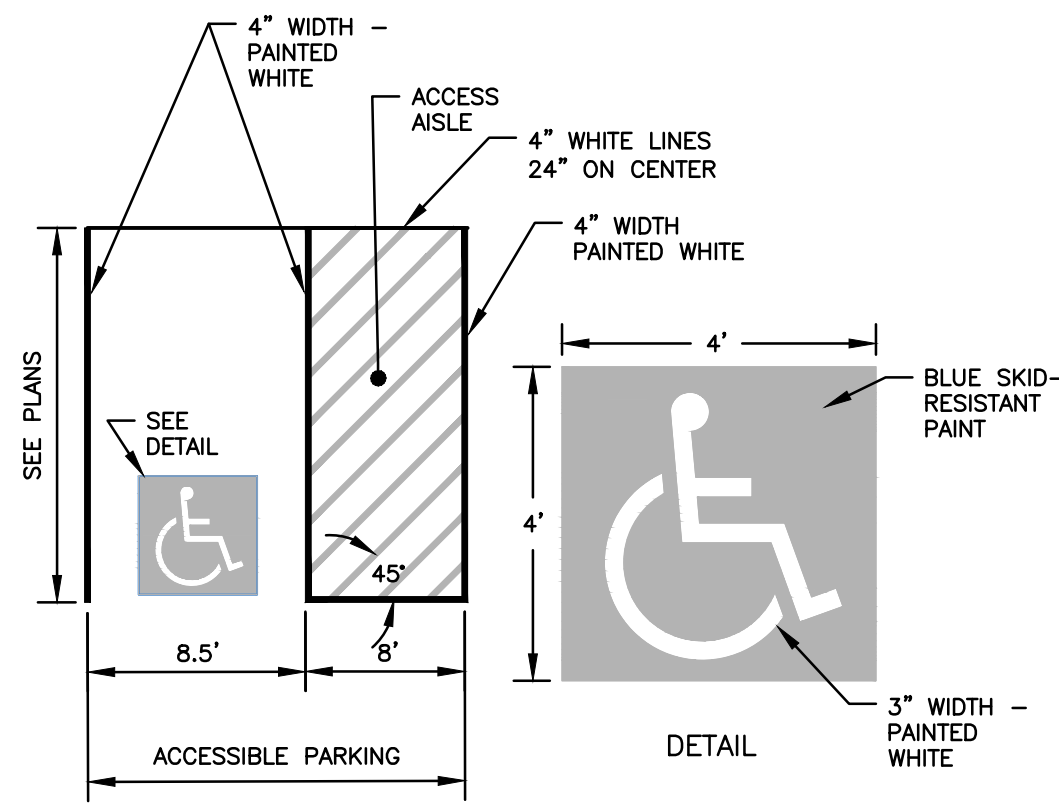

CLIENT:  
**PROVIDENCE PARKS DEPARTMENT**  
 1000 ELMWOOD AVENUE  
 PROVIDENCE, RI 02907

PROJECT:  
**WOONASQUATUCKET ADVENTURE PARK PHASE II**  
 GLENBRIDGE AVENUE  
 PROVIDENCE, RHODE ISLAND

TITLE:  
**SOIL MANAGEMENT PLAN**

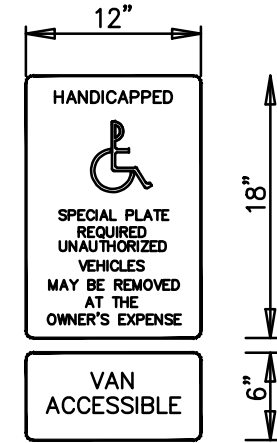
ISSUED FOR: BID  
 DATE: MAY 11, 2023  
 SCALE: 1" = 10'  
 DRAWN BY: AJP  
 CHECKED BY: RLP  
 PROJECT NO: 365220361





MUTCD R7-8:

MUTCD R7-8P:



NOTES:

- REFLECTIVE BLUE BACKGROUND WHITE LETTERING AND SYMBOL LETTERING MINIMUM 1" HEIGHT
- ONE SIGN PER ADA ACCESSIBLE PARKING SPACE.
- SIGNAGE SHALL FOLLOW MUTCD STANDARDS.

NOTES:

- ALL DIMENSIONS TO CENTER OF 4" PAVEMENT STRIPING.
- MAINTAIN 8" MINIMUM CLEARANCE BETWEEN INSIDE EDGES OF PARKING STALL PAVEMENT MARKINGS.
- ALL SLOPES THROUGHOUT THE ACCESSIBLE PARKING AND AISLE AREAS SHALL NOT EXCEED 2.0%.

**ADA PARKING SPACE**

NTS

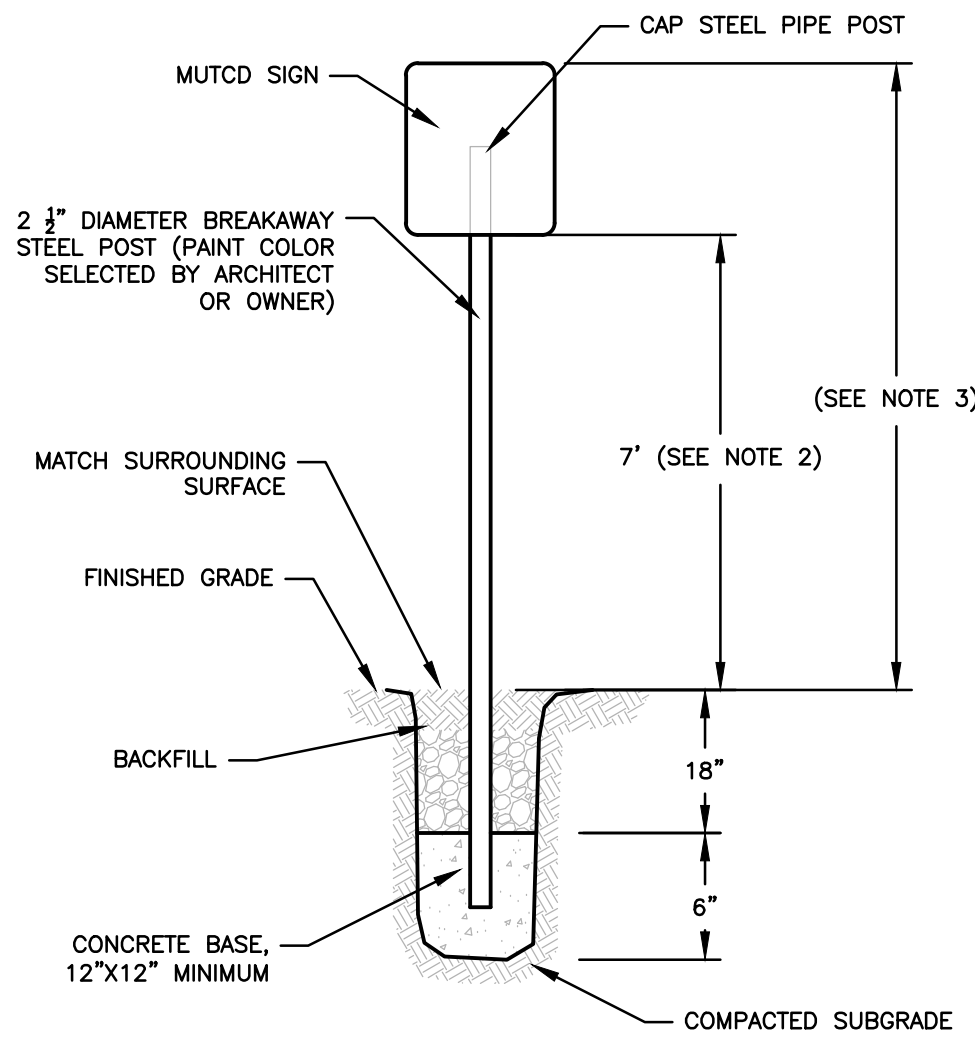
APW

**ACCESSIBLE PARKING SIGNS**

NTS

**SIGN POST**

NTS



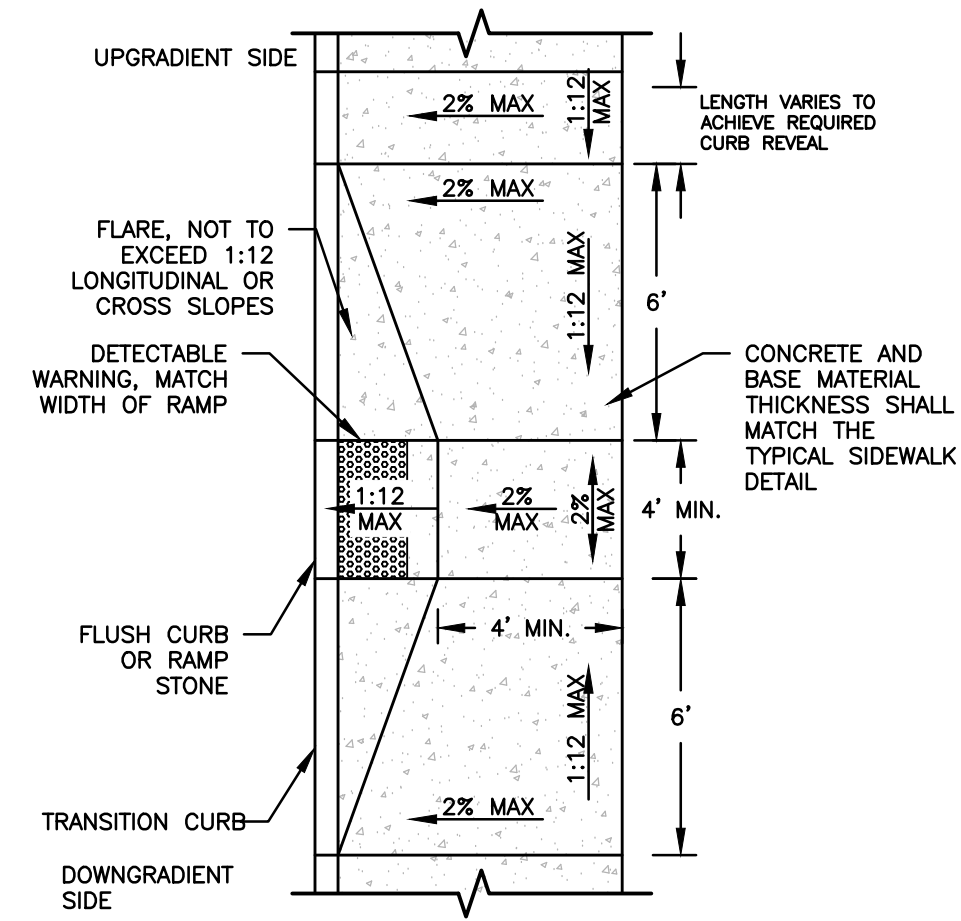
NOTES:

- FOR USE IN LANDSCAPE AREAS AND SIDEWALKS ONLY. NOT FOR USE IN PARKING LOTS OR TRAVELED WAYS.
- FOR ADA SIGNAGE, THIS DIMENSION SHALL BE 5' (MIN.)
- FOR ADA SIGNAGE, THIS DIMENSION SHALL BE 8' (MAX.)

**ADA RAMP TYPE A**

NTS

APW



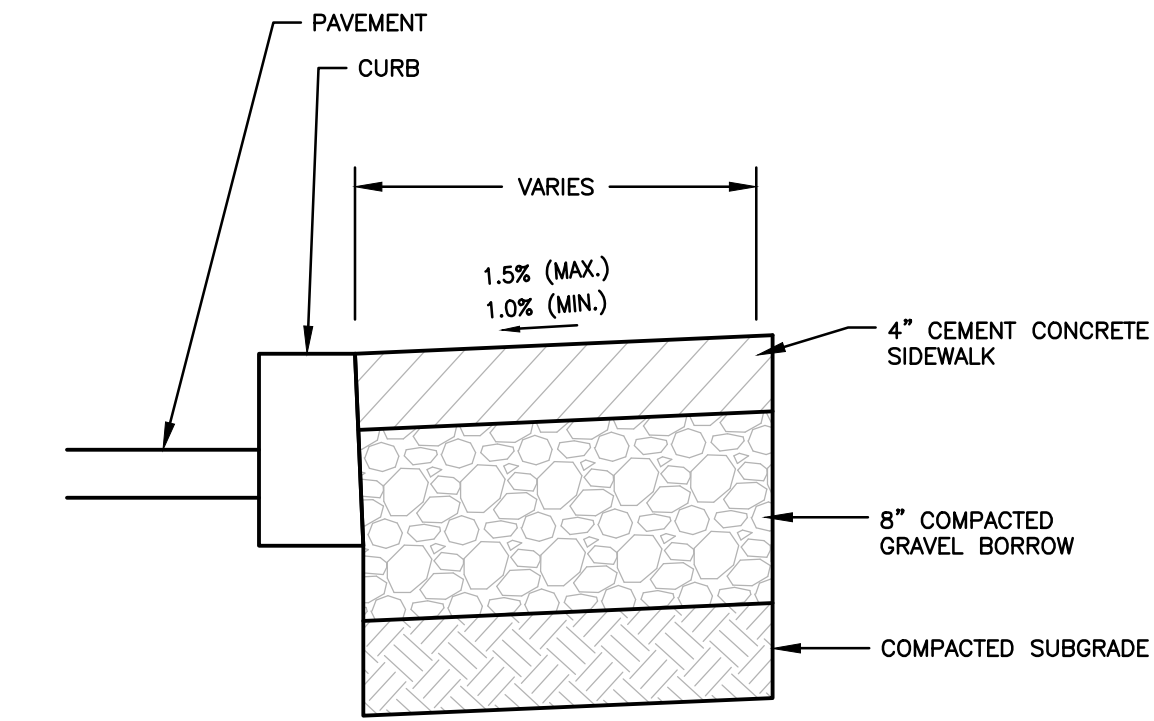
NOTES:

- SHALL BE IN ACCORDANCE WITH SECTION 905 OF RIDOT STANDARD SPECIFICATIONS.

**CEMENT CONCRETE SIDEWALK**

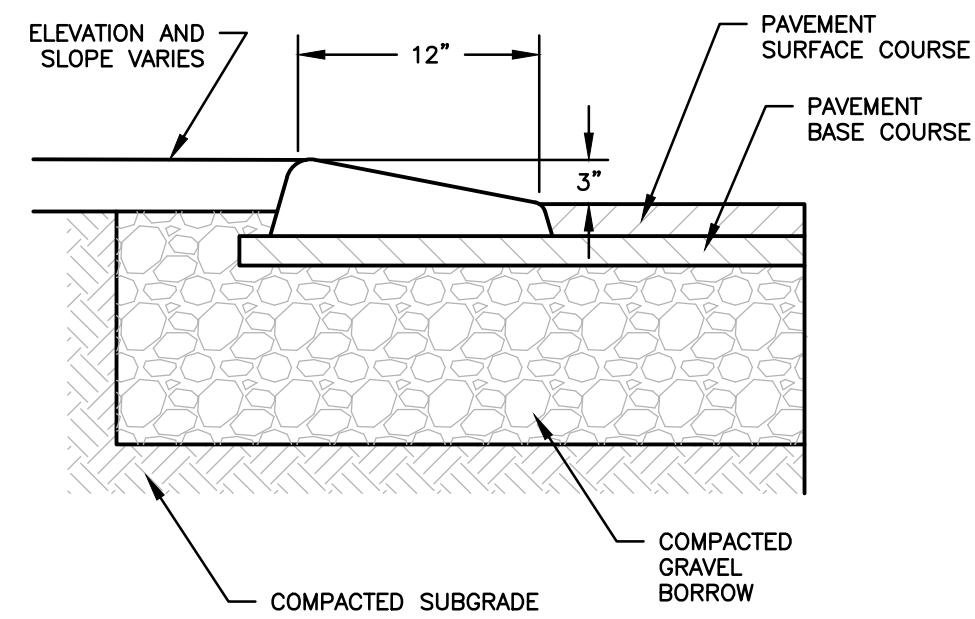
NTS

APW



NOTES:

- SHALL BE IN ACCORDANCE WITH SECTION 905 OF RIDOT STANDARD SPECIFICATIONS.



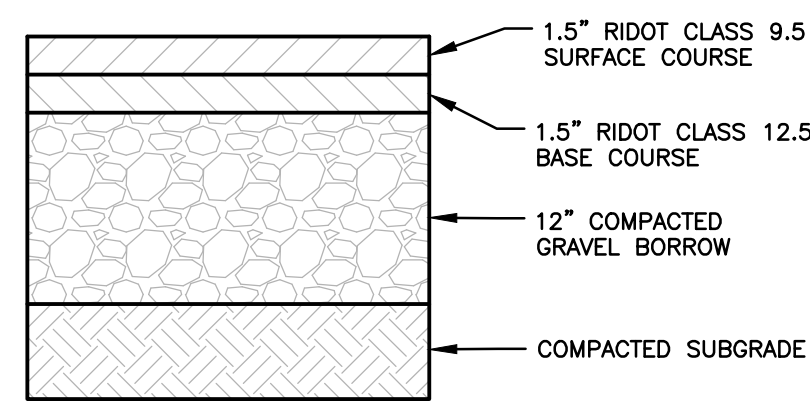
NOTES:

- ALL CURBING TO BE MACHINE EXTRUDED.
- CCB SHALL BE INSTALLED IN ACCORDANCE WITH RIDOT SPECIFICATIONS.

**CAPE COD BERM**

NTS

APW



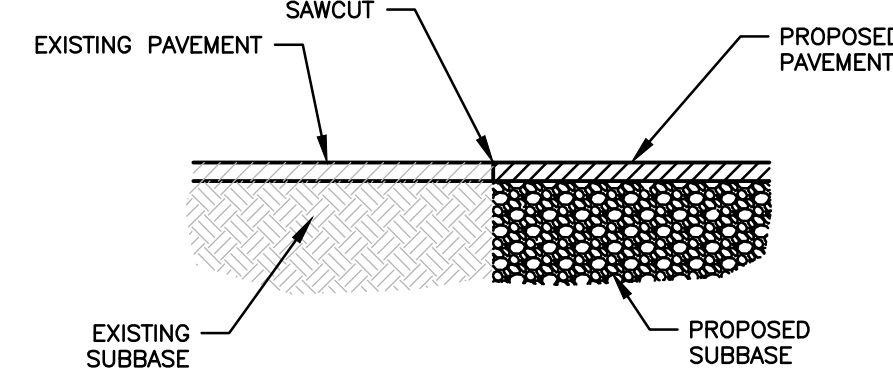
NOTE:

FOR PAVEMENT AT ADA PARKING SPACE. PAVEMENT SHALL BE INSTALLED IN ACCORDANCE WITH RIDOT SPECIFICATIONS.

**BITUMINOUS CONCRETE PAVEMENT**

NTS

APW



NOTES:

- CLEAN SAWED JOINTS WITH COMPRESSED AIR.
- APPLY JOINT SEAL MATERIAL FILLING FROM THE BOTTOM UP.
- THE HOT-SEAL MATERIAL SHALL COMPLETELY FILL THE SAWCUT SUCH THAT AFTER COOLING THE LEVEL OF THE SEALER WILL NOT BE GREATER THAN 1/8 INCH BELOW THE PAVEMENT SURFACE.
- CARE SHALL BE TAKE DURING THE SEALING OPERATION TO INSURE THAT THE FINAL APPEARANCE WILL PRESENT A NEAT LINE.

**PAVEMENT SAWCUT**

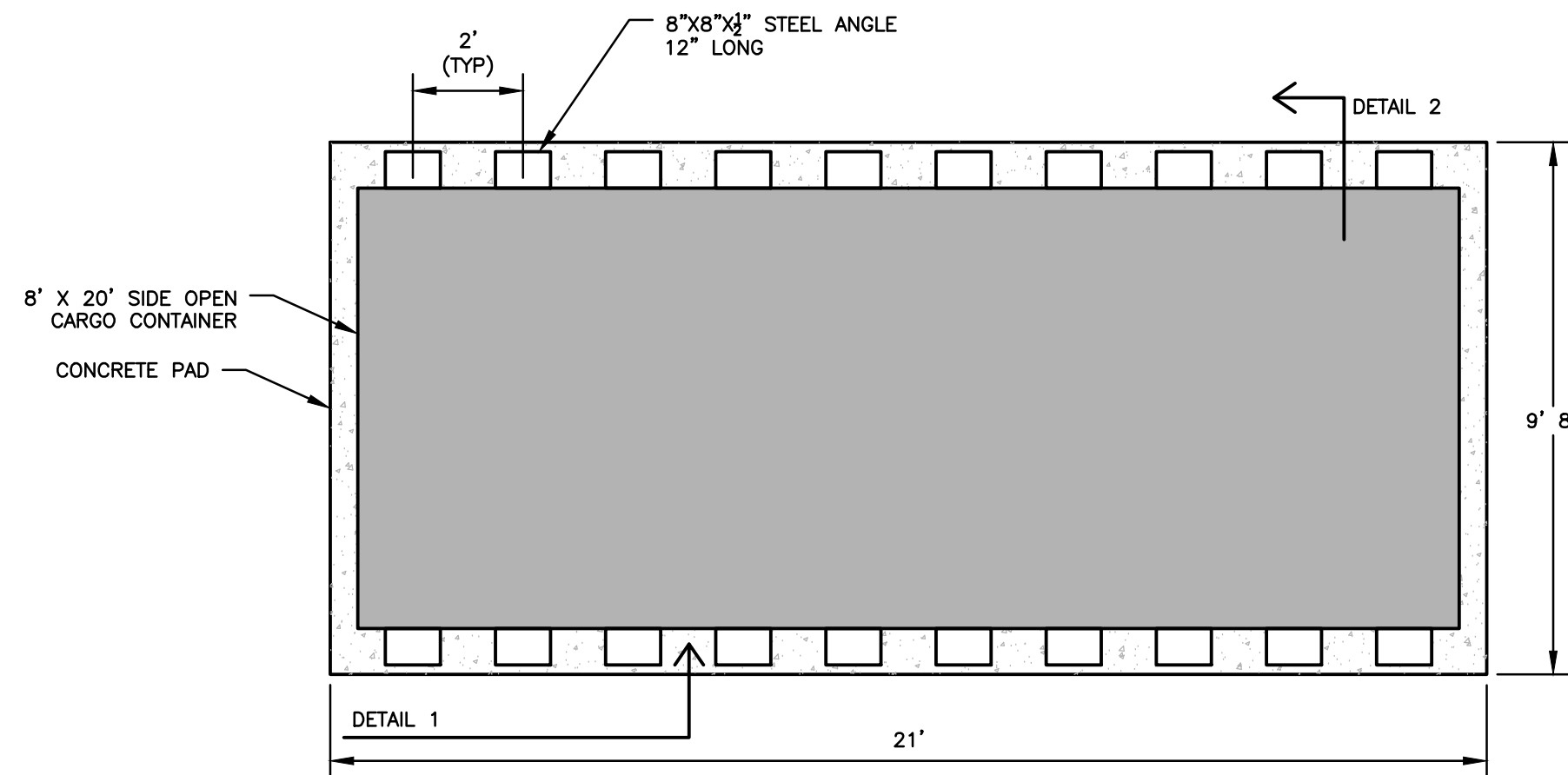
NTS

CA-RD-024

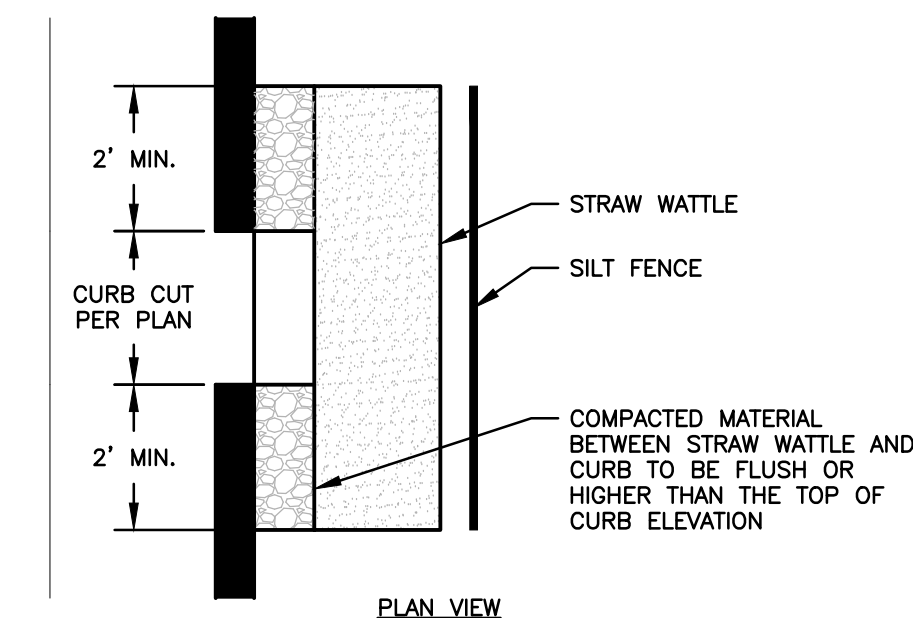
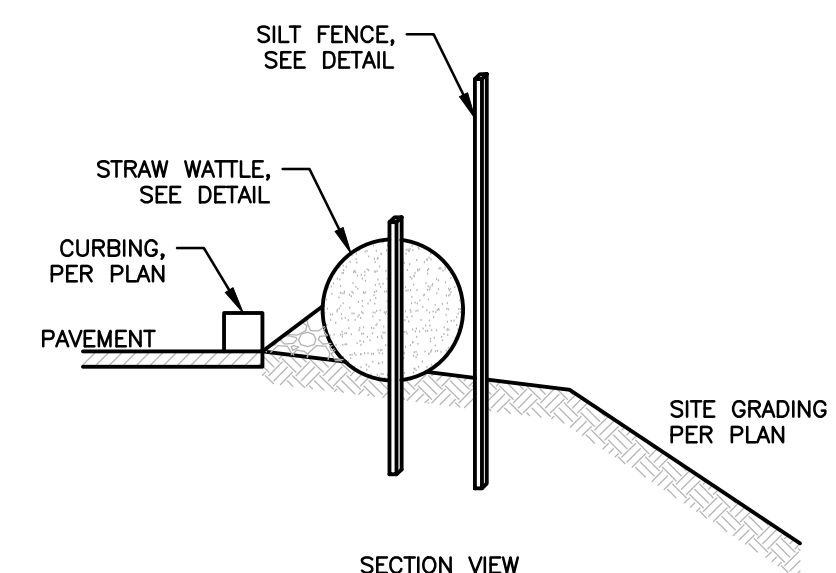
**CARGO CONTAINER ATTACHMENT TO CONCRETE PAD - PLAN**

NTS

APW



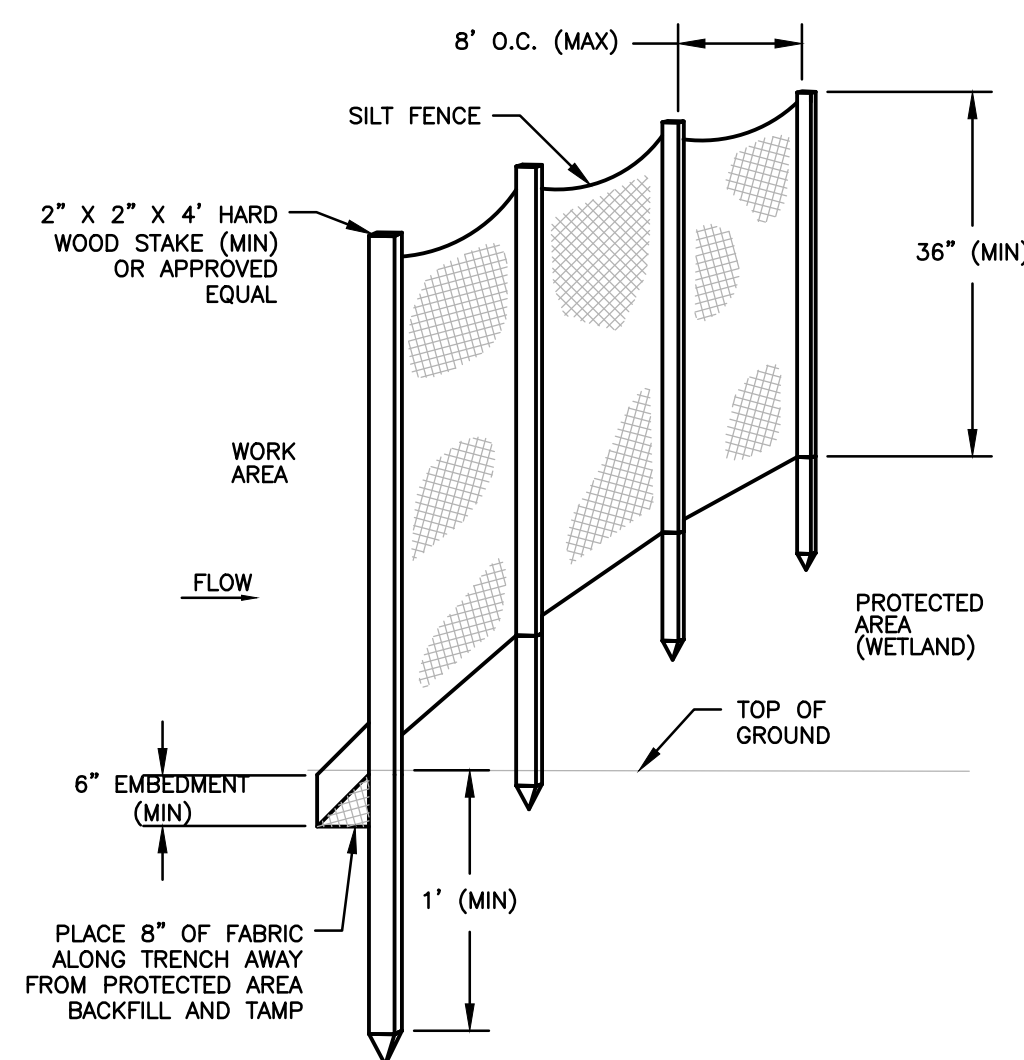
SEAL:



**STRAW WATTLE**

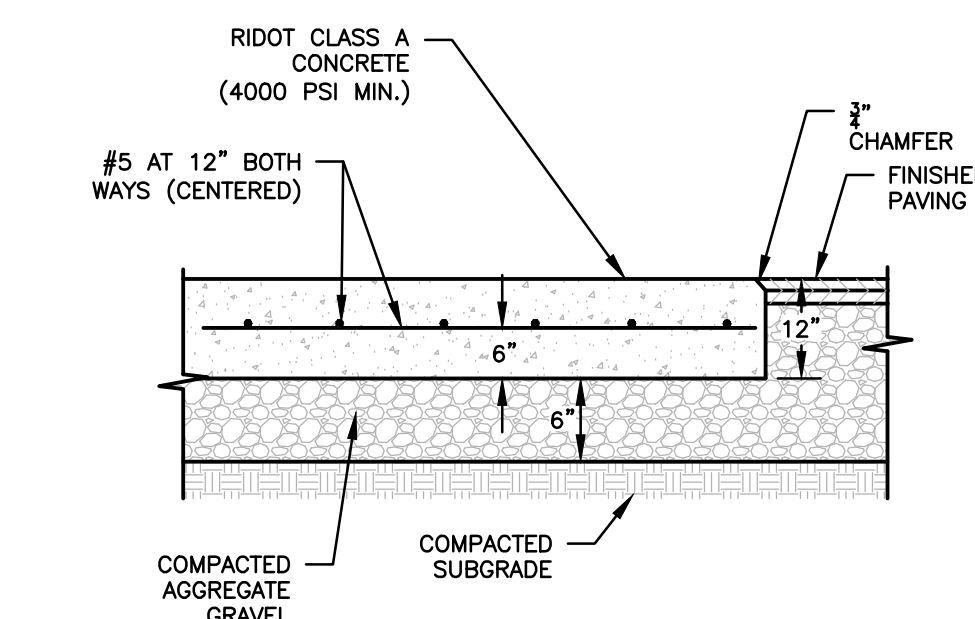
NTS

APW



NOTES:

- SILT FENCE SHALL BE LOCATED AT 10' FROM TOE OF SLOPE FOR MAINTENANCE.
- 8' WITH WIRE OR 6' WITHOUT WIRE (MAX).
- WIRE FENCING - 6" MESH OPENING (MAX) AND 14 GAUGE (MIN).
- MAINTAIN UNTIL UP-GRADIENT AREAS HAVE BEEN PERMANENTLY STABILIZED.



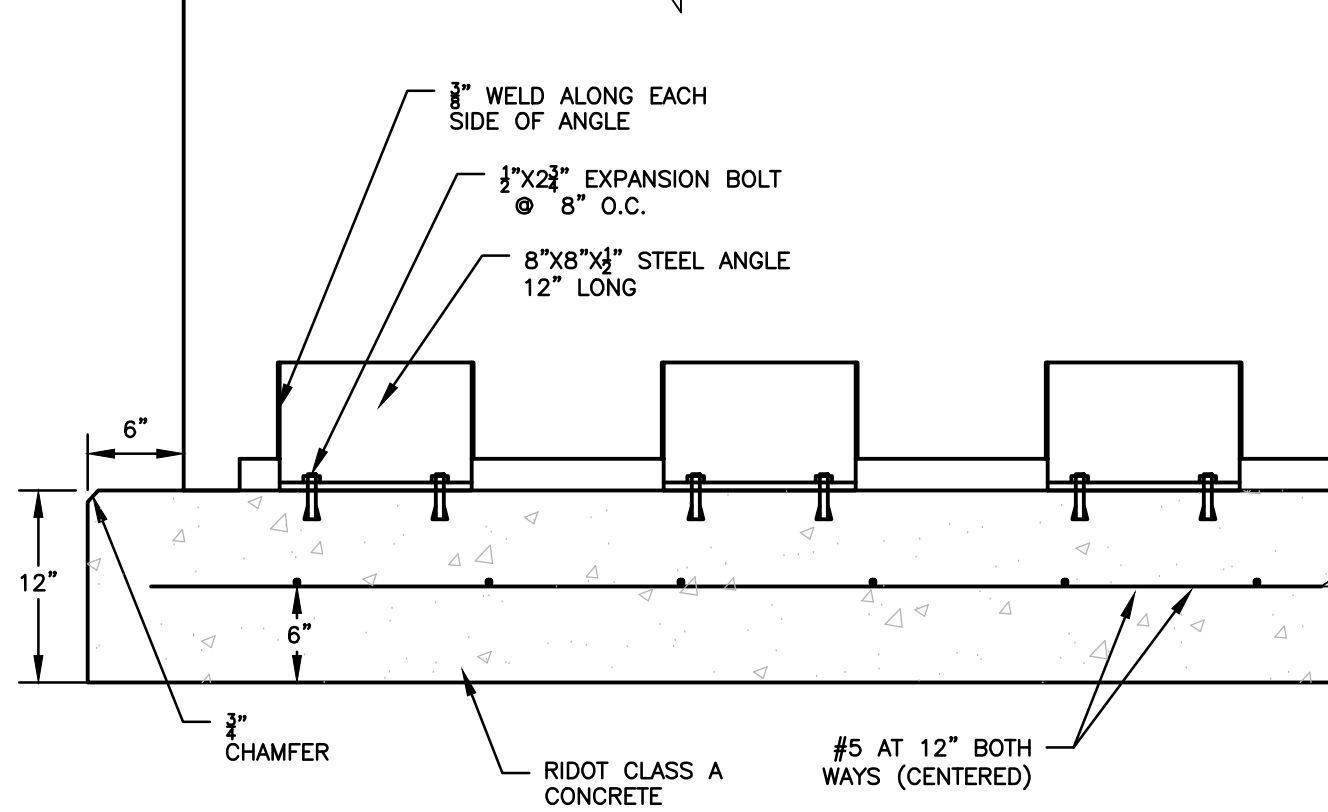
NOTES:

- SIZE OF PAD TO BE AS INDICATED ON PLANS.
- CONSTRUCTION JOINTS SHALL BE SPACED NO MORE THAN 10 FEET ON CENTER AND SHALL BE EQUALLY SPACED OVER THE LENGTH AND WIDTH OF THE PAD.
- CONCRETE PADS WITHIN LANDSCAPE AREAS SHALL PROVIDE 2" EXPOSURE ABOVE SURROUNDING FINISHED GRADE.

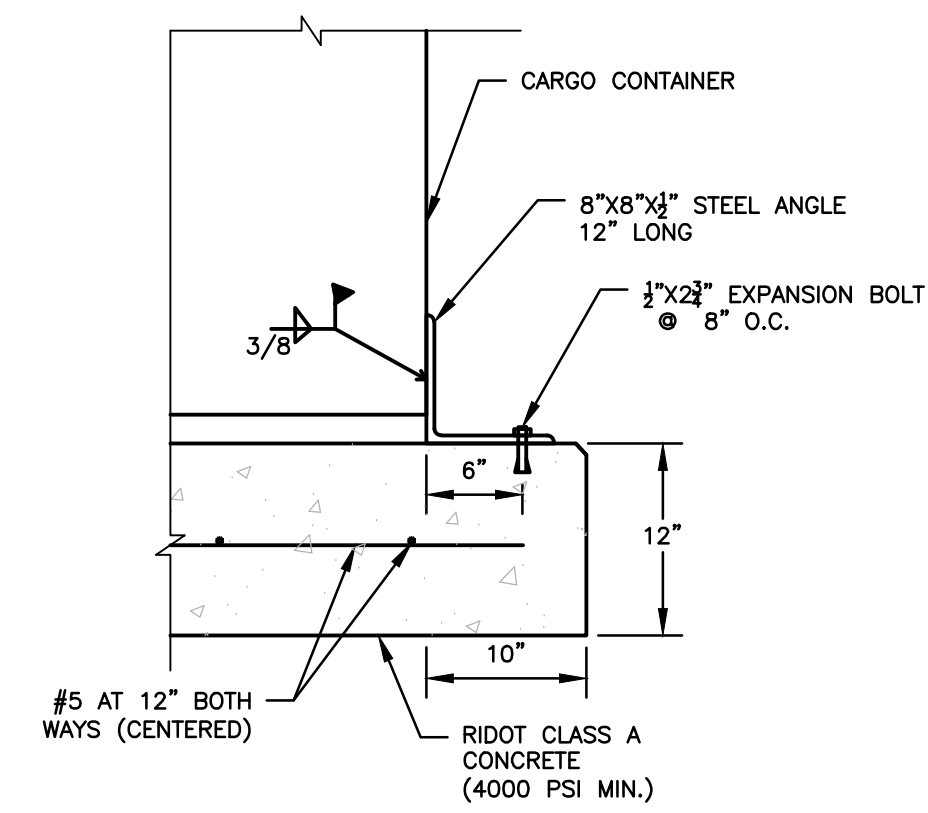
**CONCRETE PAD - CARGO CONTAINER**

NTS

APW



DETAIL 1



DETAIL 2

**CARGO CONTAINER ATTACHMENT TO CONCRETE PAD - ELEVATIONS**

NTS

APW

REVISION	DATE	DESCRIPTION

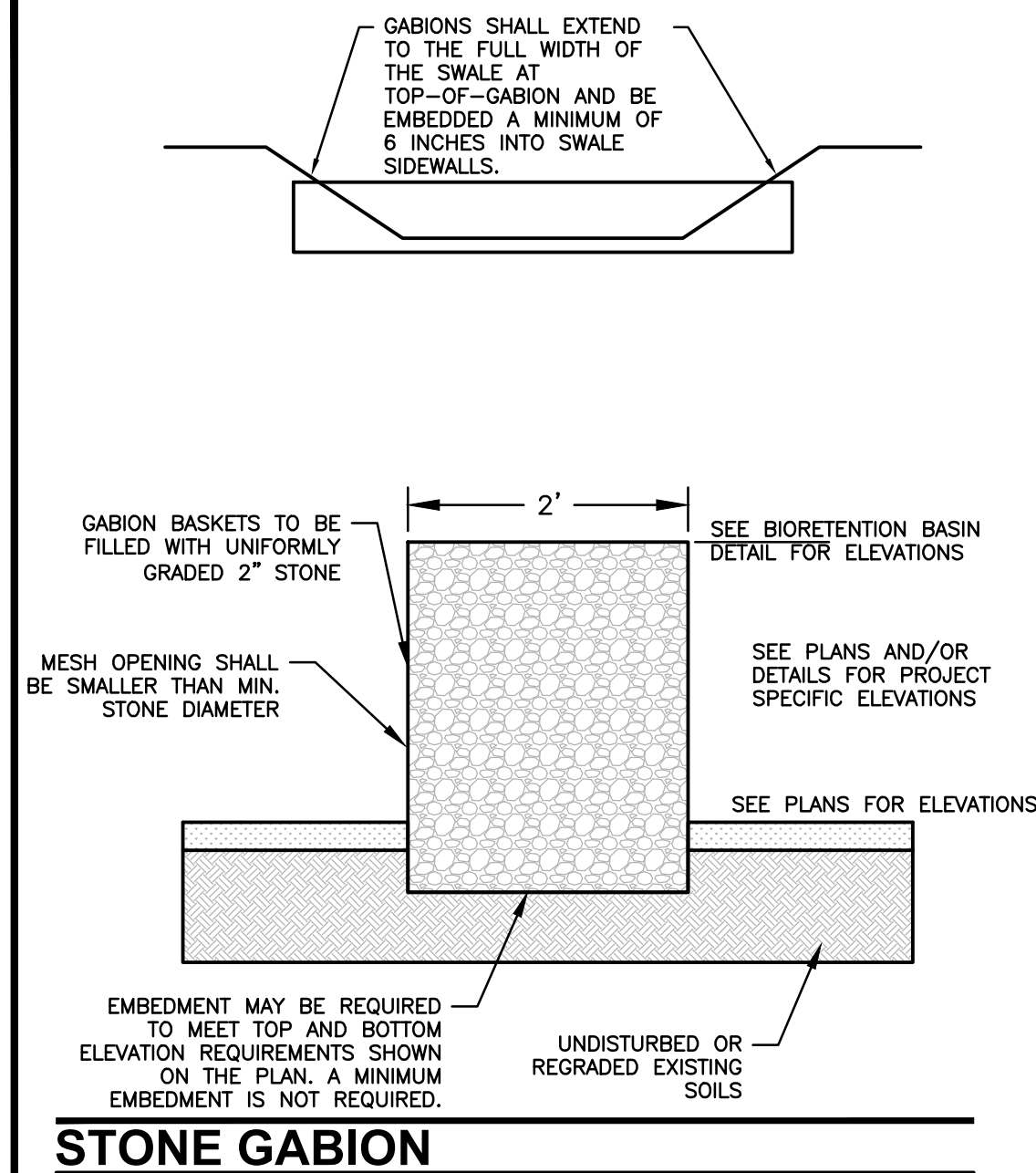
CLIENT:  
**PROVIDENCE PARKS DEPARTMENT**  
1000 ELMWOOD AVENUE  
PROVIDENCE, RI 02907

PROJECT:  
**WOONASQUATUCKET ADVENTURE PARK PHASE II**  
GLENBRIDGE AVENUE  
PROVIDENCE, RHODE ISLAND

TITLE:

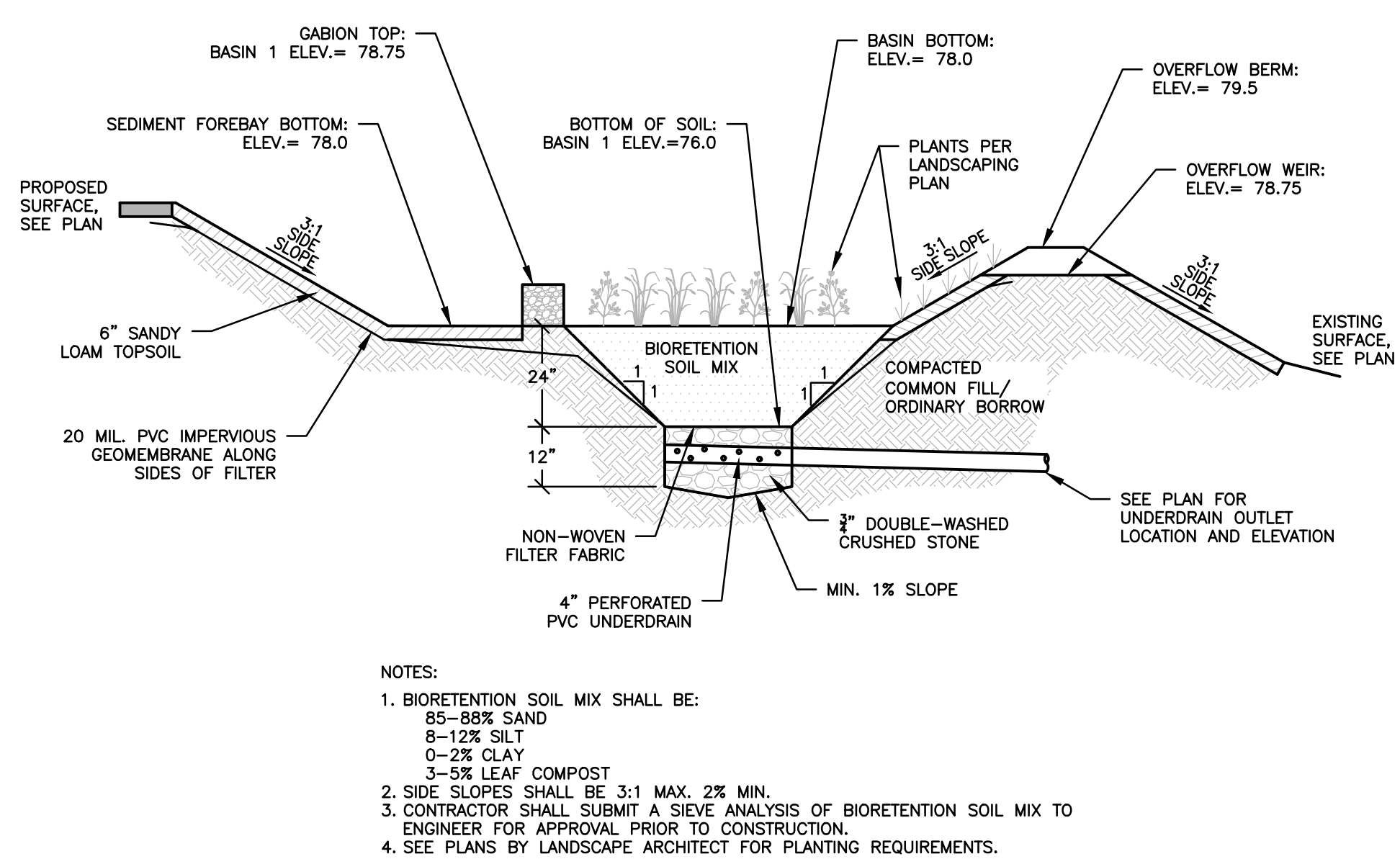
**DETAILS 1**

ISSUED FOR:	BID
DATE:	MAY 11, 2023
SCALE:	N/A
DRAWN BY:	AJP
CHECKED BY:	RLP
PROJECT NO.:	365220361



**STONE GABION**

NTS

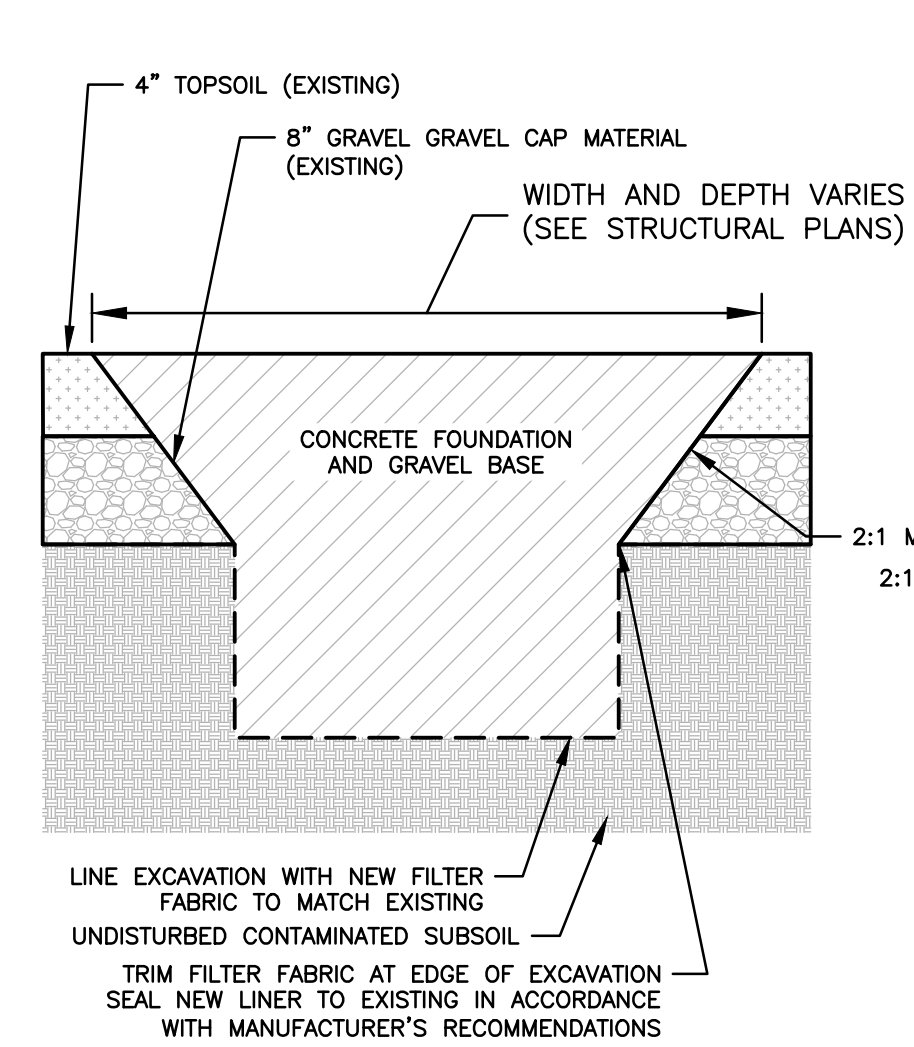


- NOTES:
- BIORETENTION SOIL MIX SHALL BE:  
85-85% SAND  
8-12% SILT  
0-2% CLAY  
3-5% LEAF COMPOST
  - SIDE SLOPES SHALL BE 3:1 MAX. 2% MIN.
  - CONTRACTOR SHALL SUBMIT A SIEVE ANALYSIS OF BIORETENTION SOIL MIX TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
  - SEE PLANS BY LANDSCAPE ARCHITECT FOR PLANTING REQUIREMENTS.

**BIORETENTION BASIN**

NTS

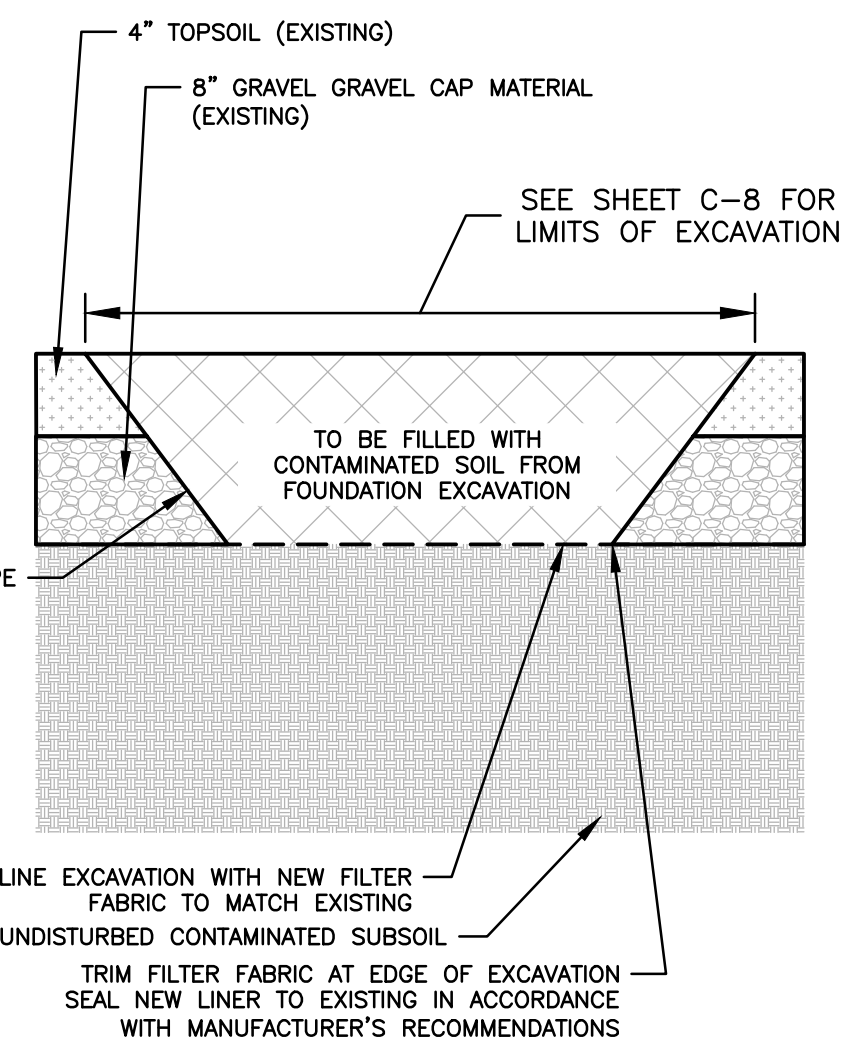
APF



- NOTES:
- EXCAVATED MATERIALS TO BE STORED AND REUSED PER SOIL MANAGEMENT PLAN

**CAP EXCAVATION FOR FOUNDATION**

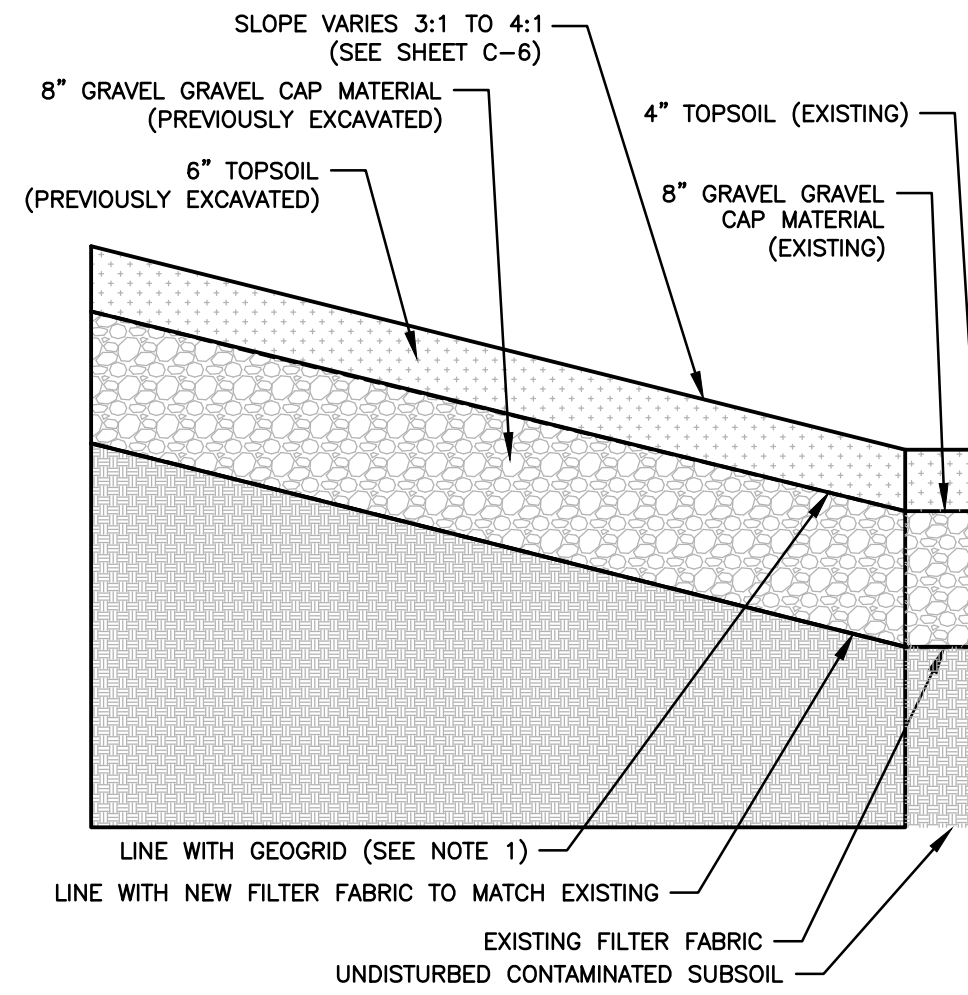
NTS



- NOTES:
- EXCAVATED MATERIALS TO BE STORED AND REUSED PER SOIL MANAGEMENT PLAN

**CAP EXCAVATION FOR BERMS**

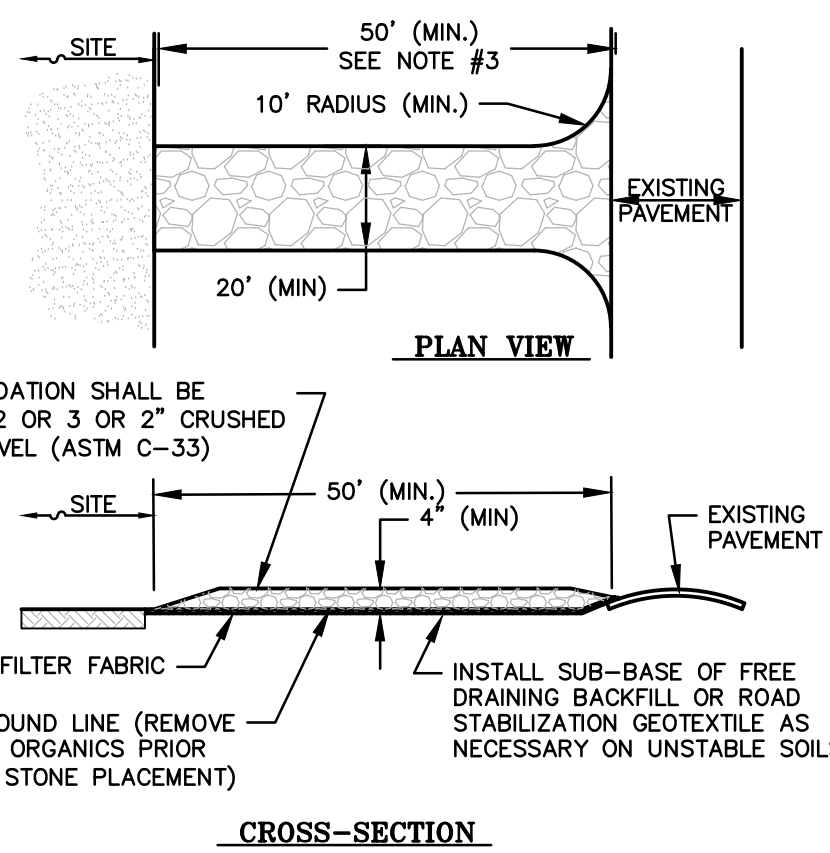
NTS



- NOTES:
- GEOGRID TO BE TENSAR MODEL BX1100, INSTALLED IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS.

**CAP ON CUT WASTE BERM DETAIL**

NTS



- NOTES:
- ENTRANCE WIDTH SHALL BE TWENTY (20) FEET WIDE MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
  - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PAVED SURFACES. PROVIDE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND. REPAIR ANY MEASURES USED TO TRAP SEDIMENT AS NEEDED. IMMEDIATELY REMOVE ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PAVED SURFACES. ROADS ADJACENT TO A CONSTRUCTION SITE SHALL BE LEFT CLEAN AT THE END OF EACH DAY.
  - 50 FEET MINIMUM WHERE THE SOILS ARE SANDS OR GRAVELS OR 100 FEET MINIMUM WHERE SOILS ARE CLAYS OR SILTS, EXCEPT WHERE THE TRAVELED LENGTH IS LESS THAN 50 OR 100 FEET RESPECTIVELY.

**TEMPORARY CONSTRUCTION EXIT**

NTS



SEAL:


REVISION	DATE	DESCRIPTION

CLIENT:  
**PROVIDENCE PARKS DEPARTMENT**  
1000 ELMWOOD AVENUE  
PROVIDENCE, RI 02907

PROJECT:  
**WOONASQUATUCKET ADVENTURE PARK PHASE II**  
GLENBRIDGE AVENUE  
PROVIDENCE, RHODE ISLAND

TITLE:

**DETAILS 2**

ISSUED FOR:	BID
DATE:	MAY 11, 2023
SCALE:	N/A
DRAWN BY:	AJP
CHECKED BY:	RLP
PROJECT NO:	365220361



**CODES AND STANDARDS**

- 2015 INTERNATIONAL BUILDING CODE (IBC) WITH WASHINGTON STATE AMENDMENTS
- ASCE 7-10 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
- ACI 318-14 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
- AISC 360-10 SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS
- AWS D1.1, 2010 STRUCTURAL WELDING CODE – STEEL
- AWS D1.3, 2008 STRUCTURAL WELDING CODE – SHEET STEEL
- WSDOT M41-10, 2018 STANDARD SPECIFICATION FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION

**GENERAL**

- CONTRACTOR SHALL BE RESPONSIBLE FOR MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES REQUIRED TO PERFORM THE WORK.
- CONTRACTOR-INITIATED CHANGES REQUIRE BOTH DESIGNER OF RECORD AND OWNER APPROVAL AND SHALL BE SUBMITTED IN WRITING TO THE OWNER REPRESENTATIVE FOR APPROVAL PRIOR TO FABRICATION OR CONSTRUCTION.
- DIMENSIONS AND DETAILS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO FABRICATION AND CONSTRUCTION. THIS INCLUDES, BUT IS NOT LIMITED TO, COORDINATING WITH THE CONTRACT DRAWINGS ON THE SIZE AND LOCATION OF OPENINGS THROUGH CONCRETE, VERIFYING SIZE AND LOCATION OF MECHANICAL AND ELECTRICAL OPENINGS WITH THE RESPECTIVE SUBCONTRACTOR, AS WELL AS COORDINATING INSERTS AND ATTACHMENTS FOR THE USE OF OTHER TRADES.
- DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. TYPICAL DETAILS AND NOTES SHOWN ON DRAWINGS SHALL APPLY UNLESS NOTED OTHERWISE. TYPICAL DETAILS MAY NOT NECESSARILY BE INDICATED ON THE PLANS BUT SHALL STILL APPLY AS SHOWN OR DESCRIBED IN THE DETAILS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CHOOSE THE APPROPRIATE TYPICAL DETAIL FROM THOSE PROVIDED. THE CONTRACTOR SHALL SUBMIT PROPOSED ALTERNATE DETAILS TO THOSE PROVIDED WITH RELATED CALCULATIONS TO THE ENGINEER FOR APPROVAL PRIOR TO DETAILING OR USE.
- SHOP DRAWING REVIEW: BY SUBMITTING THE SHOP DRAWINGS, THE CONTRACTOR REPRESENTS THAT THEY HAVE DETERMINED AND VERIFIED MATERIALS, FIELD MEASUREMENTS, AND RELATED FIELD CONSTRUCTION CRITERIA (MEANS, METHODS, TECHNIQUES, SEQUENCES, OPERATIONS OF CONSTRUCTION, AND SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL THERETO), AND THAT THE CONTRACTOR HAS CHECKED AND COORDINATED THE INFORMATION CONTAINED WITHIN THE SUBMITTAL WITH THE REQUIREMENTS OF THE WORK AND THE CONTRACT DOCUMENTS. REVIEW BY THE ENGINEER SHALL NOT RELIEVE THE CONTRACTOR FROM FULL RESPONSIBILITY FOR THE ACCURACY OF DIMENSIONS AND DETAILS. SUCH REVIEW SHALL NOT CONSTITUTE ACCEPTANCE BY THE ENGINEER OF THE CORRECTNESS OR ADEQUACY OF SUCH SUBMITTALS, NOR A WARRANTY THAT THE SUBMITTALS SATISFY THE REQUIREMENTS OF THE CONTRACT.

**DEMOLITION AND SHORING**

- THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS BEFORE COMMENCING ANY DEMOLITION. THE CONTRACTOR SHALL VERIFY THE EXTENT AND LOCATIONS OF SITE UTILITIES. LOCATIONS OF EXISTING FOUNDATIONS AND UTILITIES KNOWN TO THE ENGINEER ARE INDICATED ON THE DRAWINGS. REPORT ANY DISCREPANCIES OR ENCOUNTERED OBSTRUCTIONS TO THE OWNER'S REPRESENTATIVE IMMEDIATELY.
- THE CONTRACTOR SHALL DESIGN AND INSTALL SHORING TO SUPPORT EXISTING CONSTRUCTION (VERTICALLY AND LATERALLY) AS REQUIRED AND IN A MANNER SUITABLE TO THE WORK SEQUENCES COORDINATED WITH THE OTHER DISCIPLINES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL PREPARE A PLAN TO MONITOR DAILY THE SHORING SYSTEMS FOR MOVEMENT AND SUBMIT IT FOR REVIEW BY THE OWNER'S REPRESENTATIVE.
- EXISTING STRUCTURAL MEMBERS SHALL REMAIN UNLESS NOTED OTHERWISE ON THE PLANS. SAWCUTTING, IF AND WHERE USED, SHALL NOT CUT EXISTING REINFORCING THAT IS TO REMAIN. DEMOLITION DEBRIS SHALL NOT BE ALLOWED TO DAMAGE OR OVERLOAD THE EXISTING STRUCTURE.
- OPENINGS THROUGH EXISTING WALLS, SLABS, AND BEAMS SHALL BE ACCOMPLISHED BY SAWCUTTING OR CORING WHEREVER POSSIBLE AND AS SHOWN. WHEN SAWCUTTING, CORNERS SHALL INITIALLY BE CORED TO PREVENT OVERCUTTING. SMALL ROUND OPENINGS SHALL BE ACCOMPLISHED BY DRILLING, IF POSSIBLE.
- THE CONTRACTOR SHALL DESIGN AND INSTALL SHORING TO SUPPORT NEW CONSTRUCTION (VERTICALLY AND LATERALLY) UNTIL STRUCTURAL COMPONENTS HAVE BEEN CONNECTED AS SHOWN ON THE STRUCTURAL DRAWINGS.
- THE CONTRACTOR SHALL SUBMIT SHORING DRAWINGS AND CALCULATIONS STAMPED AND SIGNED BY A REGISTERED STRUCTURAL ENGINEER. DRAWINGS SHALL SHOW SIZE, LAYOUT, CONNECTIONS, MATERIAL DESIGNATION, METHOD OF INSTALLATION, AND ACCESSORIES OF SHORING MEMBERS.

**DESIGN LOADS**

**DEAD LOADS:**  
 WEIGHT OF MATERIALS OF CONSTRUCTION AND PERMANENT EQUIPMENT.

**LIVE LOADS**  
**SLAB-ON-GRADE** 125 PSF

**RISK CATEGORY** II

**STRUCTURAL CONCRETE**

- CONCRETE WORK SHALL CONFORM TO REQUIREMENTS OF ACI 301, SPECIFICATIONS FOR STRUCTURAL CONCRETE.
- DESIGN MIXES FOR THE FOLLOWING CLASSES OF CONCRETE, SHALL BE PROPORTIONED TO PROVIDE THE SPECIFIED COMPRESSIVE STRENGTH.
  - FOUNDATIONS 4,000 PSI
  - SLAB-ON-GROUND 4,000 PSI
  - WALLS 5,000 PSI
- STEEL REINFORCEMENT SHALL CONFORM TO THE FOLLOWING STANDARDS AND SPECIFIED STRENGTH.
  - DEFORMED BARS (A615) Fy = 60,000 PSI
  - DEFORMED BARS (A706) Fy = 60,000 PSI
  - WELDED WIRE REINF (A1064) Fy = 60,000 PSI
- TYPICAL DETAILS OF REINFORCEMENT SUCH AS HOOKS, BEND DIAMETERS, ETC. SHALL BE IN ACCORDANCE WITH ACI SP-66 – "ACI DETAILING MANUAL".
- REINFORCEMENT MARKED "CONT" (CONTINUOUS) SHALL BE SPLICED BY LAPPING OR WITH MECHANICAL CONNECTORS.
- LAP LENGTH NOTES:
  - SEE DEVELOPMENT AND LAP SPLICE LENGTH SCHEDULE FOR REINFORCED CONCRETE
  - LAP SPLICES OF WELDED WIRE REINFORCEMENT SHALL HAVE A LENGTH OF LAP EQUAL TO THE GREATER OF 1.5X WIRE DEVELOPMENT LENGTH OR ONE CROSSWIRE SPACING PLUS 2 INCHES.
  - MECHANICAL CONNECTORS SHALL HAVE A MINIMUM CAPACITY OF 1.25 X YIELD STRENGTH OF THE BAR.
  - IN MEMBERS DESIGNATED AS PART OF THE SEISMIC-FORCE-RESISTING-SYSTEM, MECHANICAL CONNECTORS SHALL HAVE A MINIMUM CAPACITY EQUAL TO THE TENSILE STRENGTH OF THE BAR.
- MECHANICAL REBAR ANCHORS (TERMINATORS) SHALL BE THREADED DEVICES WITH A CAPACITY GREATER THAN THE YIELD STRENGTH OF THE BAR.
- REFER TO LANDSCAPE ARCHITECTURAL, ELECTRICAL, AND STRUCTURAL DRAWINGS FOR SURFACE FEATURES AND INSERTS, TO BE CAST IN CONCRETE AND FOR LOCATIONS OF PENETRATIONS FOR PIPES, DUCTS, CONDUITS, ETC.
- CONCRETE COVER FOR REINFORCEMENT STEEL IN CAST-IN-PLACE NON-PRESTRESSED CONCRETE MEMBERS SHALL BE AS FOLLOWS, UNO:

CONCRETE EXPOSURE	MEMBER	REINFORCEMENT	SPECIFIED COVER (INCHES)
CAST AGAINST AND PERMANENTLY IN CONTACT WITH GROUND	ALL	ALL	3
EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	ALL	#6 THRU #18 BAR	2
		#5 BAR, W31 OR D31 WIRE AND SMALLER	1-1/2
NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	SLABS, JOISTS AND WALLS	#14 AND #18 BARS	1-1/2
	BEAMS, COLUMNS, PEDESTALS, AND TENSION TIES	PRIMARY REINFORCEMENT, STIRRUPS, TIES, SPIRALS AND HOOPS	3/4 1-1/2

**ANCHORAGE TO CONCRETE AND MASONRY**

- ANCHOR CAPACITY USED IN DESIGN SHALL BE BASED ON THE TECHNICAL DATA PUBLISHED IN THE ICC APPROVAL REPORT. SUBSTITUTION REQUESTS MUST INCLUDE ICC ESR REPORT SHOWING COMPLIANCE WITH RELEVANT BUILDING CODE AND INSTALLATION CATEGORY AND BE APPROVED IN WRITING BY THE OWNER'S REPRESENTATIVE/ENGINEER OF RECORD PRIOR TO USE.
- INSTALL ANCHORS PER THE MANUFACTURER INSTRUCTIONS, AS INCLUDED IN THE ANCHOR PACKAGING.
- ANCHOR CAPACITY IS DEPENDENT UPON SPACING BETWEEN ADJACENT ANCHORS AND EDGE DISTANCE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.
- EXISTING CONSTRUCTION: EXISTING REINFORCING BARS IN THE STRUCTURE MAY CONFLICT WITH SPECIFIC ANCHOR LOCATIONS. UNLESS NOTED OTHERWISE ON THE DRAWINGS, THE CONTRACTOR SHALL LOCATE THE POSITION OF THE EXISTING REINFORCING BARS AND AVOID CUTTING.
- EXCEPT WHERE INDICATED ON THE DRAWINGS, POST-INSTALLED ANCHORS SHALL CONSIST OF THE FOLLOWING ANCHOR TYPES.

**DRILLED-IN SCREW ANCHORS INTO CONCRETE**

- HILTI KWIK HUS-EZ SCREW ANCHORS PER ICC ESR-3027
- SIMPSON TITEN HD SCREW ANCHOR PER ICC ESR-2713
- DEWALT WEDGE-BOLT+ SCREW ANCHOR PER ICC ESR-2526

**DRILLED-IN EXPANSION ANCHORS INTO CONCRETE**

- HILTI KWIK-BOLT TZ EXPANSION ANCHOR PER ICC ESR-1917
- SIMPSON STRONG BOLT 2 WEDGE ANCHOR PER ICC ESR-3037
- DEWALT POWER-STUD+ SD1 MECHANICAL ANCHORS PER ICC ESR-2818

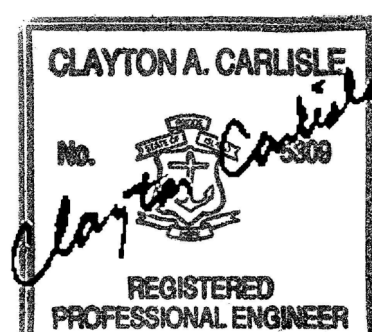
**ADHESIVE ANCHORS AND REBAR DOWELING INTO CONCRETE**

- HILTI "HIT-HY 200" ADHESIVE ANCHOR SYSTEM PER ICC ESR-3187
- SIMPSON SET-XP ADHESIVE ANCHOR SYSTEM PER ICC ESR-2508
- DEWALT PE1000+ ADHESIVE ANCHOR PER ICC ESR-2583
- STEEL ANCHOR ELEMENTS SHALL BE ASTM F1554 GRADE 55 THREADED ROD OR STEEL REINFORCEMENT PER DRAWINGS

**DRAINAGE NOTE**

- CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE ACROSS STAIR TREADS AND TERRACES. SLOPE SHALL BE 2%.

SEAL:



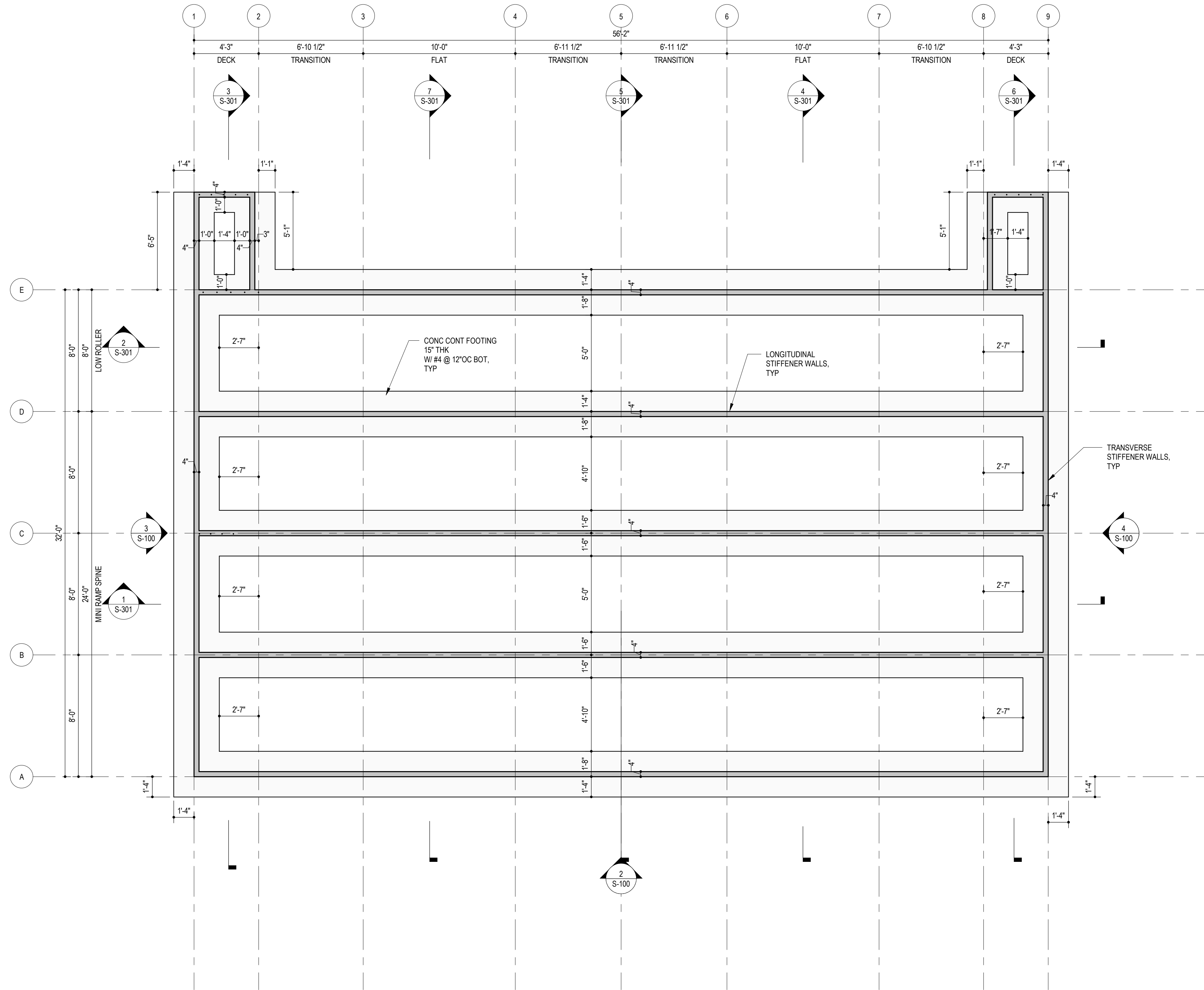
REVISION	DATE	DESCRIPTION

CLIENT:  
**PROVIDENCE PARKS & RECREATION DEPT.**  
 1000 ELMWOOD AVENUE  
 PROVIDENCE, RI 02907

PROJECT:  
**WOONASQUATUCKET ADVENTURE PARK PHASE II**  
 GLENBRIDGE AVENUE  
 PROVIDENCE, RHODE ISLAND

TITLE:  
**GENERAL NOTES**

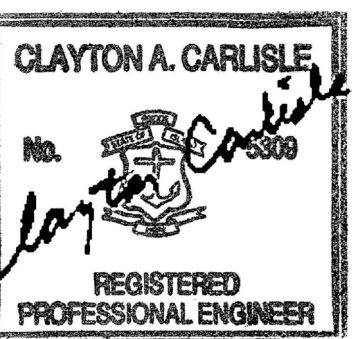
ISSUED FOR: BID  
 DATE: MAY 11, 2023  
 SCALE:  
 DRAWN BY: DDV  
 CHECKED BY: DEW  
 PROJECT NO: 3652220361



**NOTES:**

1. ALL ELEVATIONS ARE BASED ON PROJECT DATUM 0.00 FT = + 42.5 FT MSL, CORRESPONDING TO TOP OF CONCRETE OF THE ROLLING FLATS
2. CONTRACTOR TO VERIFY ALL ELEVATIONS PRIOR TO COMMENCING WORK
3. SEE LANDSCAPE ARCHITECTURE AND CIVIL DRAWINGS FOR BERMING EARTHWORK SURROUNDING STRUCTURE
4. MINIMUM FOOTING DEPTH SHALL BE 40" BELOW FINISHED GRADE

SEAL:



REVISION	DATE	DESCRIPTION

CLIENT:

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PROVIDENCE, RI 02907

PROJECT:

**WOONASQUATUCKET ADVENTURE PARK PHASE II**  
GLENBRIDGE AVENUE  
PROVIDENCE, RHODE ISLAND

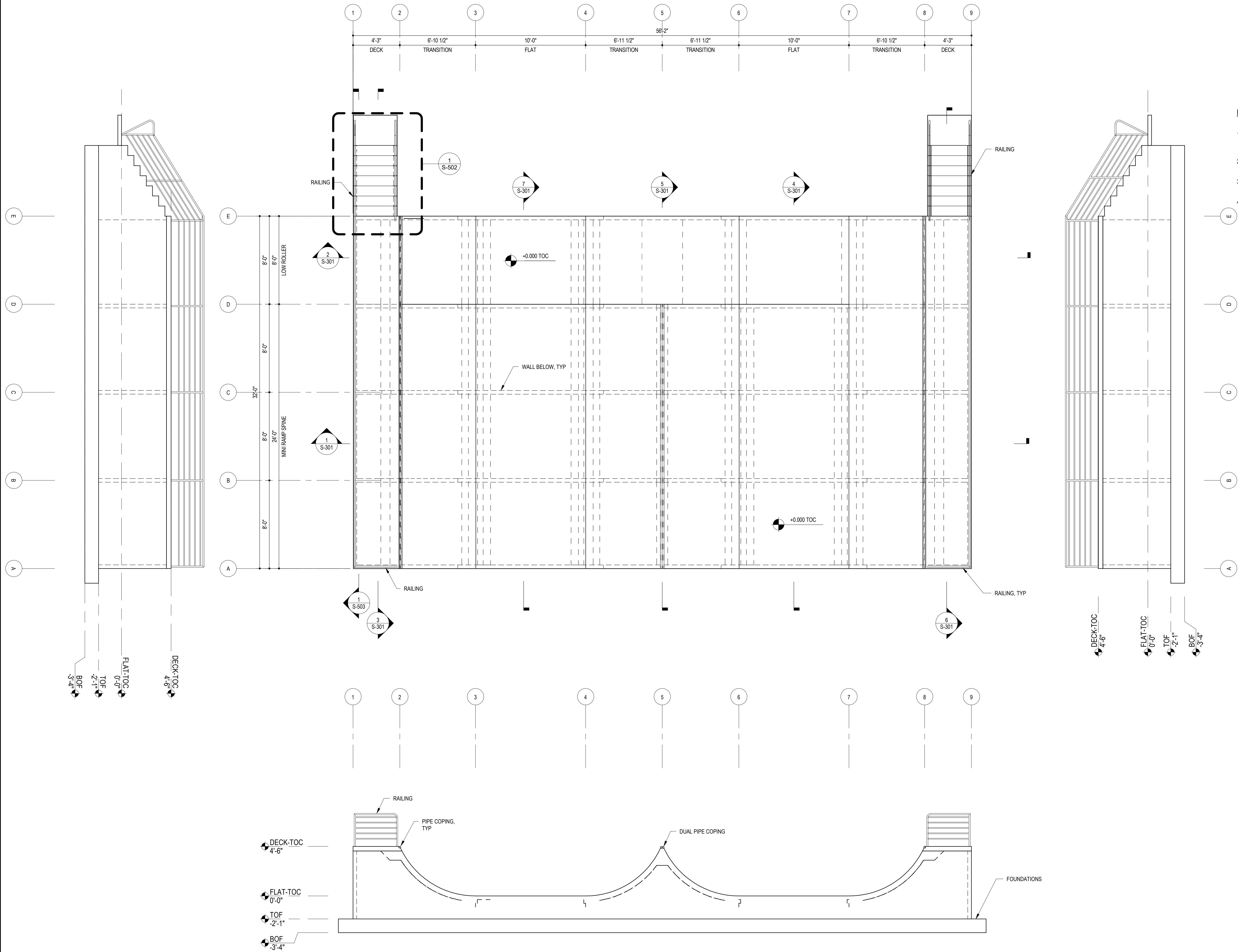
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ISSUED FOR: BID  
DATE: MAY 11, 2023  
SCALE: 1/4" = 1'-0"  
DRAWN BY: DDV  
CHECKED BY: DEW  
PROJECT NO: 3652220361

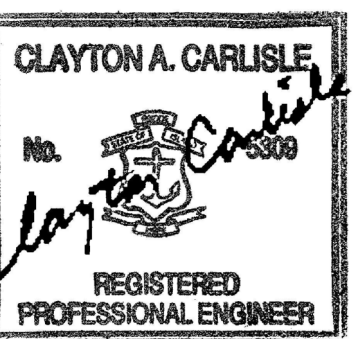
**S-090**

**NOTES:**

1. ALL ELEVATIONS ARE BASED ON PROJECT DATUM 0.00 FT = +42.5 FT MSL, CORRESPONDING TO TOP OF CONCRETE OF THE ROLLING FLATS
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4. MINIMUM FOOTING DEPTH SHALL BE 40" BELOW FINISHED GRADE



SEAL:



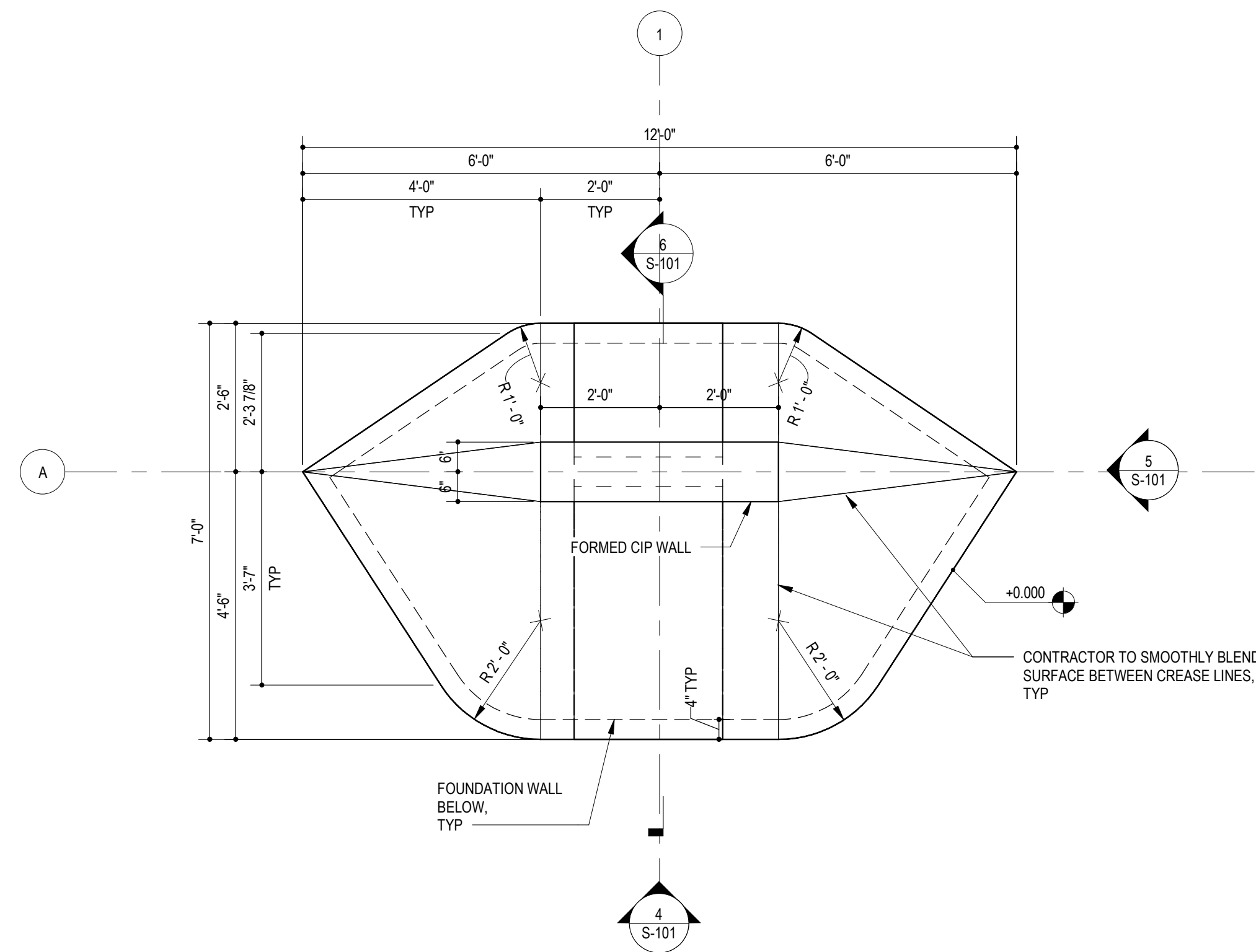
REVISION	DATE	DESCRIPTION

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PROVIDENCE, RI 02907

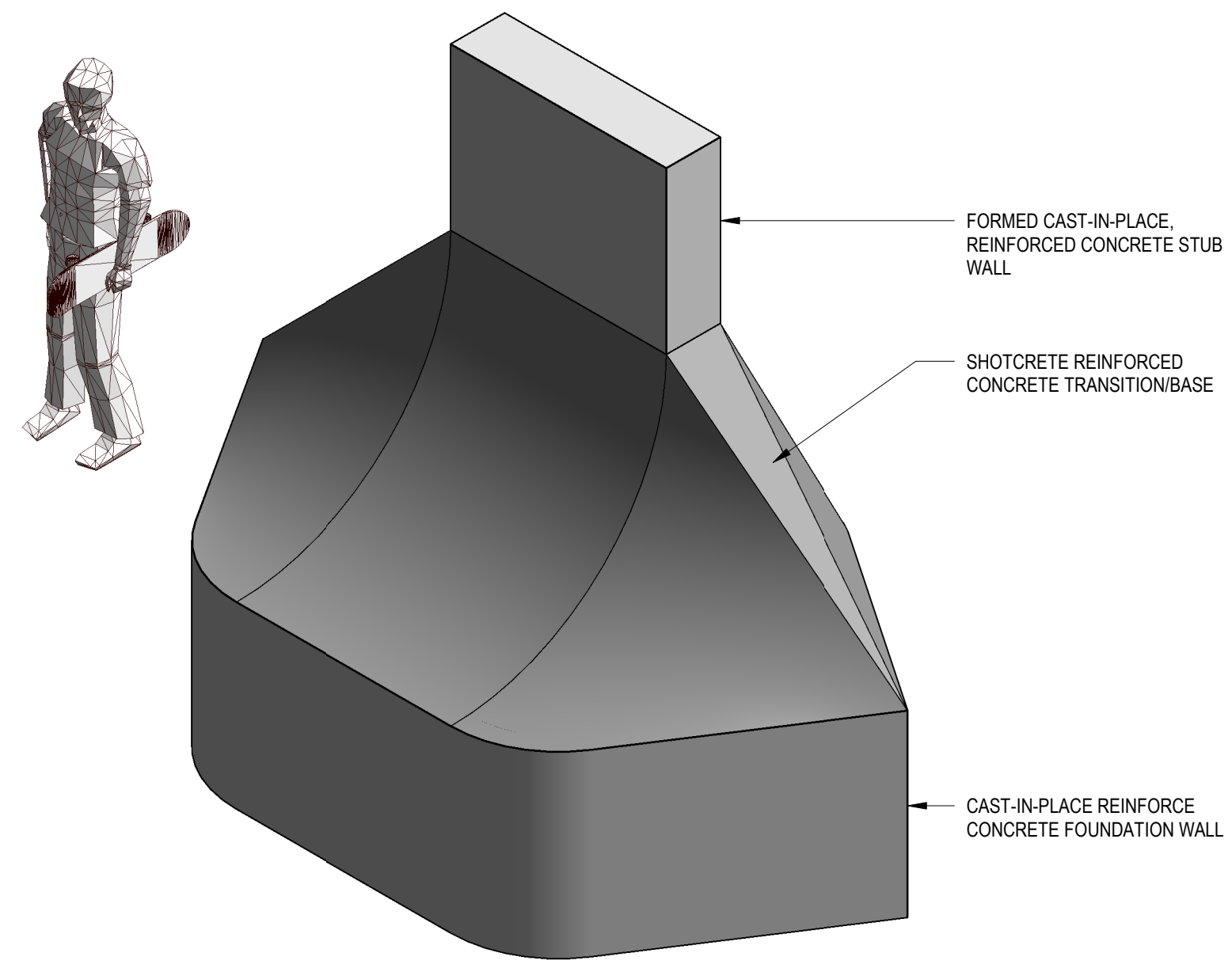
PROJECT:  
**WOONASQUATUCKET ADVENTURE PARK PHASE II**  
GLENBRIDGE AVENUE  
PROVIDENCE, RHODE ISLAND

TITLE:  
**PLAN & ELEVATIONS**

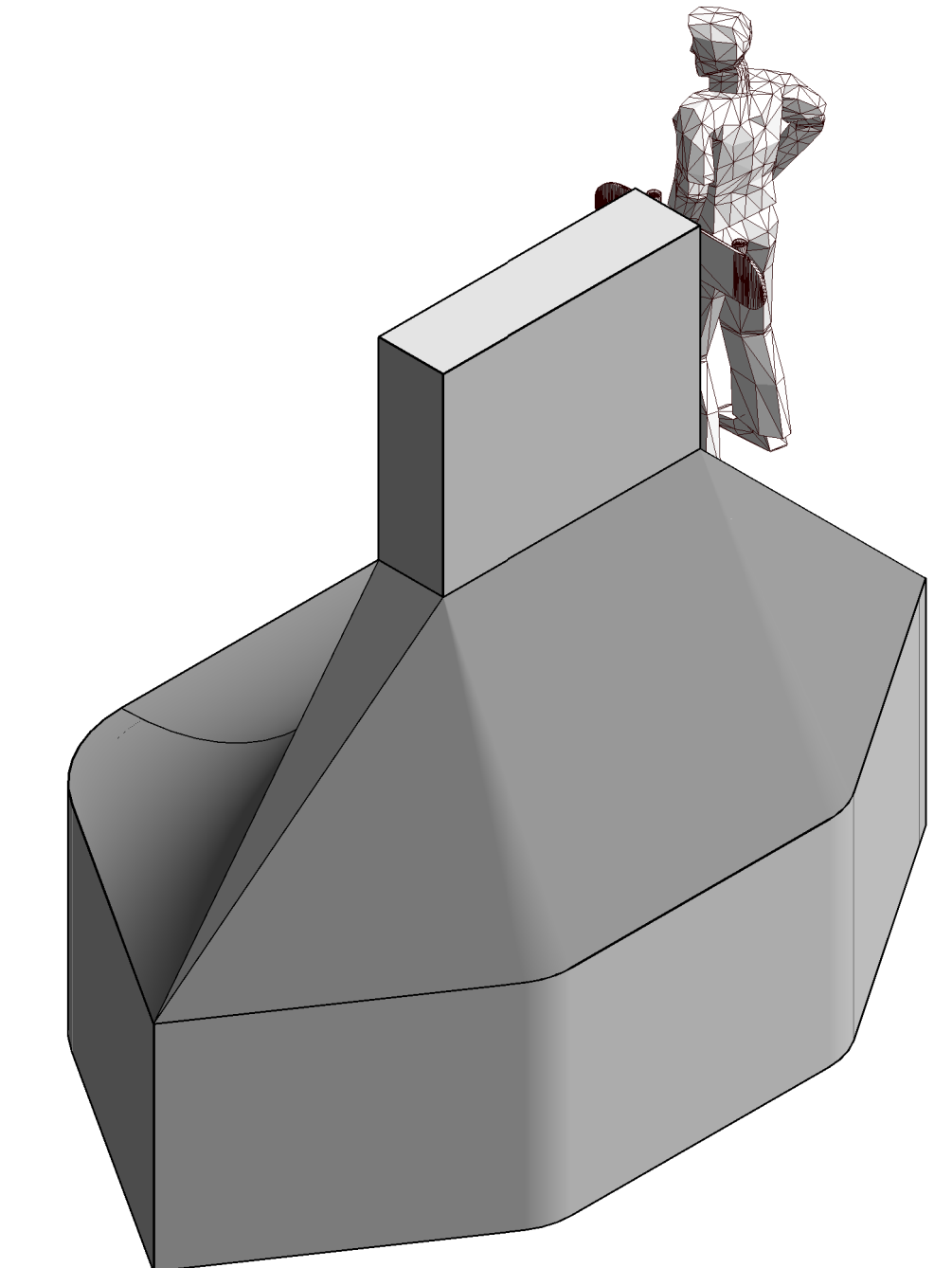
ISSUED FOR: BID  
DATE: MAY 11, 2023  
SCALE: 1/4" = 1'-0"  
DRAWN BY: DDV  
CHECKED BY: DEW  
PROJECT NO: 3652220361



**1 FLOOR PLAN**  
SCALE: 1/2" = 1'-0"



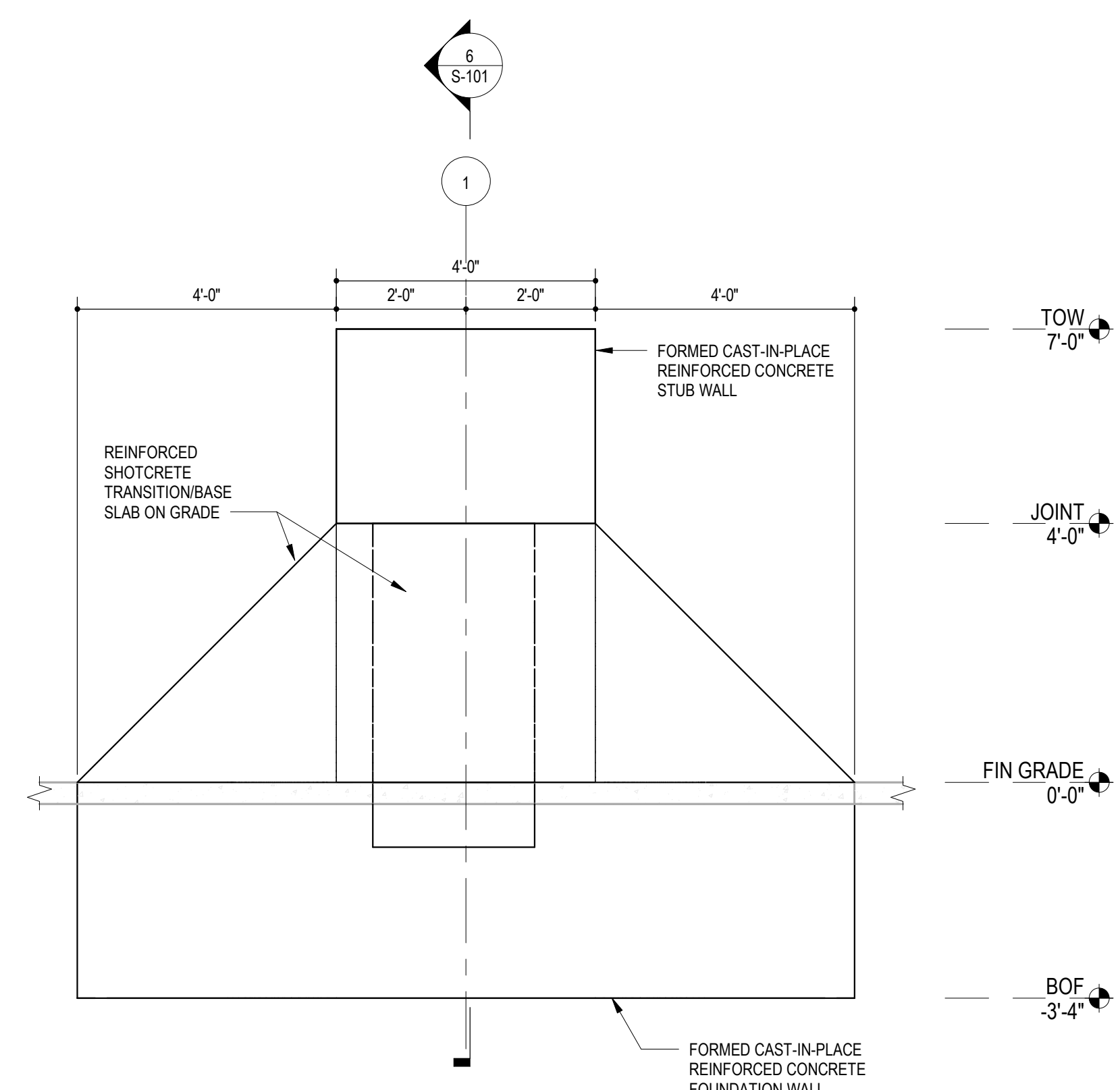
**2 ISOMETRIC-FRONT**  
SCALE:



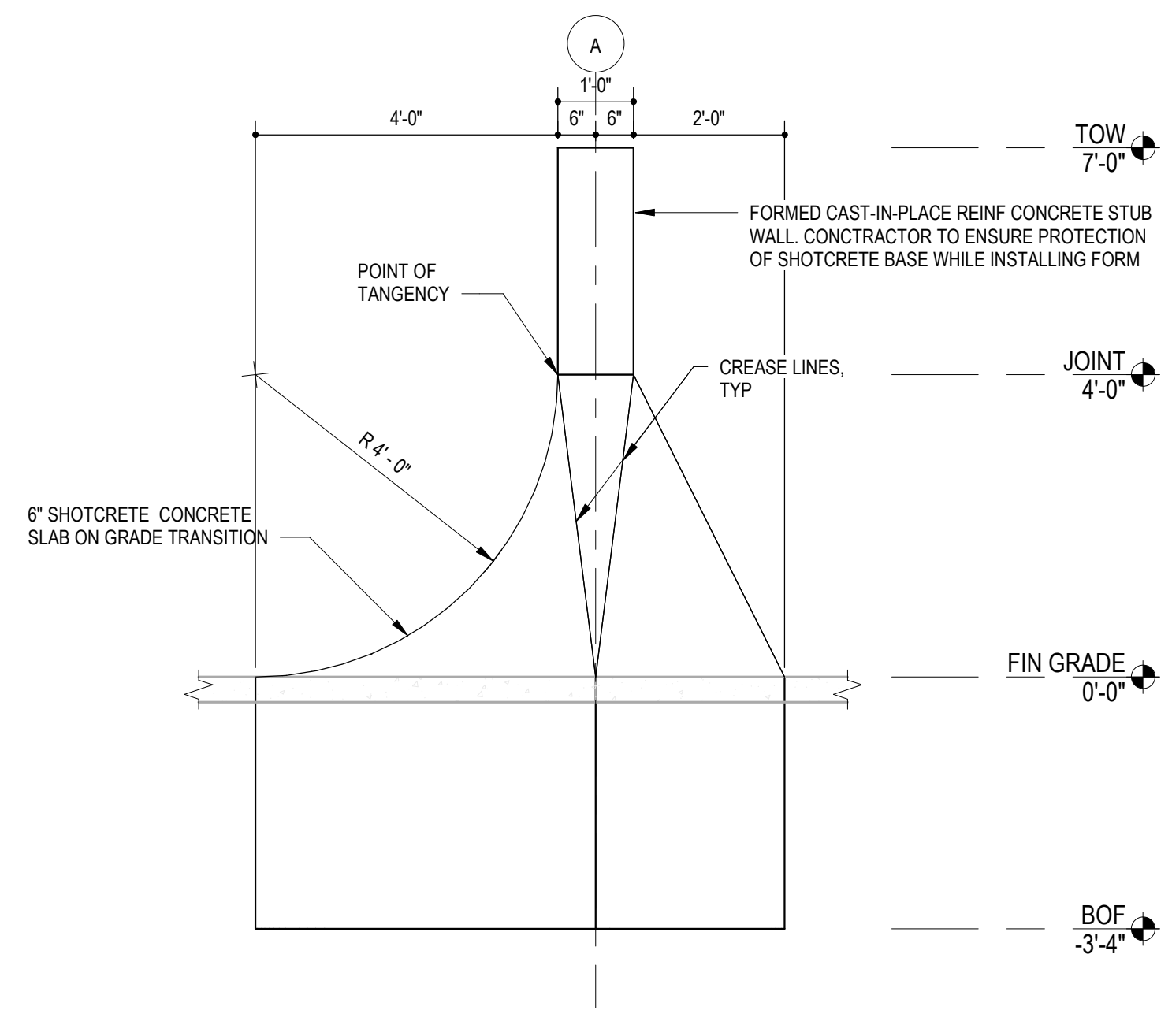
**3 ISOMETRIC-BACK**  
SCALE:

**NOTES:**

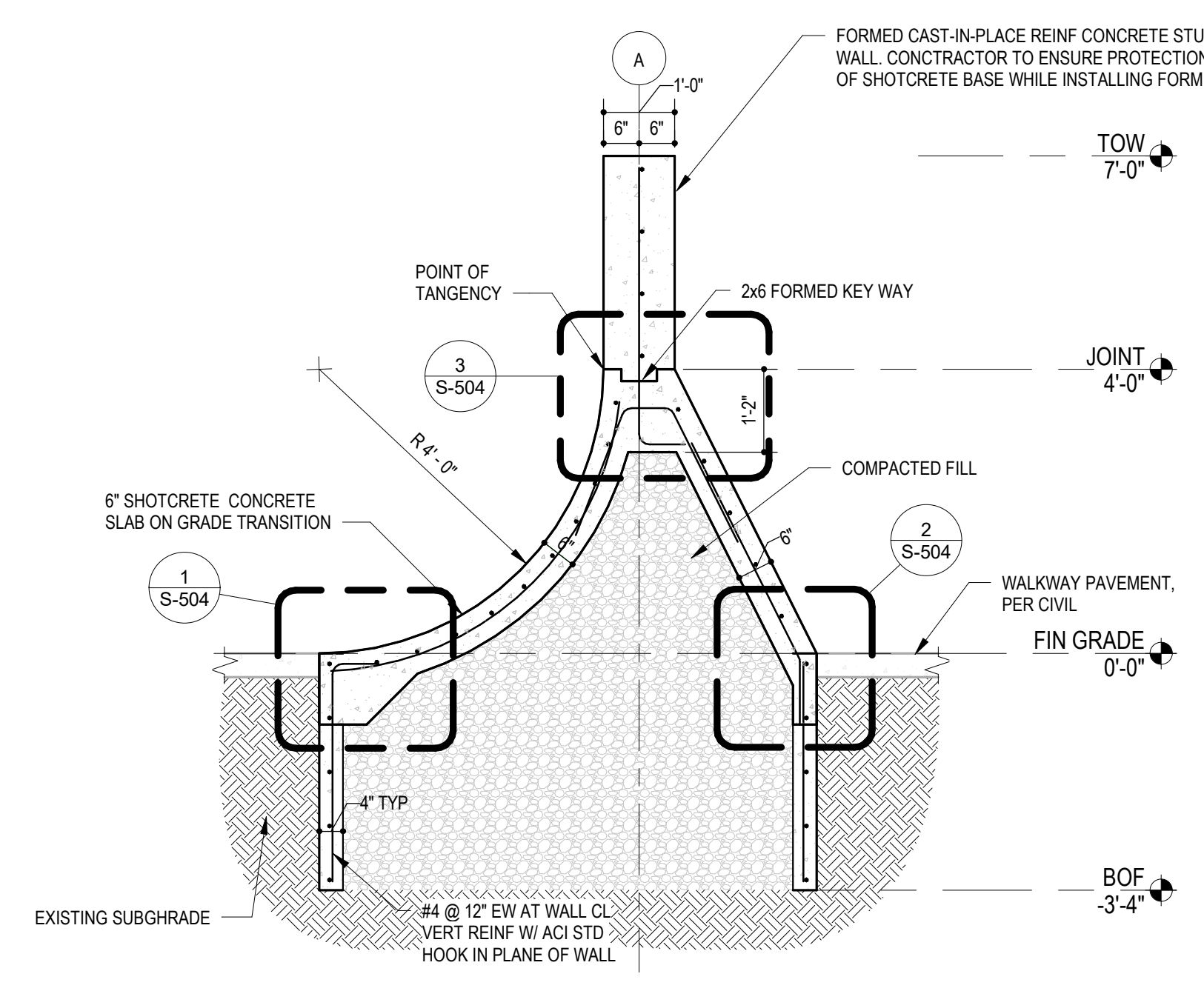
1. ALL ELEVATIONS ARE BASED ON PROJECT DATUM 0.00 FT = + 42.5 FT MSL, CORRESPONDING TO TOP OF CONCRETE OF THE ROLLING FLATS
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4. MINIMUM FOOTING DEPTH SHALL BE 4'-0" BELOW FINISHED GRADE



**4 ELEVATION - FRONT**  
SCALE: 1/2" = 1'-0"

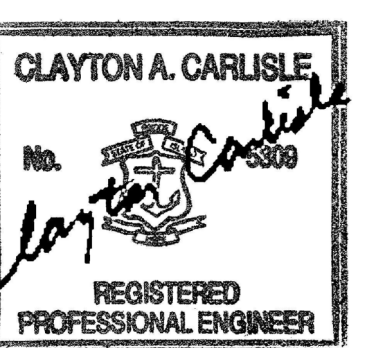


**5 ELEVATION - SIDE**  
SCALE: 1/2" = 1'-0"



**6 SECTION**  
SCALE: 1/2" = 1'-0"

SEAL:



REVISION	DATE	DESCRIPTION

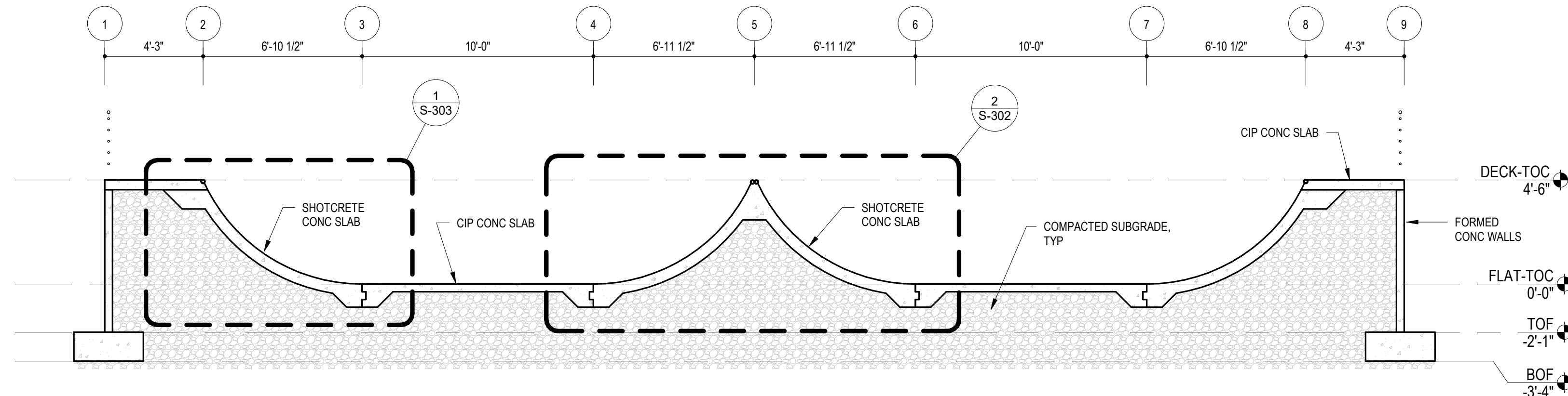
CLIENT:  
**PROVIDENCE PARKS & RECREATION DEPT.**  
1000 ELMWOOD AVENUE  
PROVIDENCE, RI 02907

PROJECT:  
**WOONASQUATUCKET ADVENTURE PARK PHASE II**  
GLENBRIDGE AVENUE  
PROVIDENCE, RHODE ISLAND

TITLE:  
**MINI RAMP**

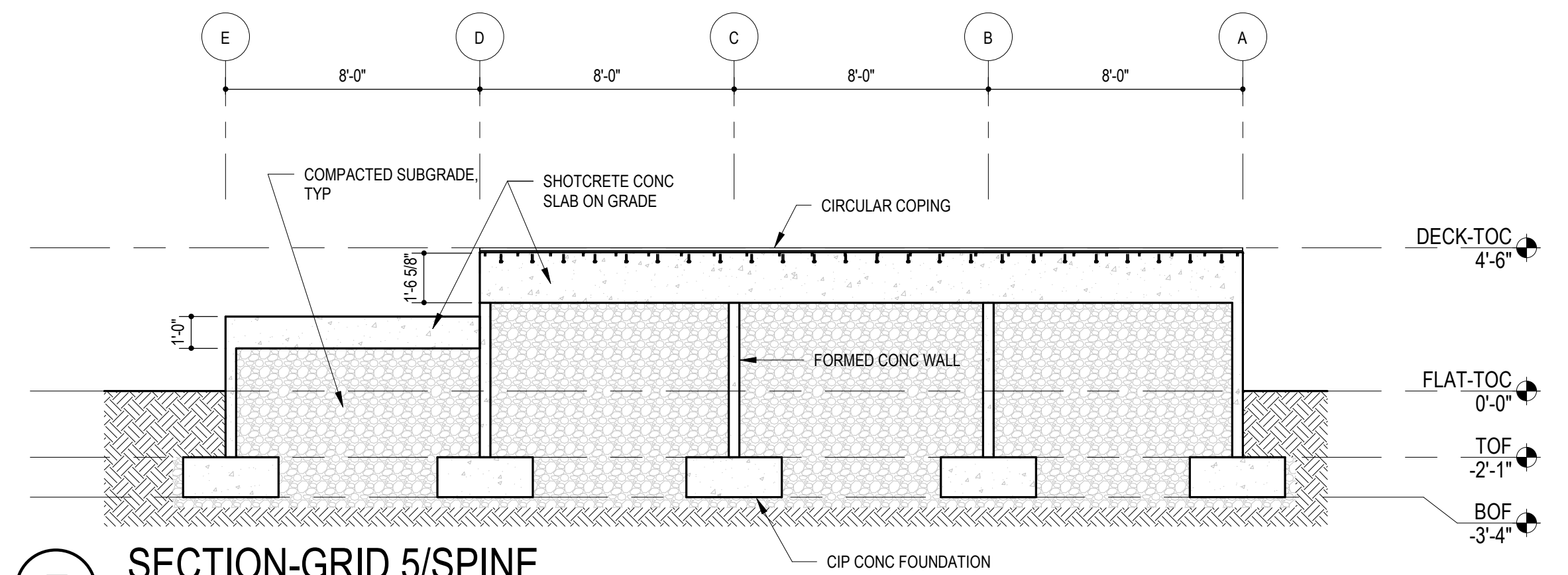
ISSUED FOR:	BID
DATE:	MAY 11, 2023
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DRAWN BY:	DDV
CHECKED BY:	DEW
PROJECT NO:	3652220361

**S-101**



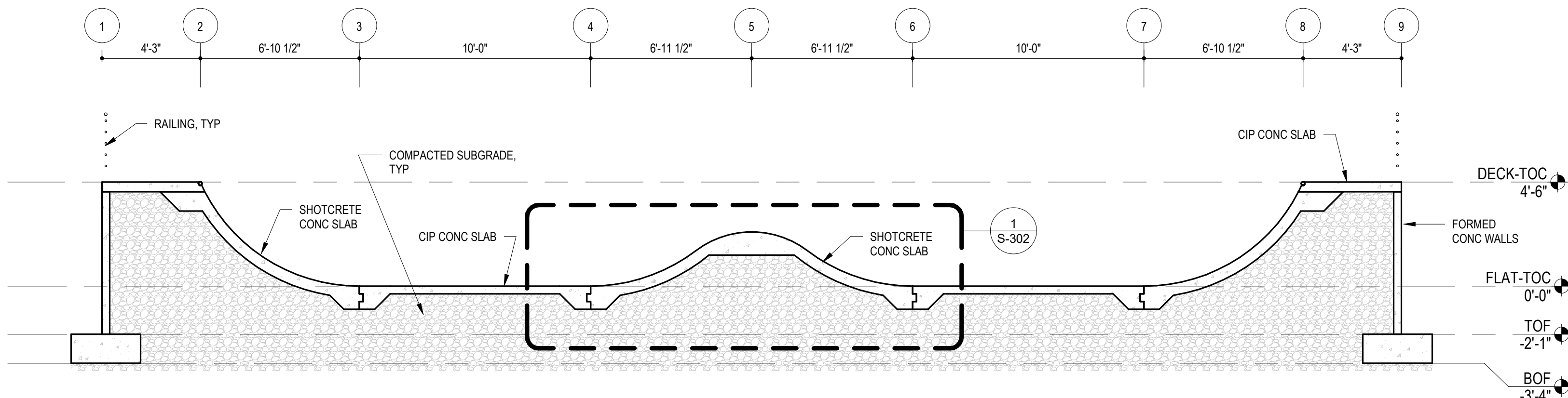
**1** SECTION-THROUGH MINI SPINE

SCALE: 1/4" = 1'-0"



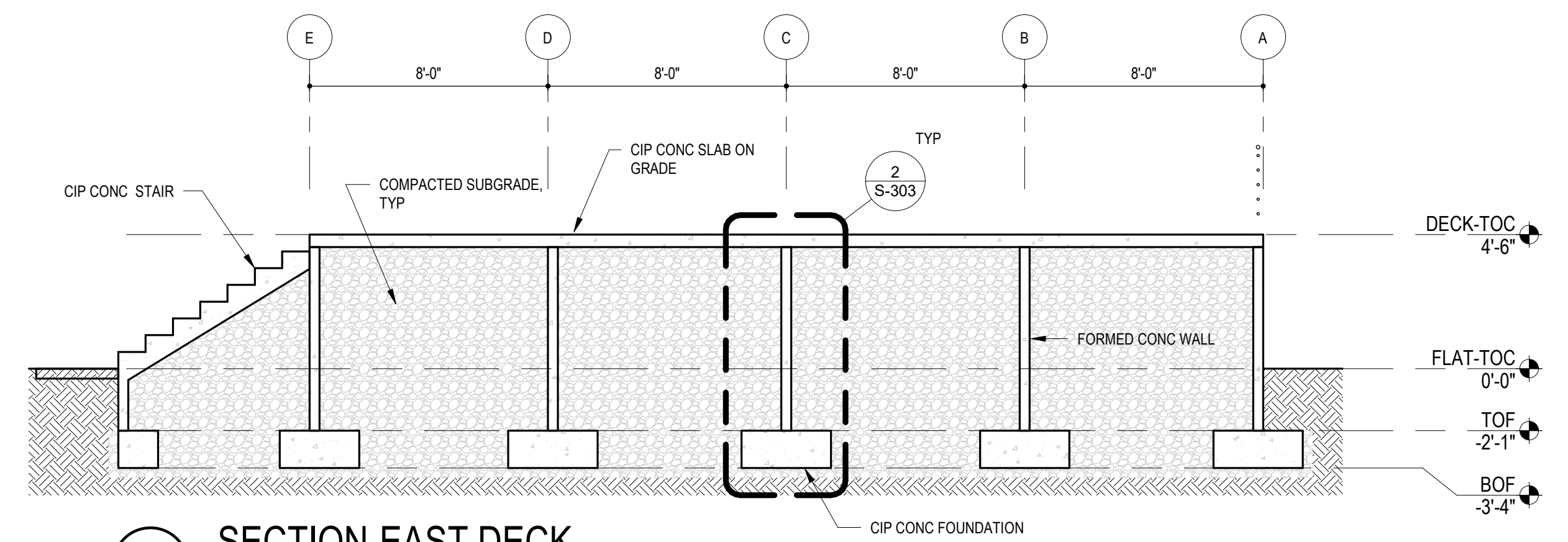
**5** SECTION-GRID 5/SPINE

SCALE: 1/4" = 1'-0"



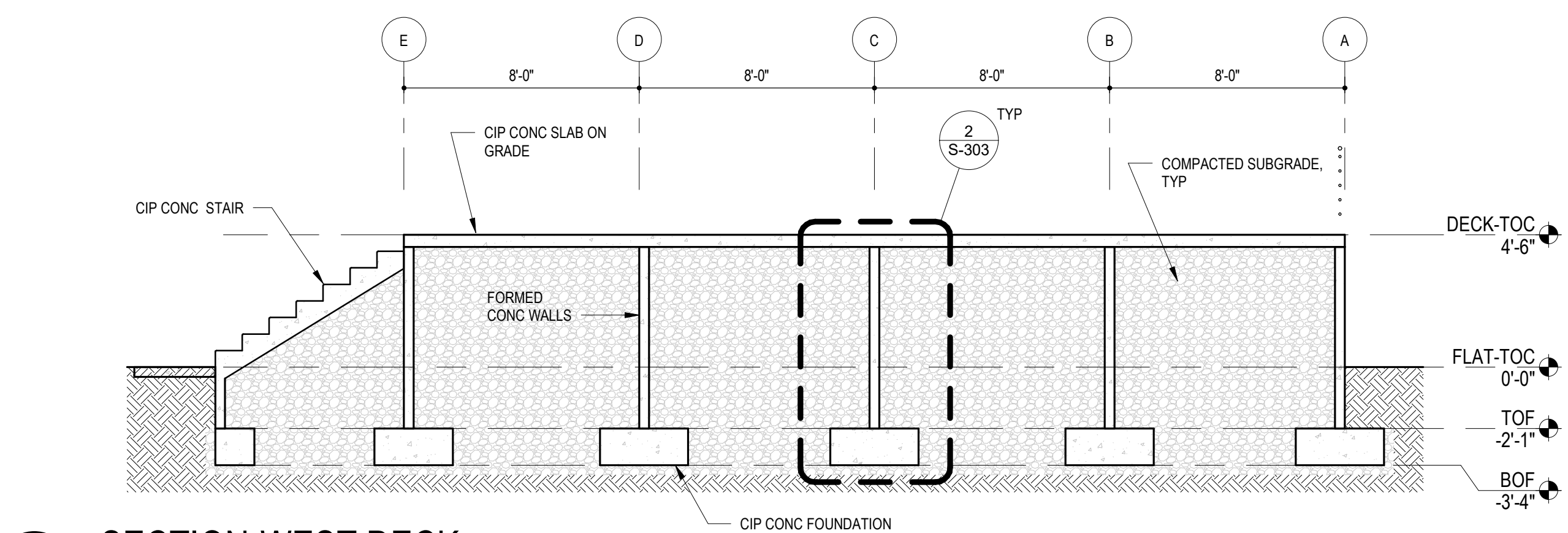
**2** SECTION-LOW ROLLER

SCALE: 1/4" = 1'-0"



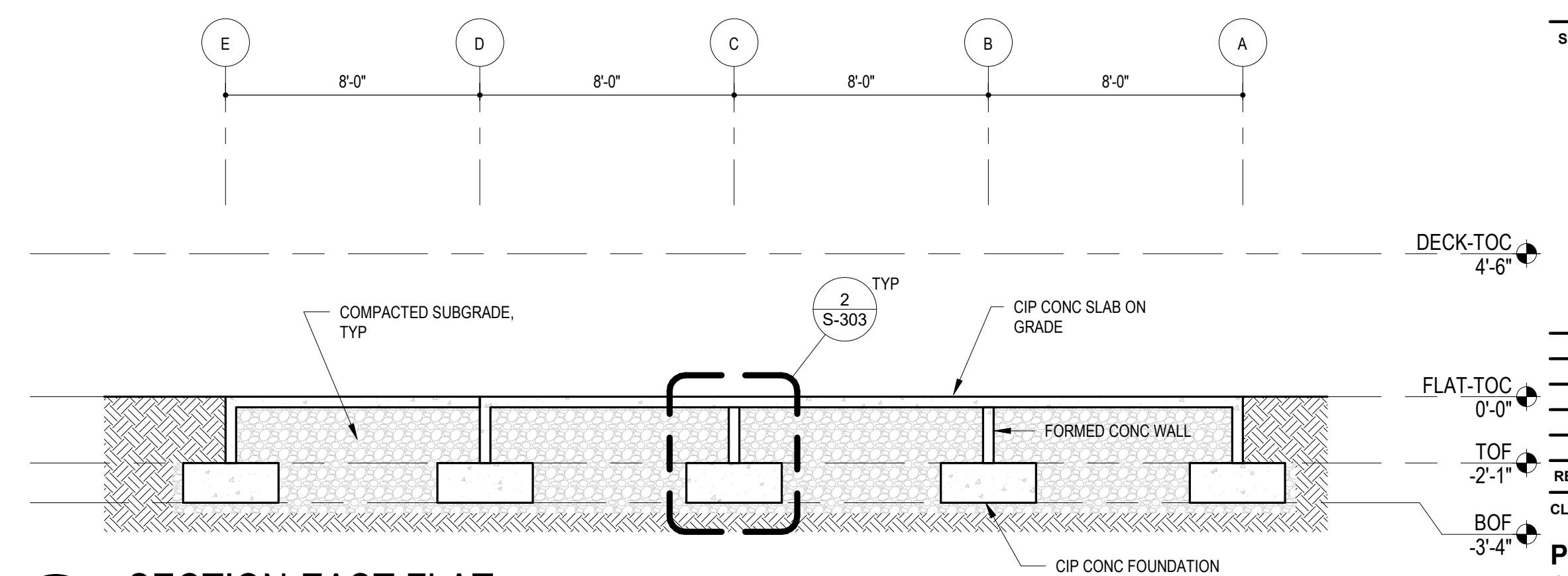
**6** SECTION-EAST DECK

SCALE: 1/4" = 1'-0"



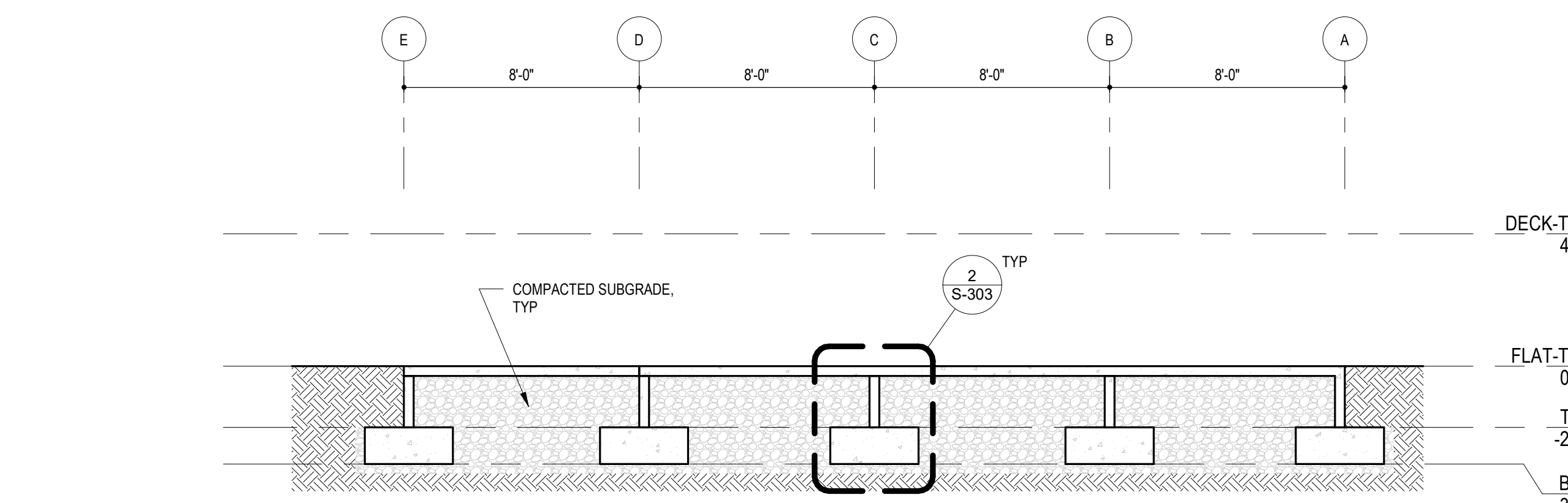
**3** SECTION-WEST DECK

SCALE: 1/4" = 1'-0"



**7** SECTION-EAST FLAT

SCALE: 1/4" = 1'-0"



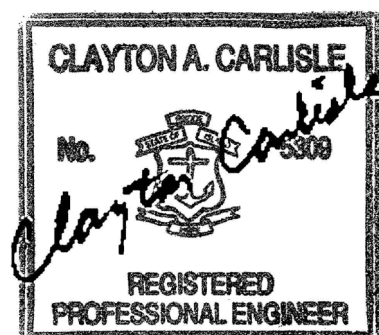
**4** SECTION-WEST FLAT

SCALE: 1/4" = 1'-0"

**NOTES:**

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- SEE LANDSCAPE ARCHITECTURE AND CIVIL DRAWINGS FOR BERMING EARTHWORK SURROUNDING STRUCTURE
- MINIMUM FOOTING DEPTH SHALL BE 40" BELOW FINISHED GRADE

SEAL:



REVISION	DATE	DESCRIPTION

CLIENT:

**PROVIDENCE PARKS & RECREATION DEPT.**  
1000 ELMWOOD AVENUE  
PROVIDENCE, RI 02907

PROJECT:

**WOONASQUATUCKET ADVENTURE PARK PHASE II**  
GLENBRIDGE AVENUE  
PROVIDENCE, RHODE ISLAND

TITLE:

**SECTIONS**

ISSUED FOR: BID

DATE: MAY 11, 2023

SCALE: 1/4" = 1'-0"

DRAWN BY: DDV

CHECKED BY: DEW

PROJECT NO: 365220361

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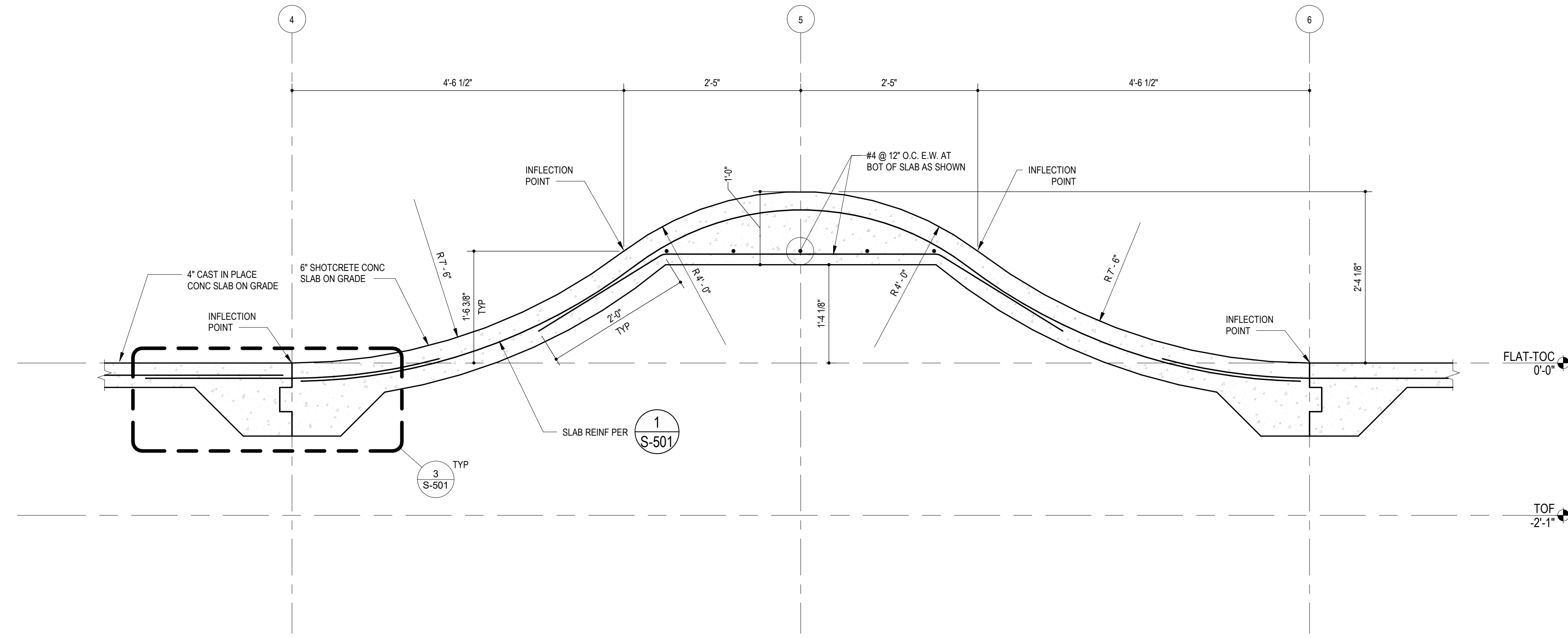
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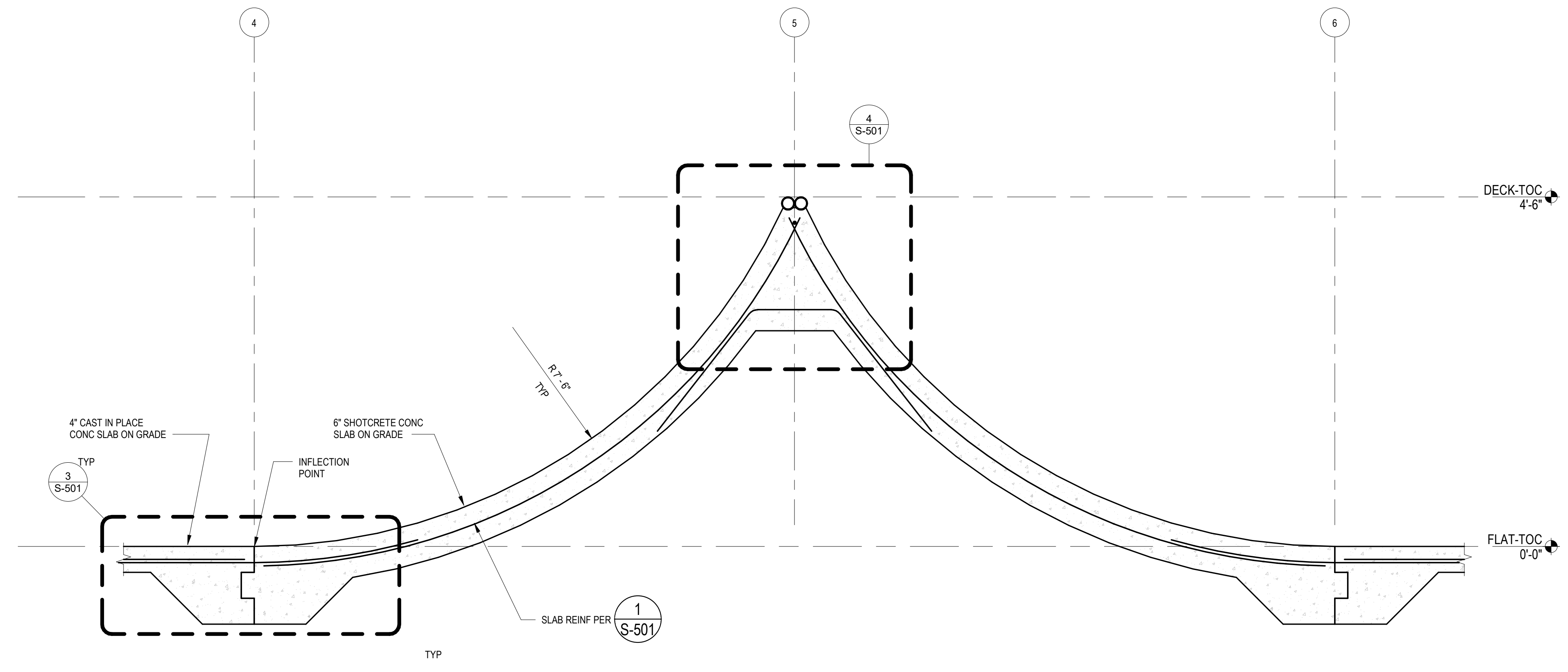
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**S-301**



- NOTES:**
- ALL ELEVATIONS ARE BASED ON PROJECT DATUM 0.00  
FT = + 42.5 FT MSL, CORRESPONDING TO TOP OF  
CONCRETE OF THE ROLLING FLATS
  - CONTRACTOR TO VERIFY ALL ELEVATIONS PRIOR TO  
COMMENCING WORK
  - SEE LANDSCAPE ARCHITECTURE AND CIVIL DRAWINGS  
FOR BERMING EARTHWORK SURROUNDING STRUCTURE
  - MINIMUM FOOTING DEPTH SHALL BE 40" BELOW  
FINISHED GRADE

**1** DETAIL-LOW ROLLER  
SCALE: 1" = 1'-0"



**2** DETAIL-SPINE  
SCALE: 1" = 1'-0"

SEAL:

REVISION	DATE	DESCRIPTION

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**PROVIDENCE PARKS & RECREATION DEPT.**  
1000 ELMWOOD AVENUE  
PROVIDENCE, RI 02907

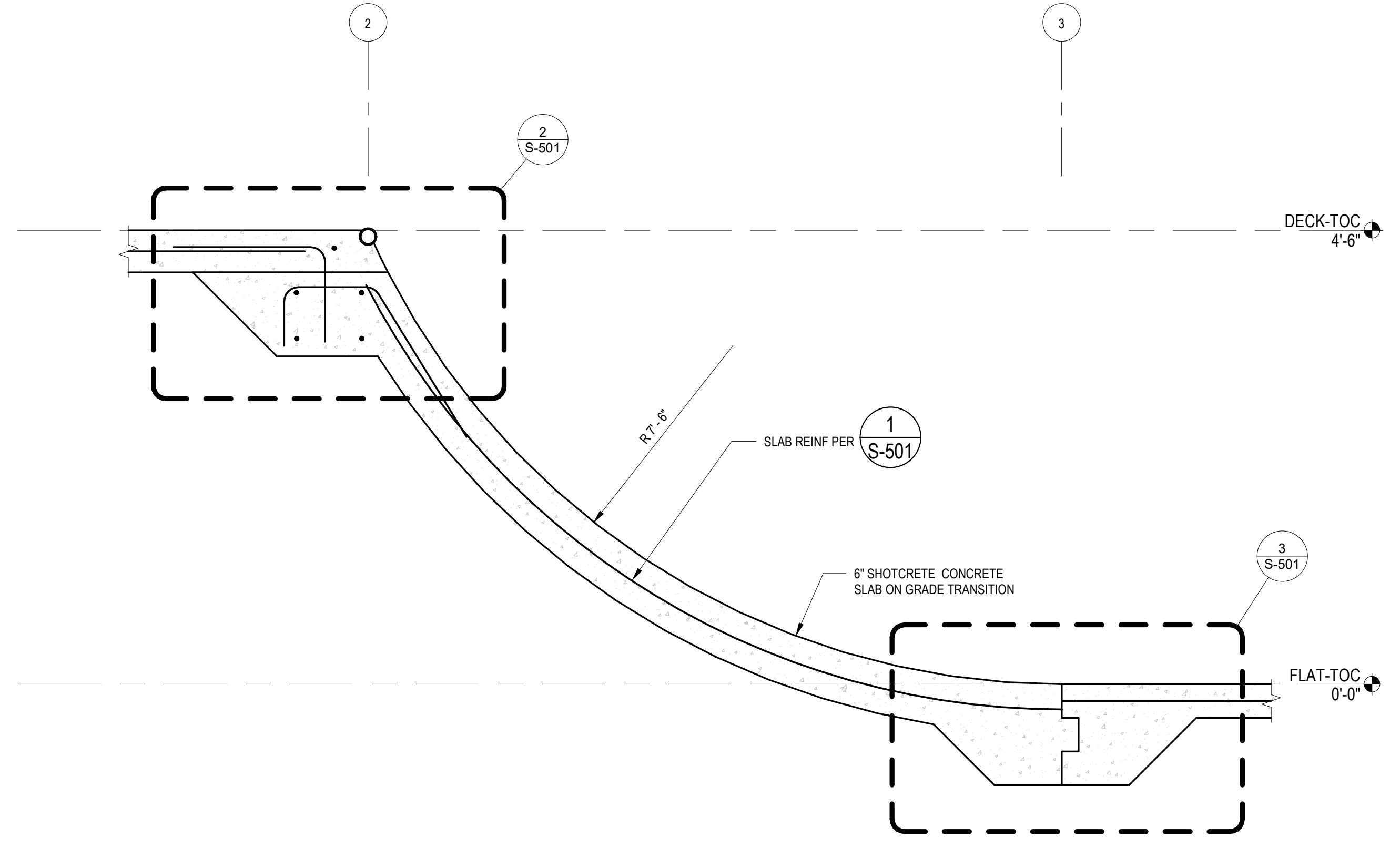
PROJECT:  
**WOONASQUATUCKET ADVENTURE PARK PHASE II**  
GLENBRIDGE AVENUE  
PROVIDENCE, RHODE ISLAND

TITLE:  
**SECTIONS**

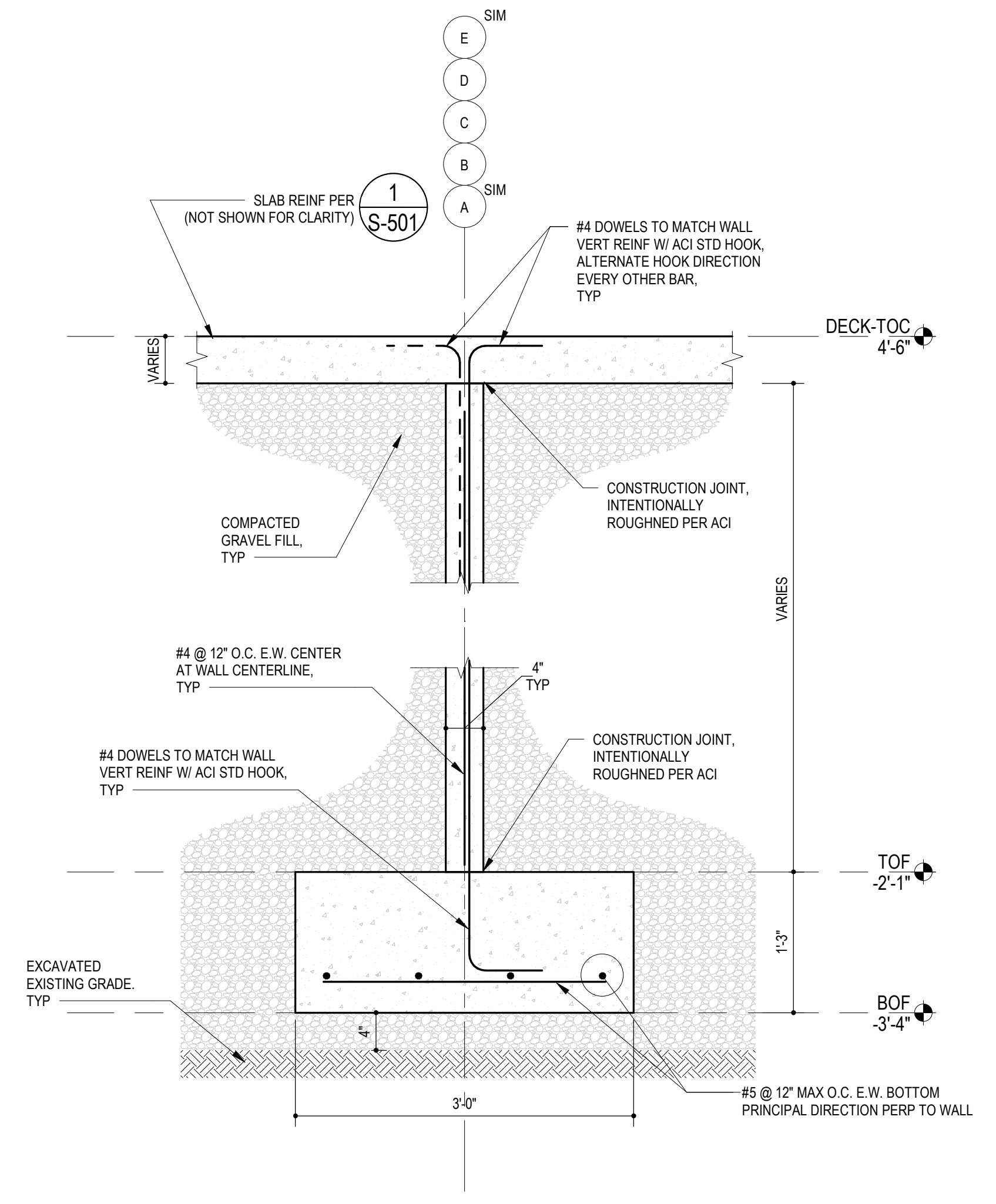
ISSUED FOR: BID  
DATE: MAY 11, 2023  
SCALE: 1" = 1'-0"  
DRAWN BY: DDV  
CHECKED BY: DEW  
PROJECT NO: 3652220361

**NOTES:**

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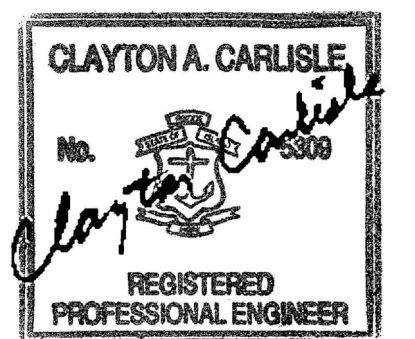


**1** DETAIL-TRANSITION RAMP  
SCALE: 1" = 1'-0"



**2** DETAIL-TYPICAL STIFFNER WALL  
SCALE: 1" = 1'-0"

SEAL:



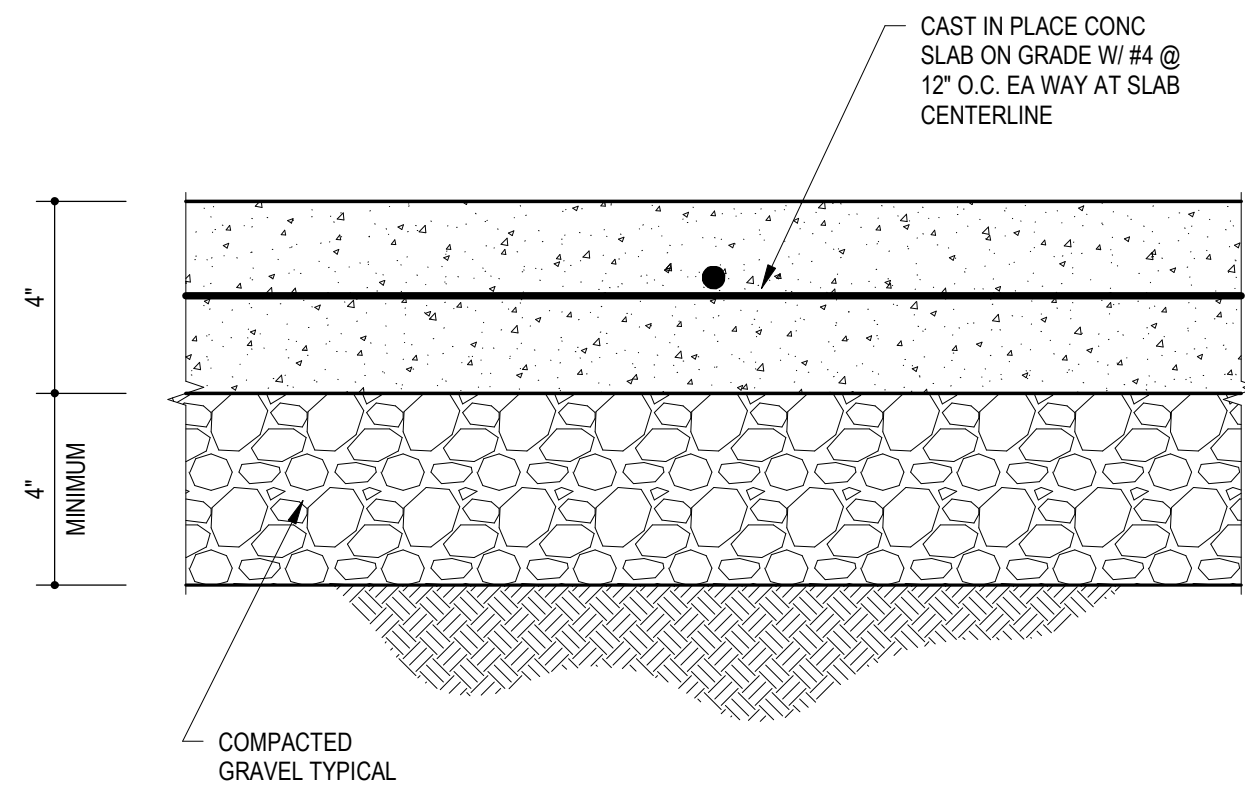
REVISION	DATE	DESCRIPTION

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PROVIDENCE, RI 02907

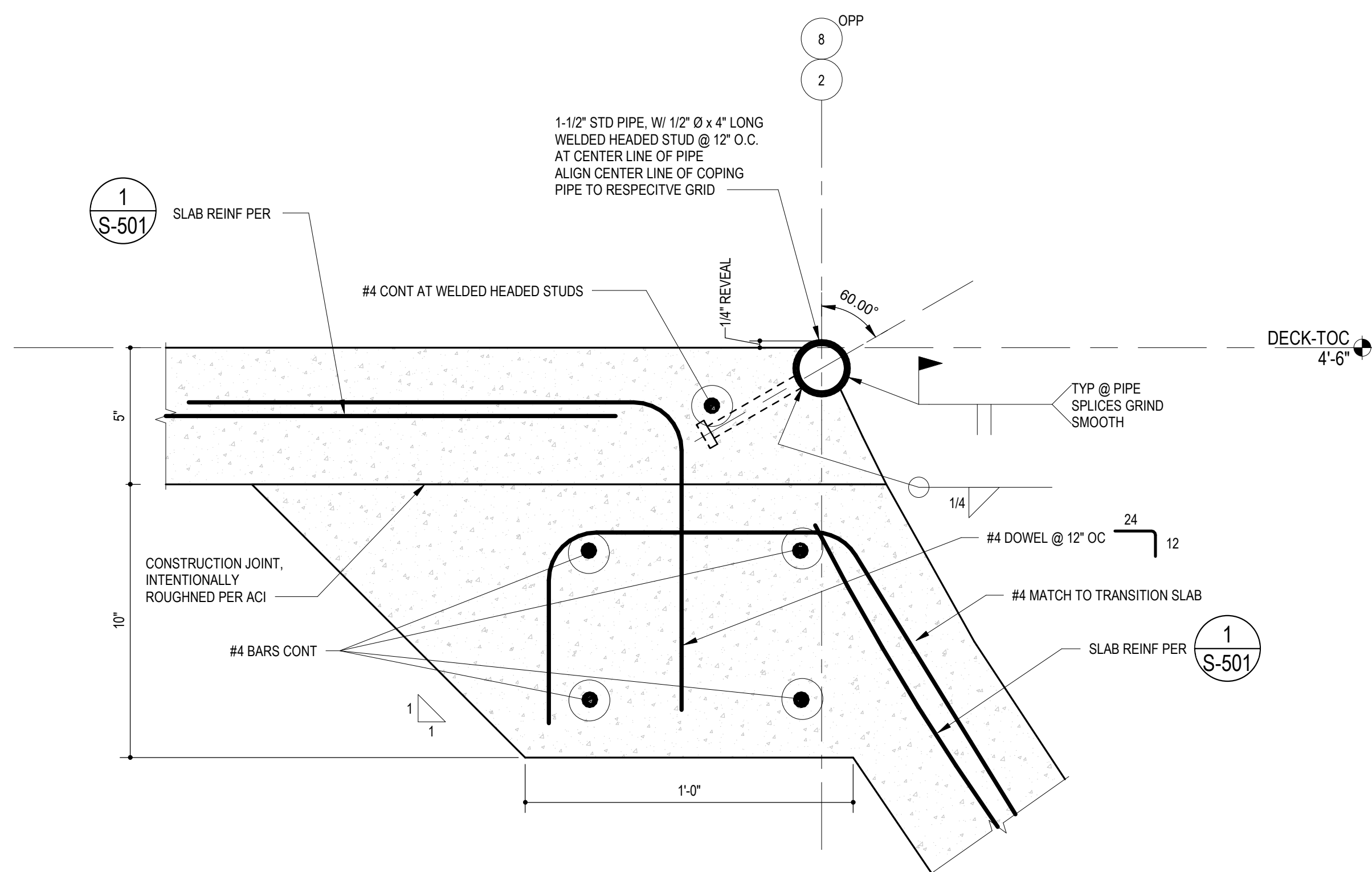
PROJECT:  
**WOONASQUATUCKET ADVENTURE PARK PHASE II**  
GLENBRIDGE AVENUE  
PROVIDENCE, RHODE ISLAND

TITLE:  
**SECTIONS**

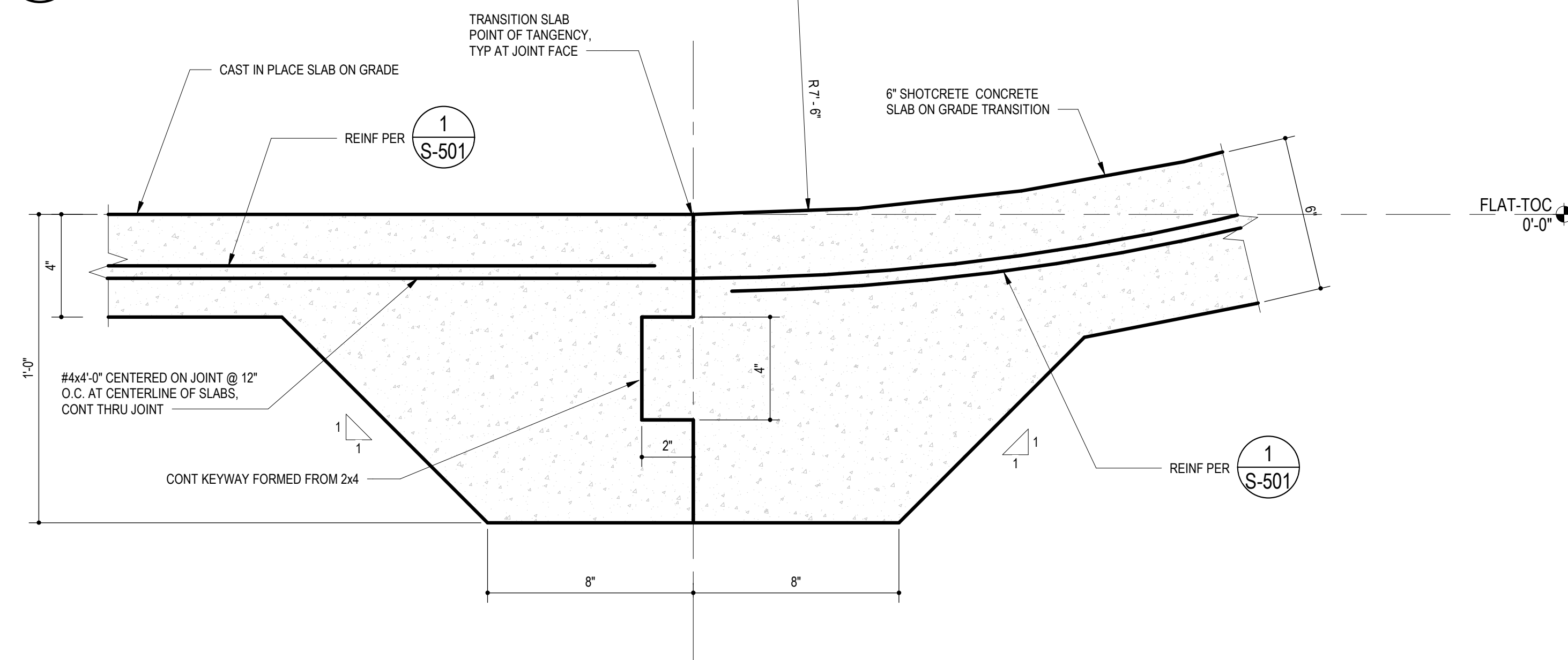
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CHECKED BY: DEW  
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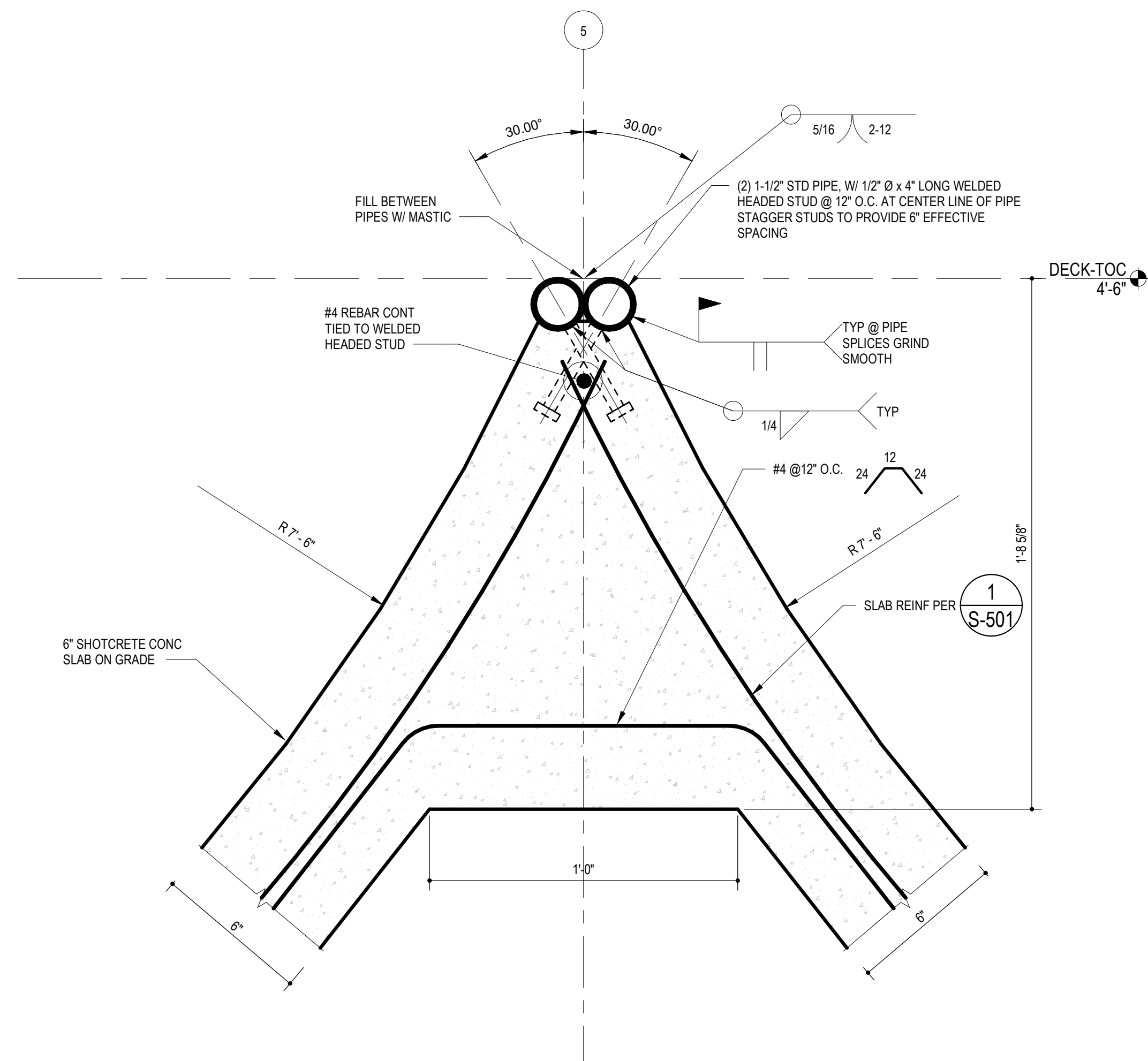
**1** DETAIL-SLAB ON GRADE  
SCALE: 3" = 1'-0"



**2** DETAIL-ROUND COPING  
SCALE: 3" = 1'-0"



**3** DETAIL-TOE CONNECTION  
SCALE: 3" = 1'-0"

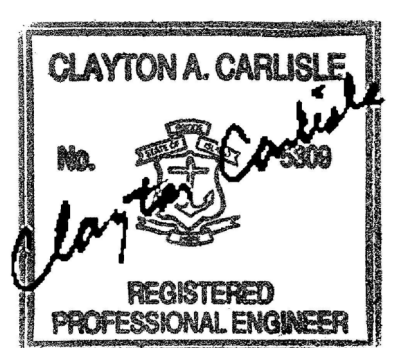


**4** DETAIL-SPINE COPING  
SCALE: 3" = 1'-0"

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2. CONTRACTOR TO VERIFY ALL ELEVATIONS PRIOR TO COMMENCING WORK
3. SEE LANDSCAPE ARCHITECTURE AND CIVIL DRAWINGS FOR BERMING EARTHWORK SURROUNDING STRUCTURE
4. MINIMUM FOOTING DEPTH SHALL BE 40" BELOW FINISHED GRADE

SEAL:



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**PROVIDENCE PARKS & RECREATION DEPT.**  
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PROVIDENCE, RI 02907

PROJECT:  
**WOONASQUATUCKET ADVENTURE PARK PHASE II**  
GLENBRIDGE AVENUE  
PROVIDENCE, RHODE ISLAND

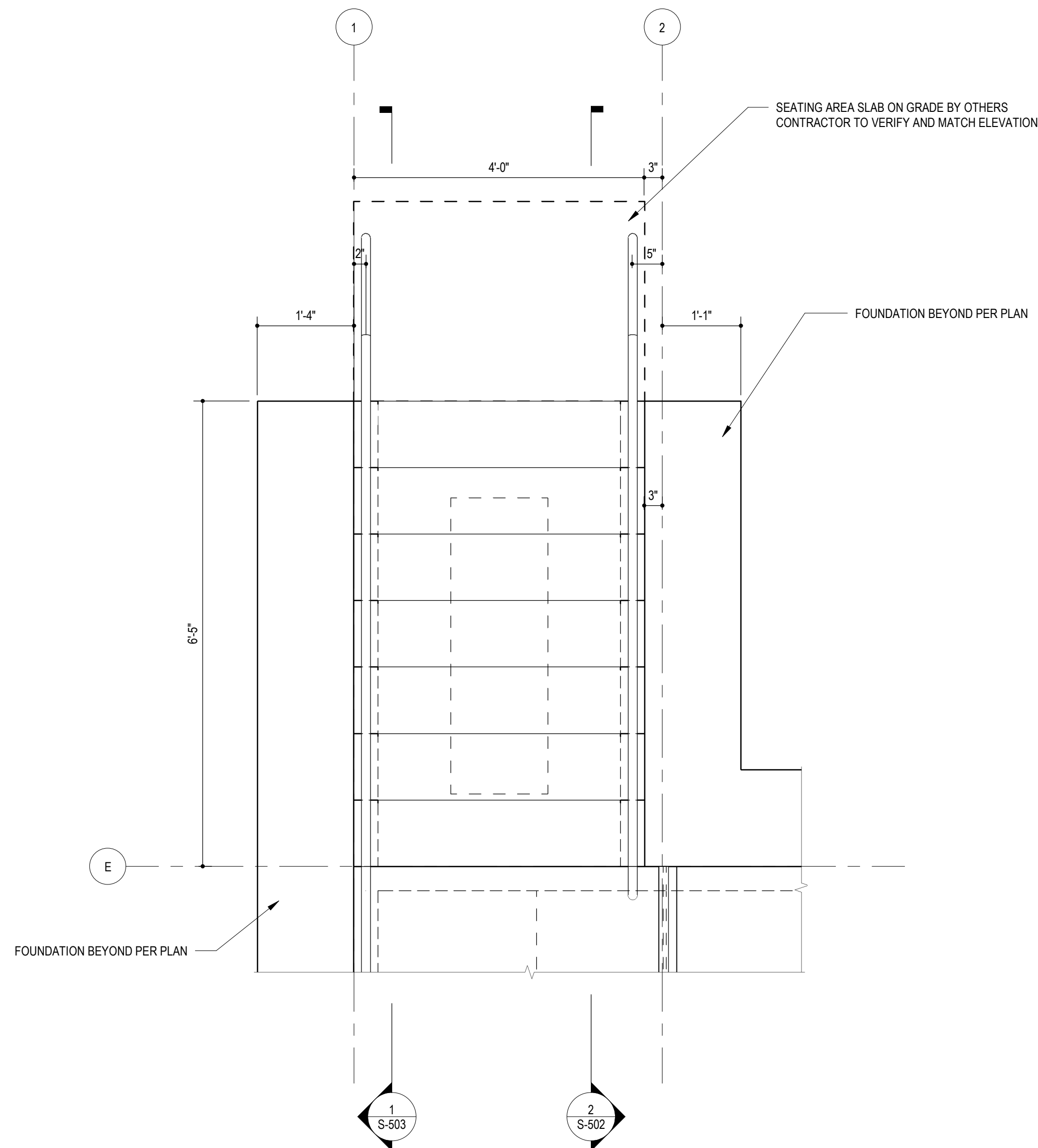
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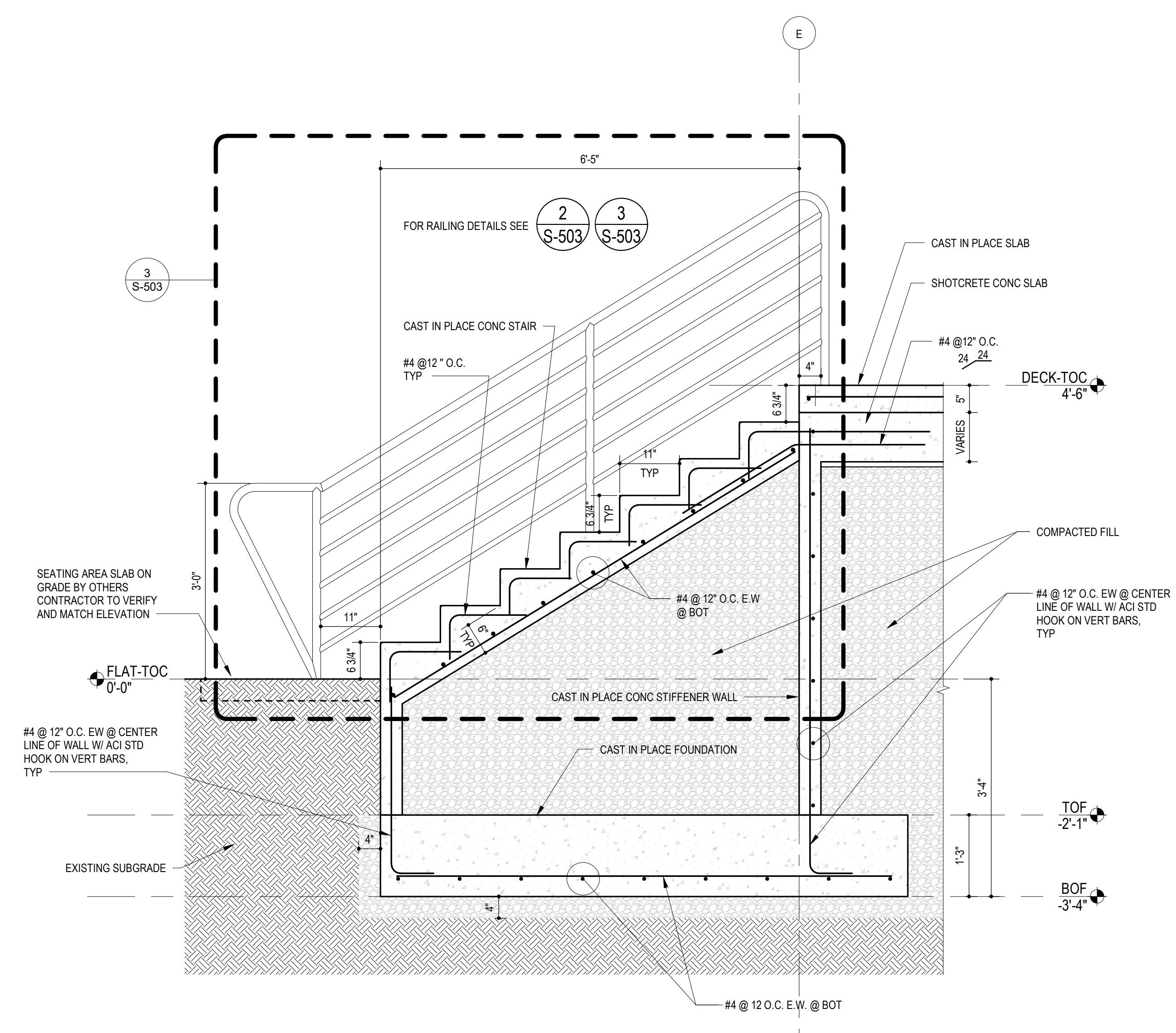
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CHECKED BY:	DEW
PROJECT NO:	3652220361

**S-501**



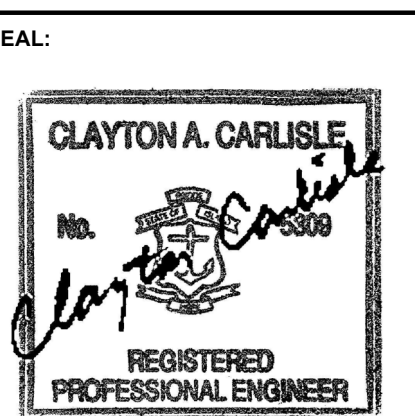


**1** PLAN - STAIR  
SCALE: 3/4" = 1'-0"



**2** DETAIL - TYPICAL STAIR  
SCALE: 3/4" = 1'-0"

- NOTES:**
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REVISION	DATE	DESCRIPTION

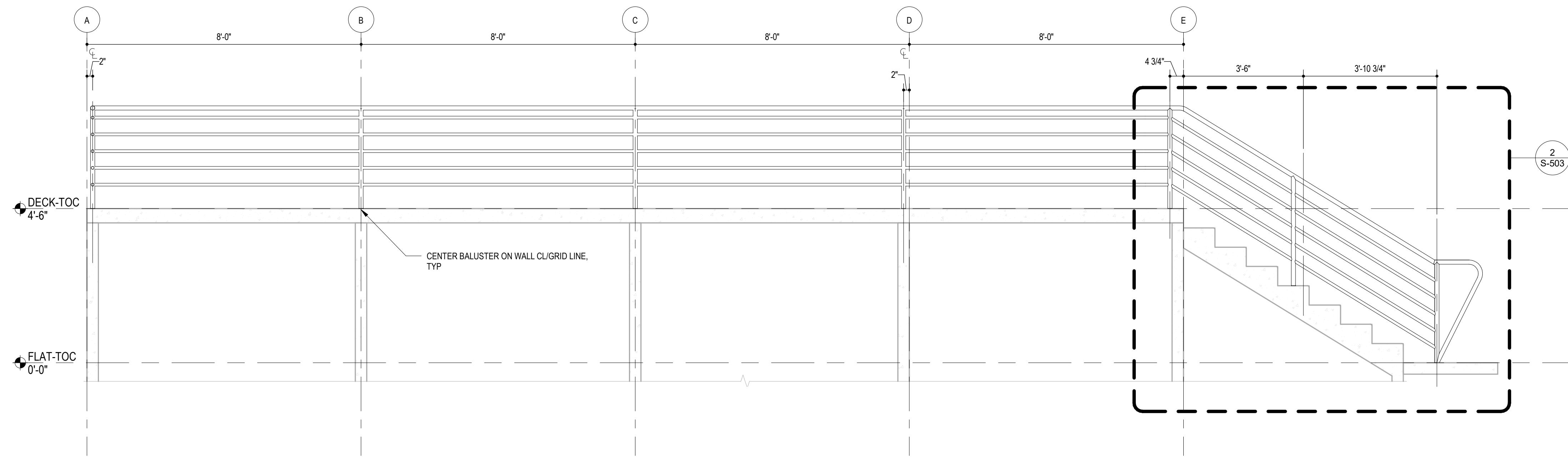
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1000 ELMWOOD AVENUE  
PROVIDENCE, RI 02907

PROJECT:  
**WOONASQUATUCKET ADVENTURE PARK PHASE II**  
GLENBRIDGE AVENUE  
PROVIDENCE, RHODE ISLAND

TITLE:  
**DETAILS**

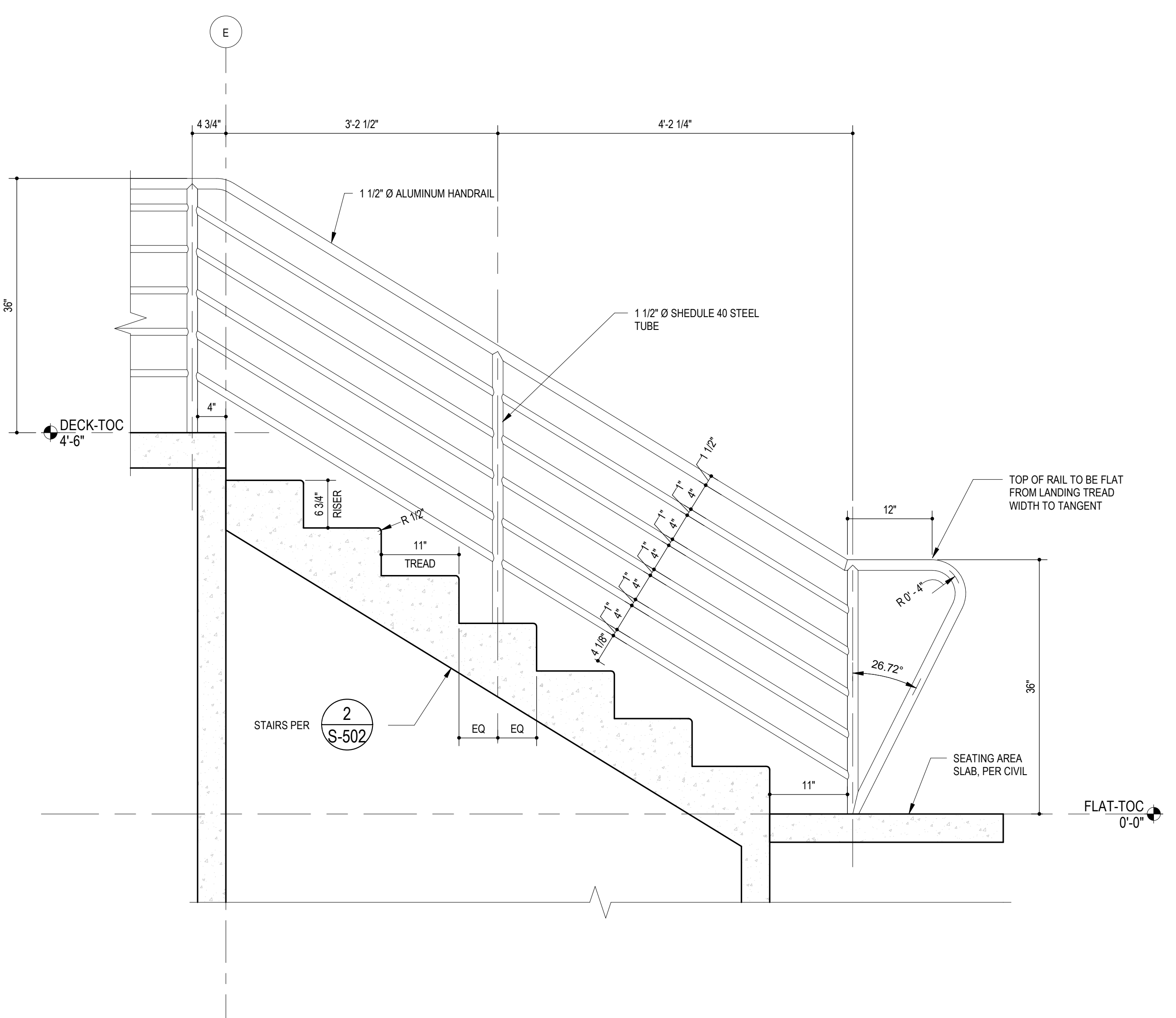
ISSUED FOR: BID  
DATE: MAY 11, 2023  
SCALE: 3/4" = 1'-0"  
DRAWN BY: DDV  
CHECKED BY: DEW  
PROJECT NO: 3652220361

# S-502

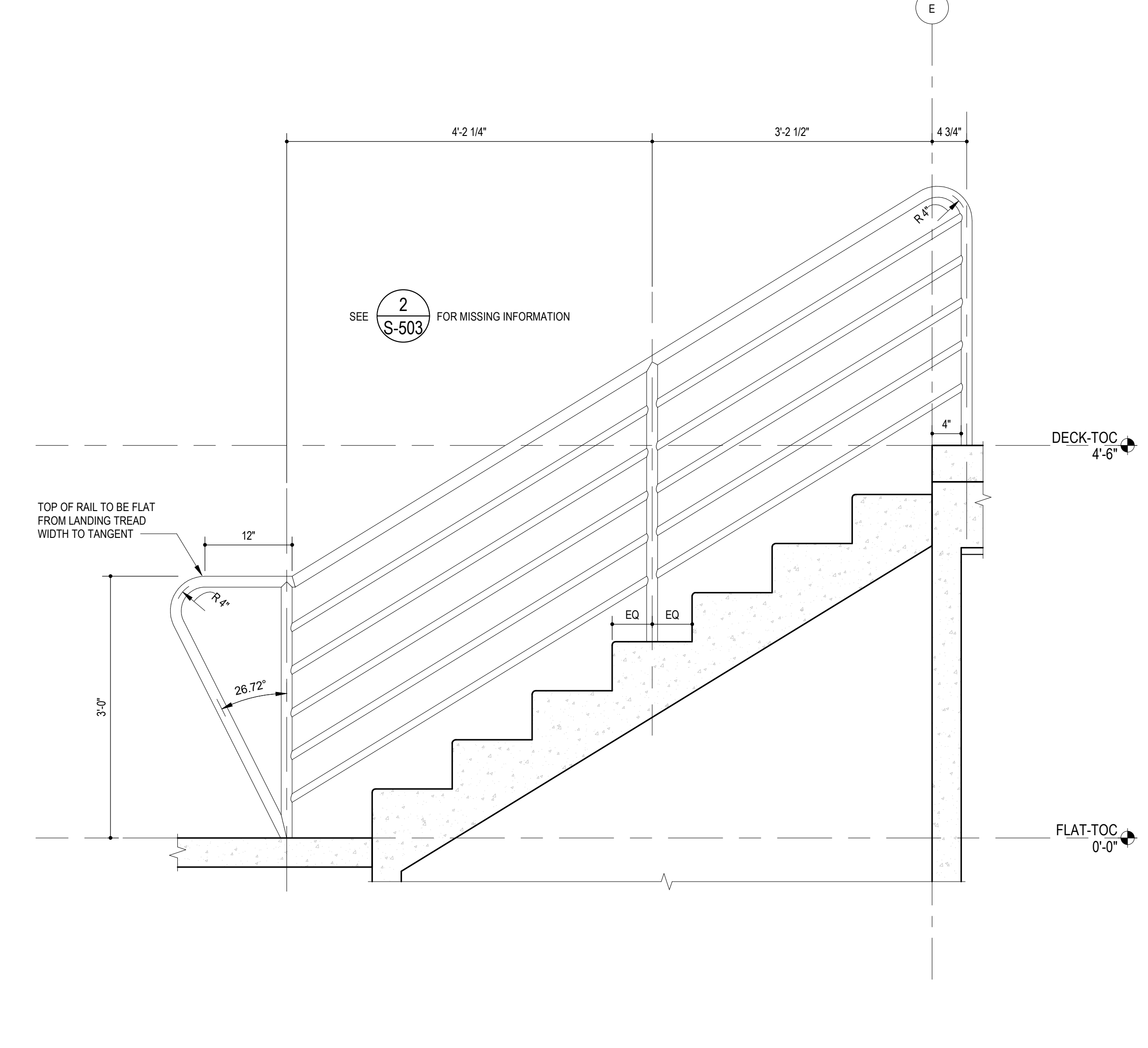


- STAIR AND HANDRAIL NOTES:**
1. CONTRACTOR SHALL PROVIDE STAND-ALONE 3' WIDE MOCK-UP OF STAIRS.
  2. REFER TO STRUCTURAL ENGINEER'S DRAWINGS FOR REINFORCING AND FOOTING DESIGN.
  3. DETAIL MAY SHOW DIFFERENT NUMBER OF RISERS THAN IS REQUIRED, REFER TO PLANS FOR INFORMATION. ALL RISERS COMPRISING A SET OF STAIRS SHALL BE EQUAL HEIGHT ACROSS FULL WIDTH OF STAIR, REFER TO GRADING PLAN FOR RISER HEIGHT AND NUMBER OF RISERS.
  4. ENSURE LAYOUT OF TACTILE TREAD (GROOVED CONCRETE) IS SQUARE TO RISER SURFACE FACE.
  5. A FLOOD TEST SHALL BE PERFORMED FOLLOWING STAIR CONSTRUCTION. ANY STAIRS, LANDING AND TACTILE WARNING STRIP WITH PONDING WATER WILL BE REJECTED AND WILL REQUIRE REPLACEMENT BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.
  6. HANDRAILS SHALL BE DESIGNED IN ACCORDANCE WITH CURRENT ADA STANDARDS. PROVIDE ENGINEERED STAMPED SHOP DRAWINGS AND SCHEDULES FOR HANDRAILS.
  7. HANDRAIL AND STANCHION SIZE NOTED IS NOMINAL.
  8. ALL HANDRAIL AND STANCHION CONNECTIONS SHALL BE WELDED AND GROUND SMOOTH.
  9. PROVIDE EQUAL SPACING BETWEEN END AND CENTER STANCHIONS.
  10. SEE SPECIFICATIONS FOR STEEL TYPE AND FINISH REQUIREMENTS.

**1** ELEVATION-RAILING LONG GL 1 (GL 9 SIMILAR)  
SCALE: 1/2" = 1'-0"



**2** DETAIL-TYPICAL RAILING EXTERIOR  
SCALE: 1" = 1'-0"



**3** DETAIL-TYPICAL RAILING INTERIOR  
SCALE: 1" = 1'-0"

SEAL:

REVISION	DATE	DESCRIPTION

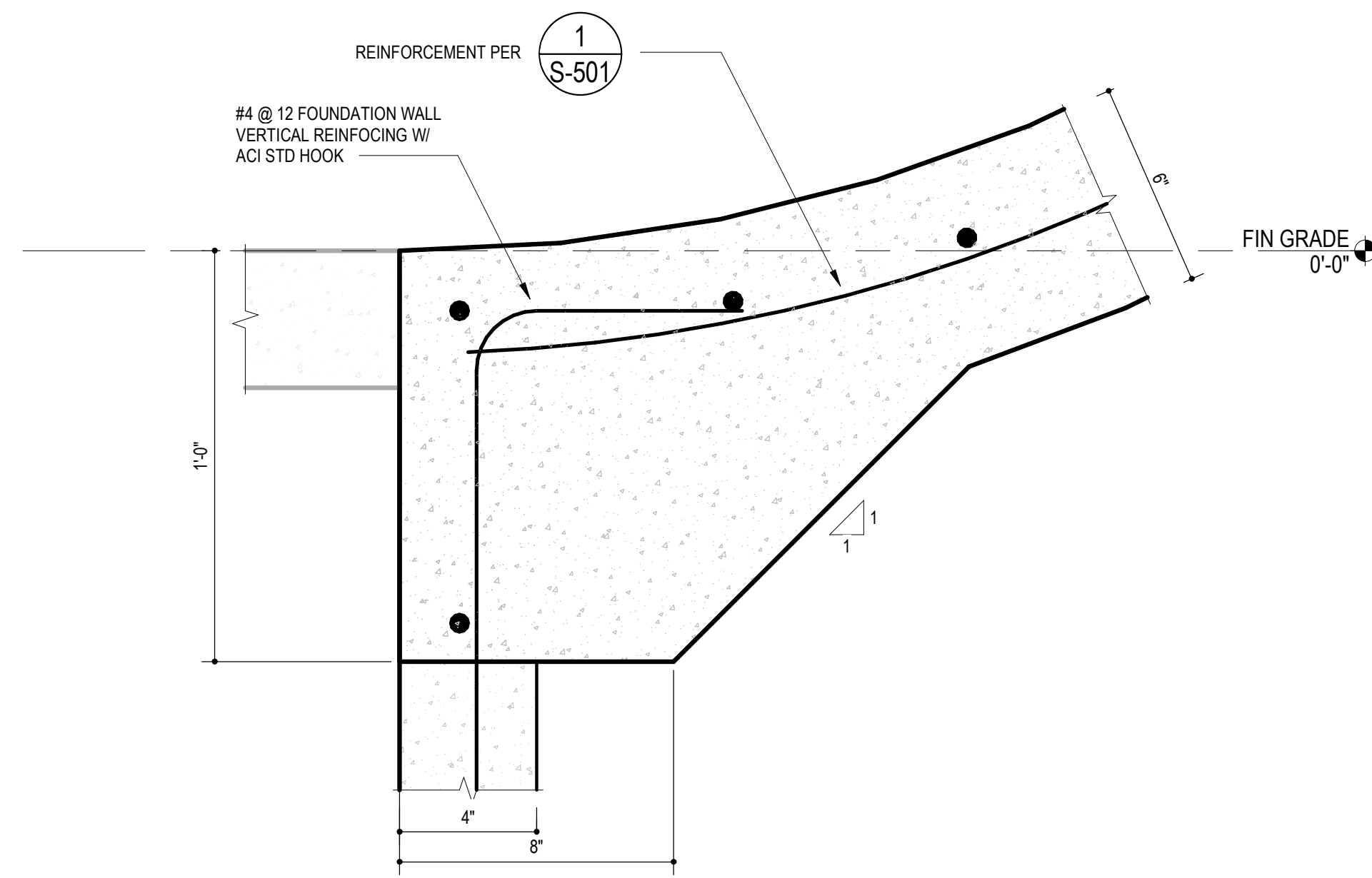
CLIENT:  
**PROVIDENCE PARKS & RECREATION DEPT.**  
1000 ELMWOOD AVENUE  
PROVIDENCE, RI 02907

PROJECT:  
**WOONASQUATUCKET ADVENTURE PARK PHASE II**  
GLENBRIDGE AVENUE  
PROVIDENCE, RHODE ISLAND

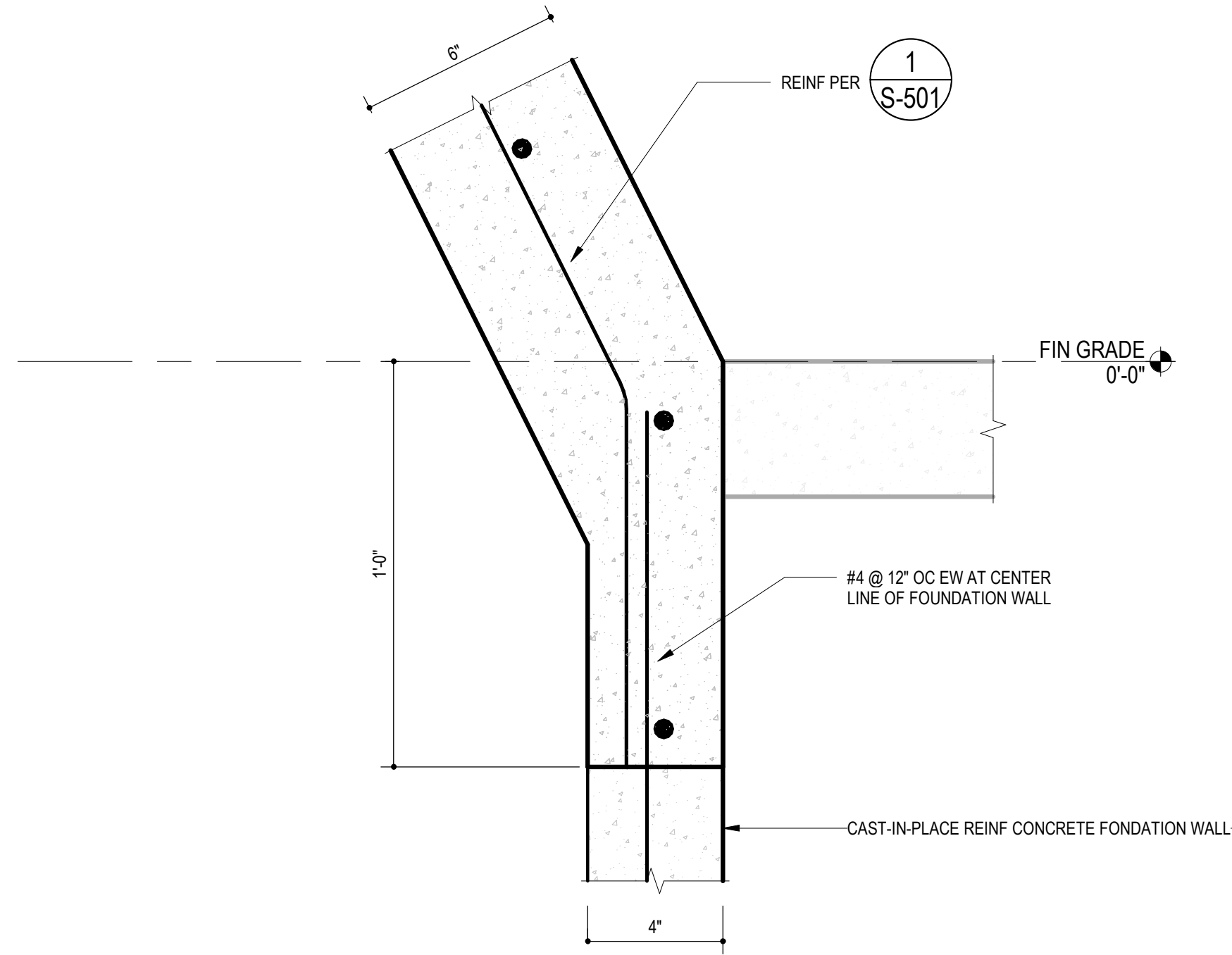
TITLE:  
**DETAILS**

ISSUED FOR:	BID
DATE:	MAY 11, 2023
SCALE:	As indicated
DRAWN BY:	DDV
CHECKED BY:	DEW
PROJECT NO:	365220361

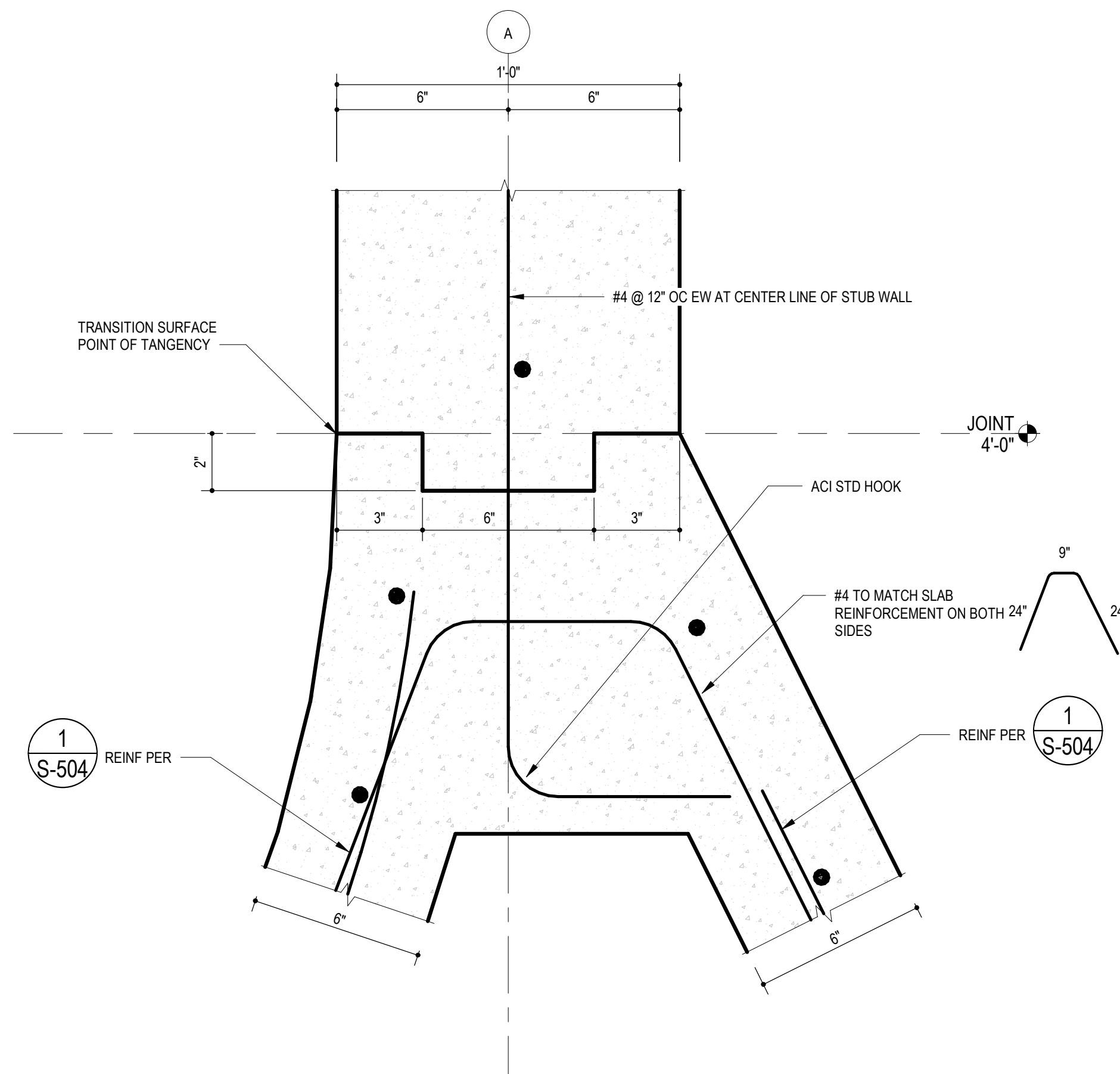
**S-503**



**1** DETAIL  
SCALE: 3" = 1'-0"

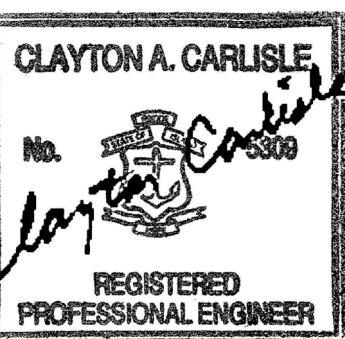


**2** DETAIL  
SCALE: 3" = 1'-0"



**3** DETAIL  
SCALE: 3" = 1'-0"

SEAL:



REVISION	DATE	DESCRIPTION

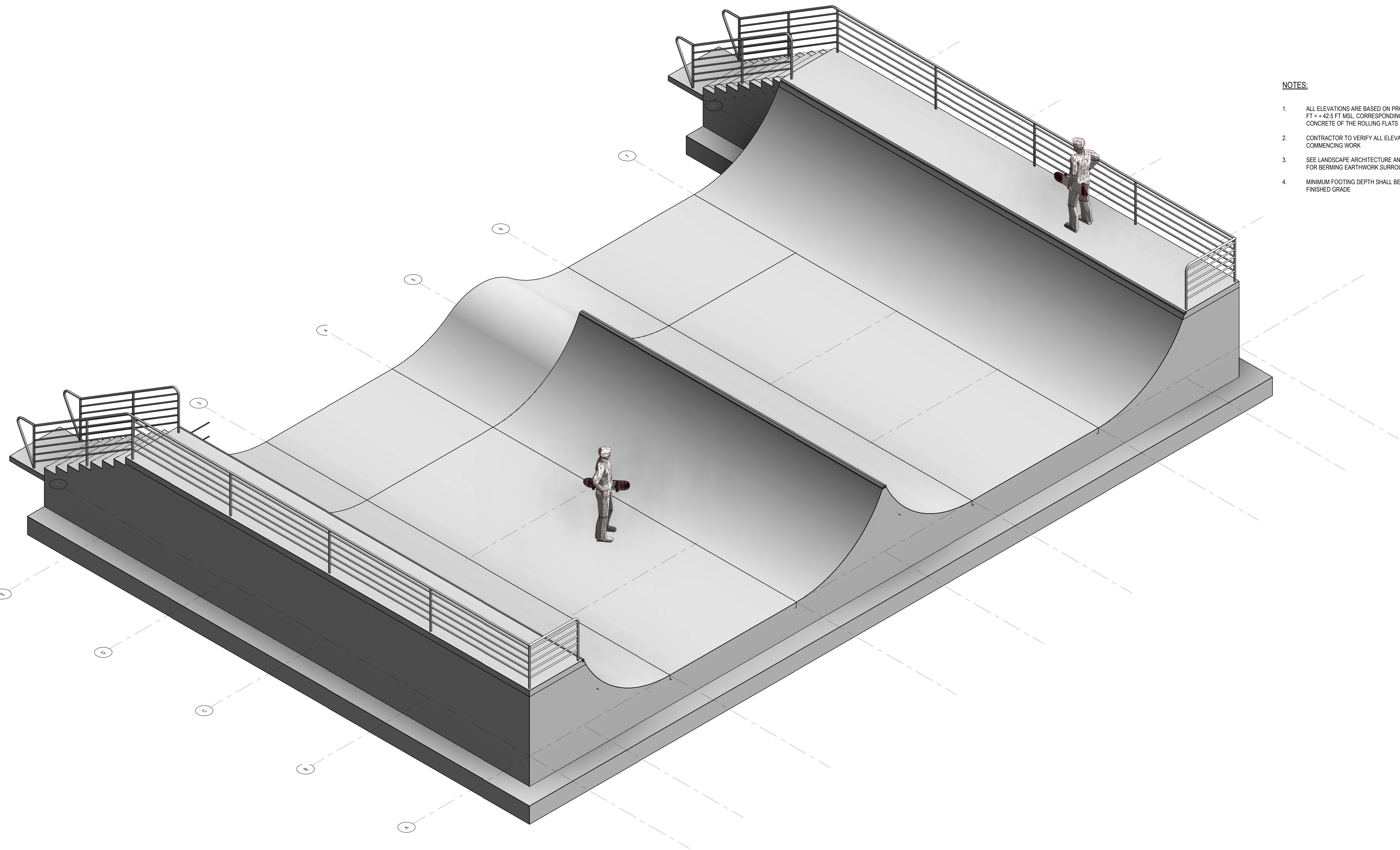
CLIENT:  
**PROVIDENCE PARKS & RECREATION DEPT.**  
1000 ELMWOOD AVENUE  
PROVIDENCE, RI 02907

PROJECT:  
**WOONASQUATUCKET ADVENTURE PARK PHASE II**  
GLENBRIDGE AVENUE  
PROVIDENCE, RHODE ISLAND

TITLE:  
**DETAILS**

ISSUED FOR:	BID
DATE:	MAY 11, 2023
SCALE:	3" = 1'-0"
DRAWN BY:	DDV
CHECKED BY:	DEW
PROJECT NO:	3652220361

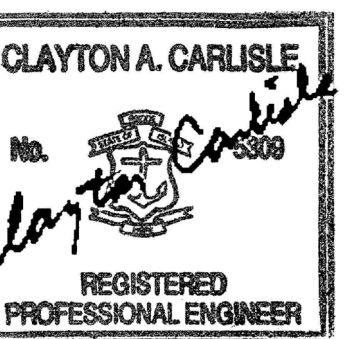
**S-504**



**NOTES:**

1. ALL ELEVATIONS ARE BASED ON PROJECT DATUM 0.00 FT = + 42.5 FT MSL, CORRESPONDING TO TOP OF CONCRETE OF THE ROLLING FLATS
2. CONTRACTOR TO VERIFY ALL ELEVATIONS PRIOR TO COMMENCING WORK
3. SEE LANDSCAPE ARCHITECTURE AND CIVIL DRAWINGS FOR BERMING EARTHWORK SURROUNDING STRUCTURE
4. MINIMUM FOOTING DEPTH SHALL BE 40" BELOW FINISHED GRADE

SEAL:




REVISION	DATE	DESCRIPTION

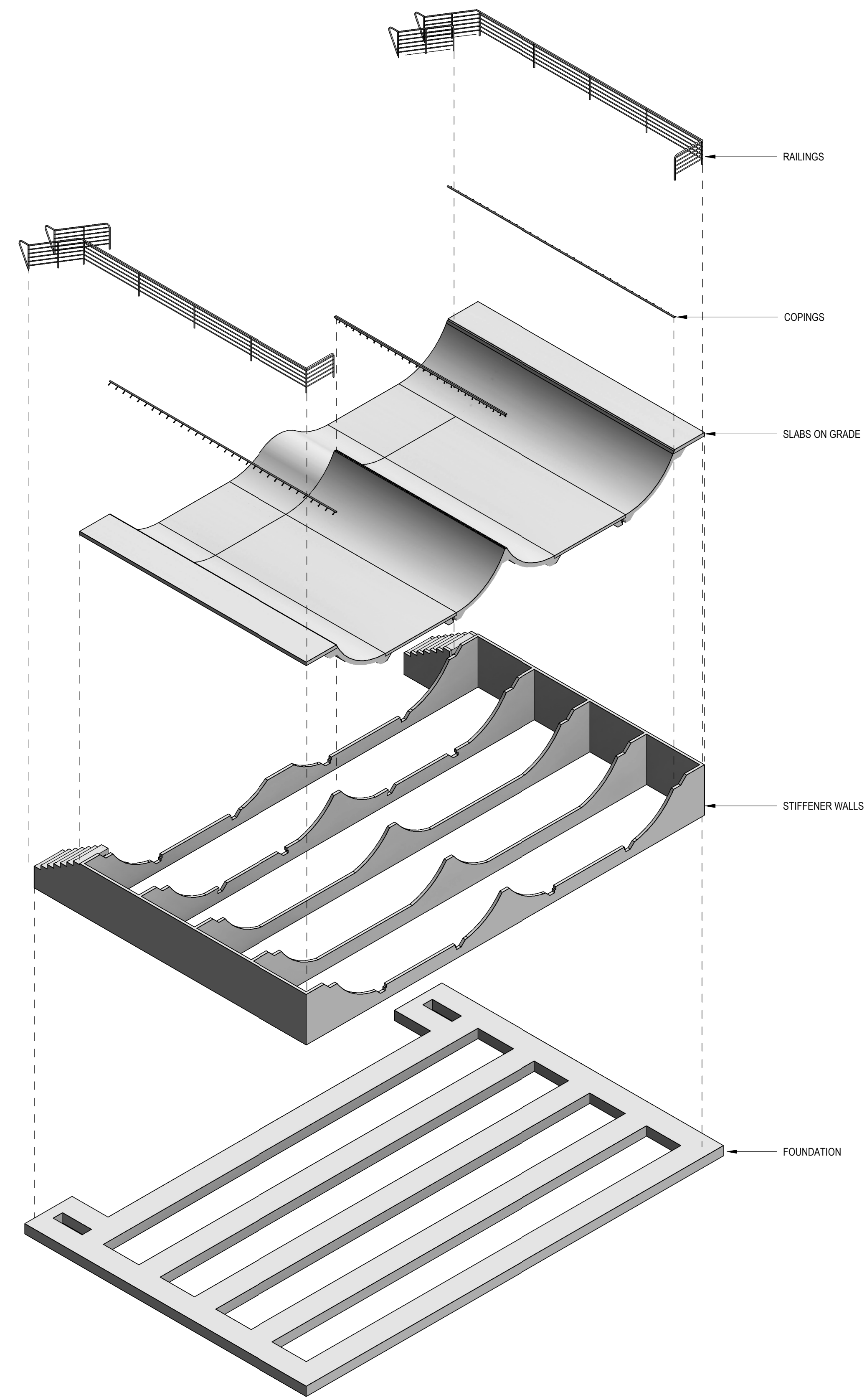
CLIENT:  
**PROVIDENCE PARKS & RECREATION DEPT.**  
1000 ELMWOOD AVENUE  
PROVIDENCE, RI 02907

PROJECT:  
**WOONASQUATUCKET ADVENTURE PARK PHASE II**  
GLENBRIDGE AVENUE  
PROVIDENCE, RHODE ISLAND

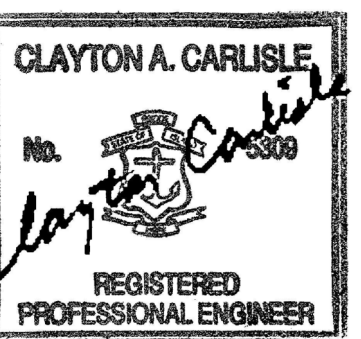
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**PERSPECTIVE**

ISSUED FOR:	BID
DATE:	MAY 11, 2023
SCALE:	
DRAWN BY:	DDV
CHECKED BY:	DEW
PROJECT NO:	3652220361

**S-900**



SEAL:



REVISION	DATE	DESCRIPTION

CLIENT:

**PROVIDENCE PARKS & RECREATION DEPT.**  
 1000 ELMWOOD AVENUE  
 PROVIDENCE, RI 02907

PROJECT:

**WOONASQUATUCKET ADVENTURE PARK PHASE II**  
 GLENBRIDGE AVENUE  
 PROVIDENCE, RHODE ISLAND

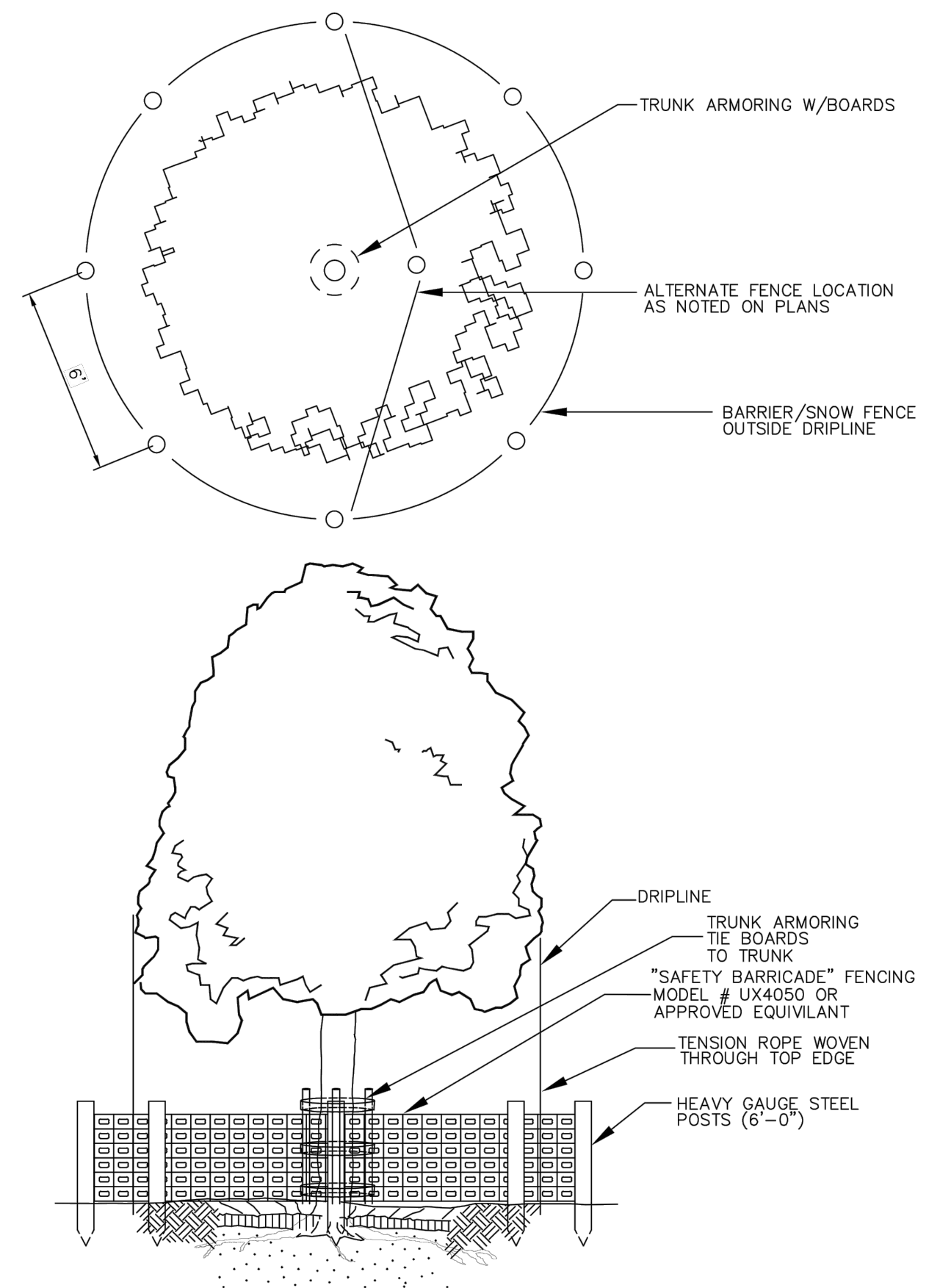
TITLE:  
**EXPLODED ISOMETRIC**

ISSUED FOR: BID  
 DATE: MAY 11, 2023  
 SCALE:  
 DRAWN BY: DDV  
 CHECKED BY: DEW  
 PROJECT NO: 3652220361

**S-901**

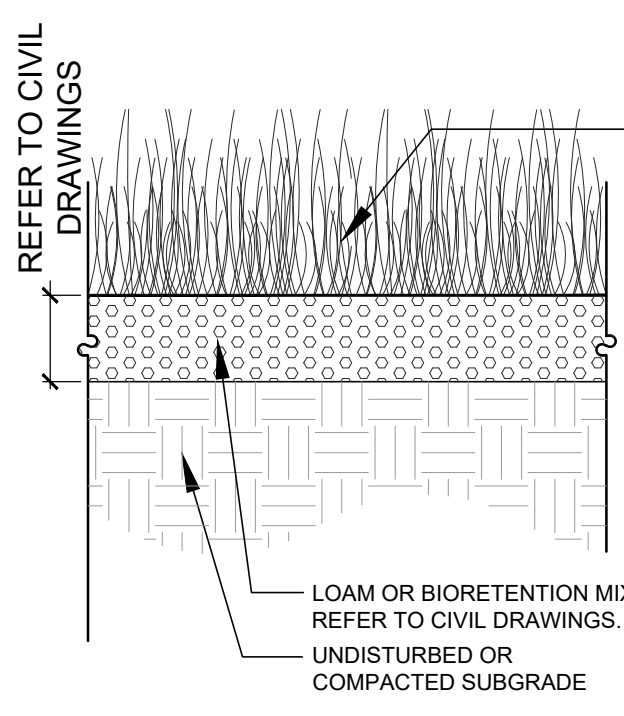
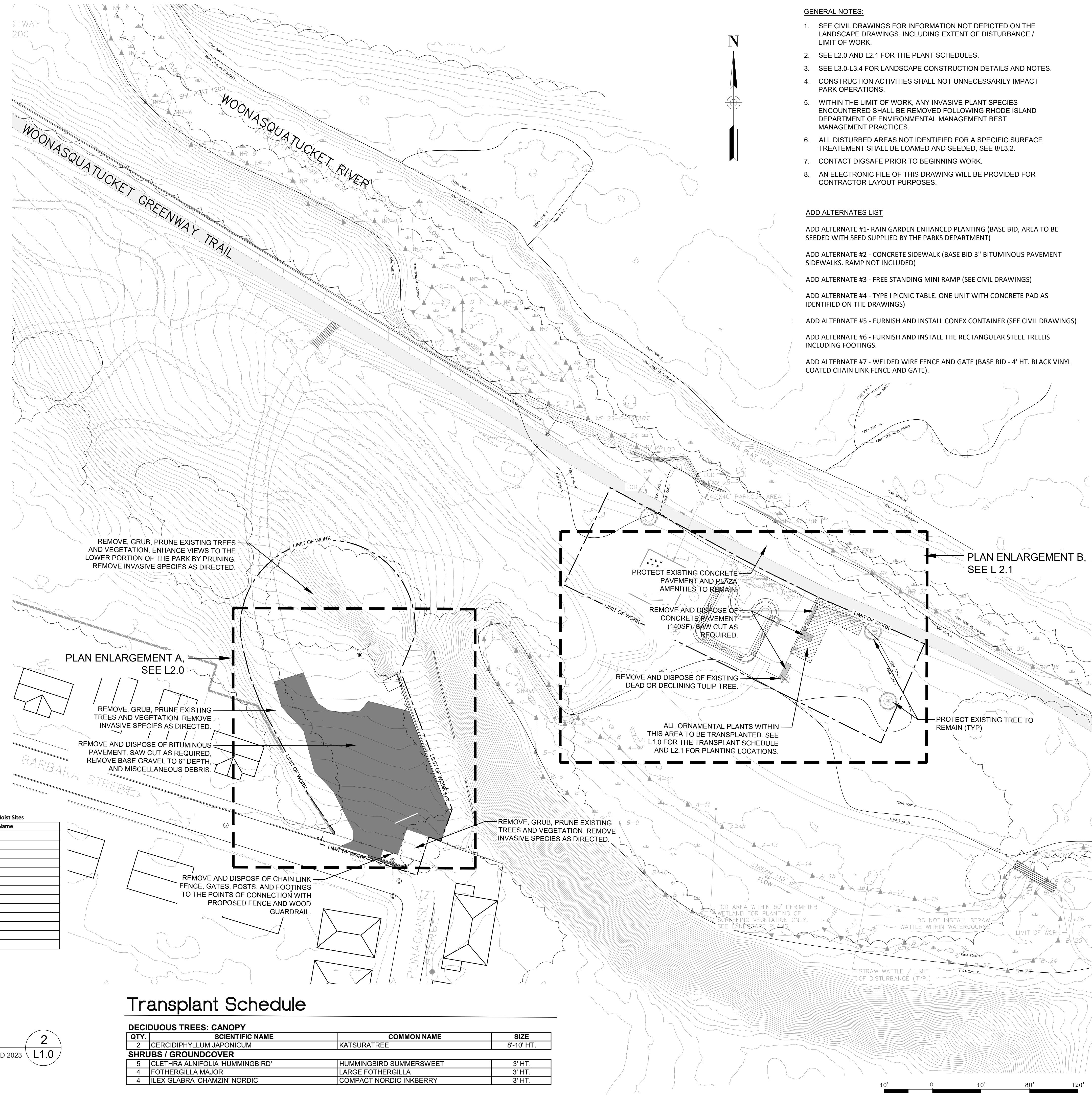
- GENERAL NOTES:**
- SEE CIVIL DRAWINGS FOR INFORMATION NOT DEPICTED ON THE LANDSCAPE DRAWINGS, INCLUDING EXTENT OF DISTURBANCE / LIMIT OF WORK.
  - SEE L2.0 AND L2.1 FOR THE PLANT SCHEDULES.
  - SEE L3.0-L3.4 FOR LANDSCAPE CONSTRUCTION DETAILS AND NOTES.
  - CONSTRUCTION ACTIVITIES SHALL NOT UNNECESSARILY IMPACT PARK OPERATIONS.
  - WITHIN THE LIMIT OF WORK, ANY INVASIVE PLANT SPECIES ENCOUNTERED SHALL BE REMOVED FOLLOWING RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT BEST MANAGEMENT PRACTICES.
  - ALL DISTURBED AREAS NOT IDENTIFIED FOR A SPECIFIC SURFACE TREATMENT SHALL BE LOAMED AND SEEDED, SEE 8/L3.2.
  - CONTACT DIGSAFE PRIOR TO BEGINNING WORK.
  - AN ELECTRONIC FILE OF THIS DRAWING WILL BE PROVIDED FOR CONTRACTOR LAYOUT PURPOSES.

- ADD ALTERNATES LIST**
- ADD ALTERNATE #1- RAIN GARDEN ENHANCED PLANTING (BASE BID, AREA TO BE SEEDED WITH SEED SUPPLIED BY THE PARKS DEPARTMENT)
- ADD ALTERNATE #2 - CONCRETE SIDEWALK (BASE BID 3" BITUMINOUS PAVEMENT SIDEWALKS. RAMP NOT INCLUDED)
- ADD ALTERNATE #3 - FREE STANDING MINI RAMP (SEE CIVIL DRAWINGS)
- ADD ALTERNATE #4 - TYPE I PICNIC TABLE. ONE UNIT WITH CONCRETE PAD AS IDENTIFIED ON THE DRAWINGS)
- ADD ALTERNATE #5 - FURNISH AND INSTALL CONEX CONTAINER (SEE CIVIL DRAWINGS)
- ADD ALTERNATE #6 - FURNISH AND INSTALL THE RECTANGULAR STEEL TRELLIS INCLUDING FOOTINGS.
- ADD ALTERNATE #7 - WELDED WIRE FENCE AND GATE (BASE BID - 4' HT. BLACK VINYL COATED CHAIN LINK FENCE AND GATE).



**Tree Protection**  
 Not to Scale

©IRONWOOD 2023 **1** L1.0



Botanical Name	Common Name
<i>Elymus riparius</i>	Riverbank Wild Rye
<i>Schizachyrium scoparium</i>	Little Bluestem
<i>Festuca rubra</i>	Red Fescue
<i>Andropogon gerardii</i>	Big Bluestem
<i>Panicum virgatum</i>	Switch Grass
<i>Vernonia noveboracensis</i>	New York Ironweed
<i>Agrostis perennans</i>	Upland Bentgrass
<i>Bidens frondosa</i>	Beggar Ticks
<i>Eupatorium maculatum (Eutrochium maculatum)</i>	Spotted Joe Pye Weed
<i>Eupatorium perfoliatum</i>	Boneset
<i>Aster novae-angliae (Symphyotrichum novae-angliae)</i>	New England Aster
<i>Scirpus cyperinus</i>	Wool Grass
<i>Juncus effusus</i>	Soft Rush

APPLY: 35 LBS/ACRE :1250 sq ft/lb

- NOTES:**
- THE SEED MIX ABOVE REPRESENTS A BLEND AVAILABLE THRU NEW ENGLAND WETLAND PLANTS - SOUTH HADLEY, MA - WWW.NEWP.COM
  - APPLY SEED AT THE RATE SPECIFIED BY THE SEED SUPPLIER
  - SEE PLANS FOR AREAS DESIGNATED TO RECEIVE THIS SEED MIX.

**Bioretention Area Seeding**  
 Not to Scale

©IRONWOOD 2023 **2** L1.0

**Transplant Schedule**

QTY.	SCIENTIFIC NAME	COMMON NAME	SIZE
2	CERCIDIPHYLLUM JAPONICUM	KATSURATREE	8'-10' HT.
<b>SHRUBS / GROUNDCOVER</b>			
5	ICLETIHA ALNIFOLIA 'HUMMINGBIRD'	HUMMINGBIRD SUMMERSWEET	3' HT.
4	FOTHERGILLA MAJOR	LARGE FOTHERGILLA	3' HT.
4	ILEX GLABRA 'CHAMZIN' NORDIC	COMPACT NORDIC INKBERRY	3' HT.



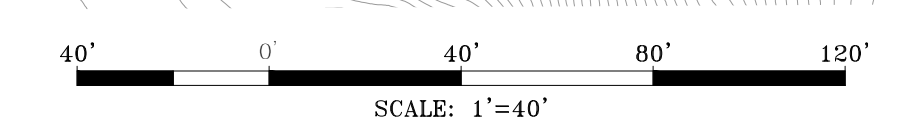
REVISION	DATE	DESCRIPTION

**CLIENT:**  
 PROVIDENCE PARKS DEPARTMENT  
 1000 ELMWOOD AVENUE  
 PROVIDENCE, RI 02907

**PROJECT:**  
 WOONASQUATTUCKET ADVENTURE PARK  
 PHASE II  
 GLENBRIDGE AVENUE  
 PROVIDENCE, RHODE ISLAND

**TITLE:**  
 LANDSCAPE PREPARATION PLAN

**ISSUED FOR:** 100% SUBMISSION  
**DATE:** MAY 11, 2023  
**SCALE:** 1"=40'-0"  
**DRAWN BY:** SW, JRH  
**CHECKED BY:** JRH  
**PROJECT NO:** 365220361



**L1.0**

### Plant Schedule, Add Alternate #1

SHRUBS / GROUNDCOVER					
6	CSA	CORNUS SERICEA 'ALLEMAN'S COMPACTA'	ALMAN'S COMPACT RED-OSIER DOGWOOD	#3	4' HT X 5' SPD CONTAINER
5	RAG	RHUS AROMATICA 'GRO LOW'	GROUNDCOVER SUMAC	#3	2' HT X 6' SPD CONTAINER
5	SP	SALIX PURPUREA 'NANA'	DWARF ARCTIC WILLOW	#3	5' HT X 5' SPD CONTAINER
GRASSES / PERENNIALS					
12	AC	ANEMONE CANADENSIS	WINDFLOWER	#1	2' HT 24" OC
6	ANA	ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER	#1	3' HT 30" O.C.
67	CP	CAREX PENNSYLVANICA	PENNSYLVANIA SEDGE	#1	1' HT 18" OC
5	CL	CHASMANTHIUM LATIFOLIUM	NORTHERN SEA OATS	#1	3' HT 36" O.C.
28	IV	IRIS VERSICOLOR	BLUE FLAG IRIS	#1	3' HT 18" OC
12	PVC	PANICUM VIRGATUM 'CAPE BREEZE'	SWITCHGRASS	#2	3' HT 36" OC

### Landscape Legend

- 1 L3.2 Deciduous Tree
- 2 L3.2 Evergreen Tree Planting
- 4 L3.2 Shrub Planting
- 1 L2.1 Perennial / Groundcover Planting
- 8 L3.2 Lawn Seeding
- 2 L1.0 Bioretention Area Seeding
- 4 L3.1 Picnic Table
- 6 L3.0 Precast Concrete Bench
- 3 L3.3 City Standard 6' Bench
- 3 L3.0 Trash Receptacle
- 2 L3.0 Bike Rack Grouping
- 2 L3.1 Area Light
- 1 L3.1 Underground Utility (Electric)

- GENERAL NOTES:**
- SEE CIVIL DRAWINGS FOR INFORMATION NOT DEPICTED ON THE LANDSCAPE DRAWINGS, INCLUDING EXTENT OF DISTURBANCE / LIMIT OF WORK.
  - SEE L2.0 AND L2.1 FOR THE PLANT SCHEDULES.
  - SEE L3.0-L3.4 FOR LANDSCAPE CONSTRUCTION DETAILS AND NOTES.
  - CONSTRUCTION ACTIVITIES SHALL NOT UNNECESSARILY IMPACT PARK OPERATIONS.
  - WITHIN THE LIMIT OF WORK, ANY INVASIVE PLANT SPECIES ENCOUNTERED SHALL BE REMOVED FOLLOWING RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT BEST MANAGEMENT PRACTICES.
  - ALL DISTURBED AREAS NOT IDENTIFIED FOR A SPECIFIC SURFACE TREATMENT SHALL BE LOAMED AND SEEDED, SEE 8/L3.2.
  - CONTACT DIGSAFE PRIOR TO BEGINNING WORK.
  - AN ELECTRONIC FILE OF THIS DRAWING WILL BE PROVIDED FOR CONTRACTOR LAYOUT PURPOSES.

- ADD ALTERNATES LIST**
- ADD ALTERNATE #1 - RAIN GARDEN ENHANCED PLANTING (BASE BID, AREA TO BE SEEDED WITH SEED SUPPLIED BY THE PARKS DEPARTMENT)
  - ADD ALTERNATE #2 - CONCRETE SIDEWALK (BASE BID 3" BITUMINOUS PAVEMENT SIDEWALKS. RAMP NOT INCLUDED)
  - ADD ALTERNATE #3 - FREE STANDING MINI RAMP (SEE CIVIL DRAWINGS)
  - ADD ALTERNATE #4 - TYPE I PICNIC TABLE. ONE UNIT WITH CONCRETE PAD AS IDENTIFIED ON THE DRAWINGS)
  - ADD ALTERNATE #5 - FURNISH AND INSTALL CONEX CONTAINER (SEE CIVIL DRAWINGS)
  - ADD ALTERNATE #6 - FURNISH AND INSTALL THE RECTANGULAR STEEL TRELLIS INCLUDING FOOTINGS.
  - ADD ALTERNATE #7 - WELDED WIRE FENCE AND GATE (BASE BID - 4' HT. BLACK VINYL COATED CHAIN LINK FENCE AND GATE).



REVISION	DATE	DESCRIPTION

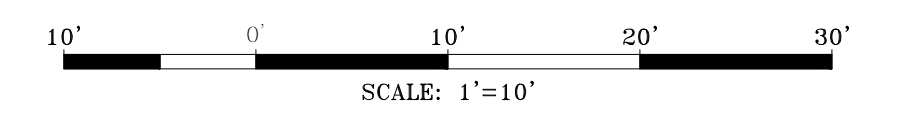
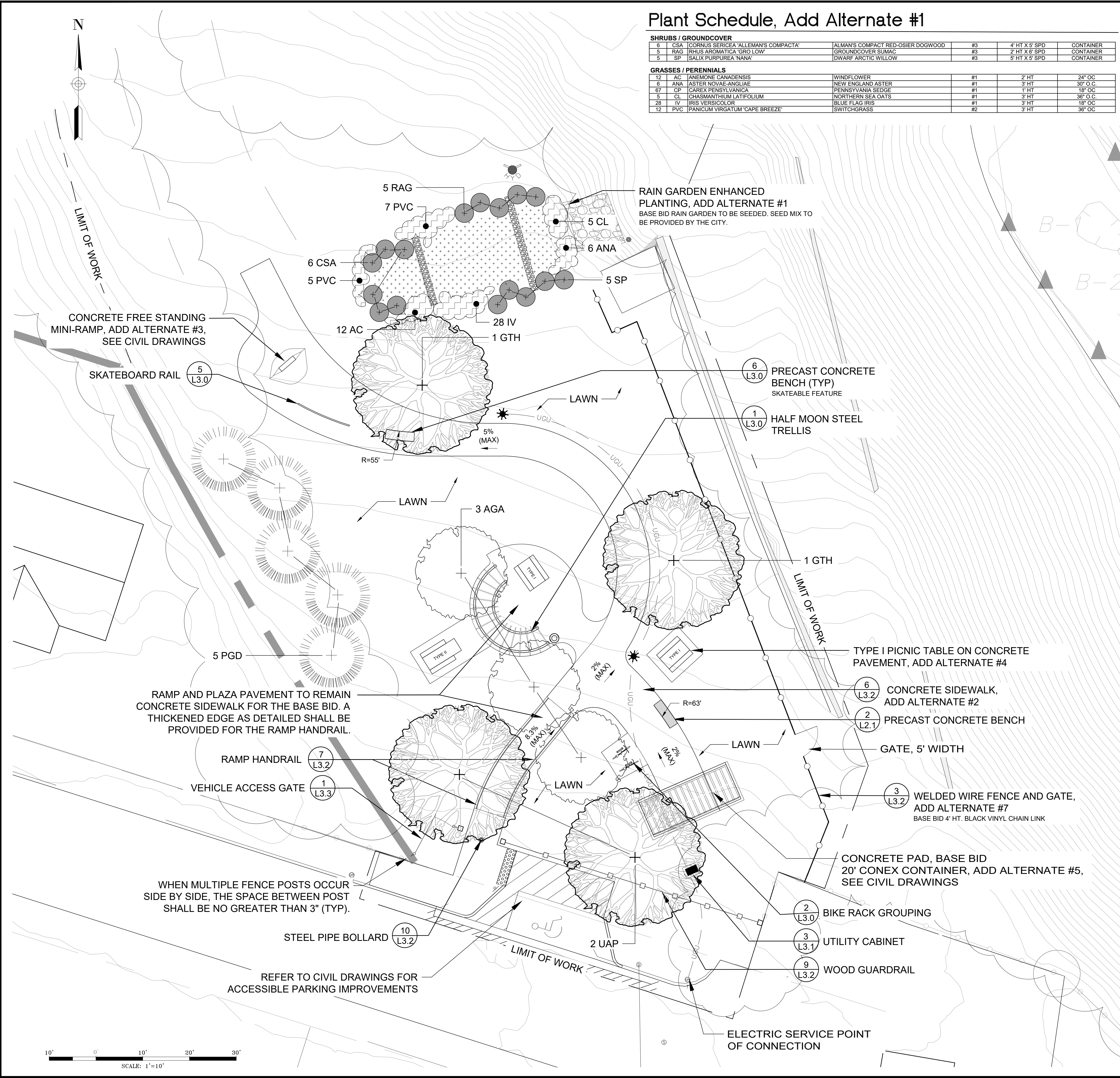
CLIENT:  
**PROVIDENCE PARKS DEPARTMENT**  
1000 ELMWOOD AVENUE  
PROVIDENCE, RI 02907

PROJECT:  
**WOONASQUATUCKET ADVENTURE PARK PHASE II**  
GLENBRIDGE AVENUE  
PROVIDENCE, RHODE ISLAND

TITLE:  
**PLAN ENLARGEMENT A**

ISSUED FOR:	100% SUBMISSION
DATE:	MAY 11, 2023
SCALE:	1"=10'-0"
DRAWN BY:	SW, JRH
CHECKED BY:	JRH
PROJECT NO:	365220361

L2.0



# Plant Schedule, Base Bid

DECIDUOUS SHADE TREES						
QTY.	ABRV.	SCIENTIFIC NAME	COMMON NAME	INSTALLED SIZE	ANTICIPATED SIZE AT MATURITY	REMARKS
2	GTH	GLEDTISIA TRICANTHOS 'INERMIS' 'HALKA'	HALKA HONEYLOCUST	2 1/2"-3" CAL	40' HT X 30' SPD	B&B, HEAVY
1	LT	LIRIODENDRON TULIPIFERA	TULIPTREE	2 1/2"-3" CAL	40' HT X 50' SPD	B&B, HEAVY
2	UAP	ULMUS AMERICANA 'PRINCETON'	PRINCETON AMERICAN ELM	2 1/2"-3" CAL	40' HT X 30' SPD	B&B, HEAVY
DECIDUOUS UNDERSTORY TREES						
3	AGA	AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SERVICEBERRY	2'-2 1/2" GAL.	20' HT X 20' SPD	B&B
EVERGREEN TREES:						
5	PGD	PICEA GLAUCA 'DENSATA'	BLACK HILLS SPRUCE	8'-10' HT	20' HT X 20' SPD	B&B
SHRUBS / GROUNDCOVER						
7	AAR	AMELANCHIER ALNIFOLIA 'REGENT'	REGENT SERVICEBERRY	#7	5' HT X 5' SPD	CONTAINER
14	AUU	ARCTOSTAPHYLOS UVA-URSI	BEARBERRY	#1	6" HT X 4" SPD	CONTAINER
3	AM	ARONIA MELANOCARPA	BLACK CHOKEBERRY	#5	8' HT X 6' SPD	CONTAINER
7	CAH	CLETHRA ALNIFOLIA 'HUMMINGBIRD'	HUMMINGBIRD SUMMERSWEET	#3	3' HT X 4" SPD	CONTAINER
14	CSF	CORNUS SERICEA 'FIREDRANCE'	FIREDRANCE RED OSIER DOGWOOD	#3	3' HT X 5' SPD	CONTAINER
7	JVG	JUNIPERUS VIRGINIANA 'GREY OWL'	GREY OWL EASTERN RED CEDAR	#3	3' HT X 6' SPD	CONTAINER
8	MDC	MICROBIOTA DECUSSATA 'CELTIC PRIDE'	CELTIC PRIDE RUSSIAN CYPRESS	#3	4' HT X 5' SPD	CONTAINER
7	RAG	RHUS AROMATICA 'GRO LOW'	GROUNDCOVER SUMAC	#3	2' HT X 6' SPD	CONTAINER
GRASSES / PERENNIALS						
67	CP	CAREX PENNSYLVANICA	PENNSYLVANIA SEDGE	#1	1' HT	18" OC

**GENERAL NOTES:**

- SEE CIVIL DRAWINGS FOR INFORMATION NOT DEPICTED ON THE LANDSCAPE DRAWINGS, INCLUDING EXTENT OF DISTURBANCE / LIMIT OF WORK.
- SEE L2.0 AND L2.1 FOR THE PLANT SCHEDULES.
- SEE L3.0-L3.4 FOR LANDSCAPE CONSTRUCTION DETAILS AND NOTES.
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- WITHIN THE LIMIT OF WORK, ANY INVASIVE PLANT SPECIES ENCOUNTERED SHALL BE REMOVED FOLLOWING RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT BEST MANAGEMENT PRACTICES.
- ALL DISTURBED AREAS NOT IDENTIFIED FOR A SPECIFIC SURFACE TREATMENT SHALL BE LOAMED AND SEEDED. SEE 8/L3.2.
- CONTACT DIGSAFE PRIOR TO BEGINNING WORK.
- AN ELECTRONIC FILE OF THIS DRAWING WILL BE PROVIDED FOR CONTRACTOR LAYOUT PURPOSES.

**ADD ALTERNATES LIST**

ADD ALTERNATE #1- RAIN GARDEN ENHANCED PLANTING (BASE BID, AREA TO BE SEEDED WITH SEED SUPPLIED BY THE PARKS DEPARTMENT)

ADD ALTERNATE #2 - CONCRETE SIDEWALK (BASE BID 3" BITUMINOUS PAVEMENT SIDEWALKS. RAMP NOT INCLUDED)

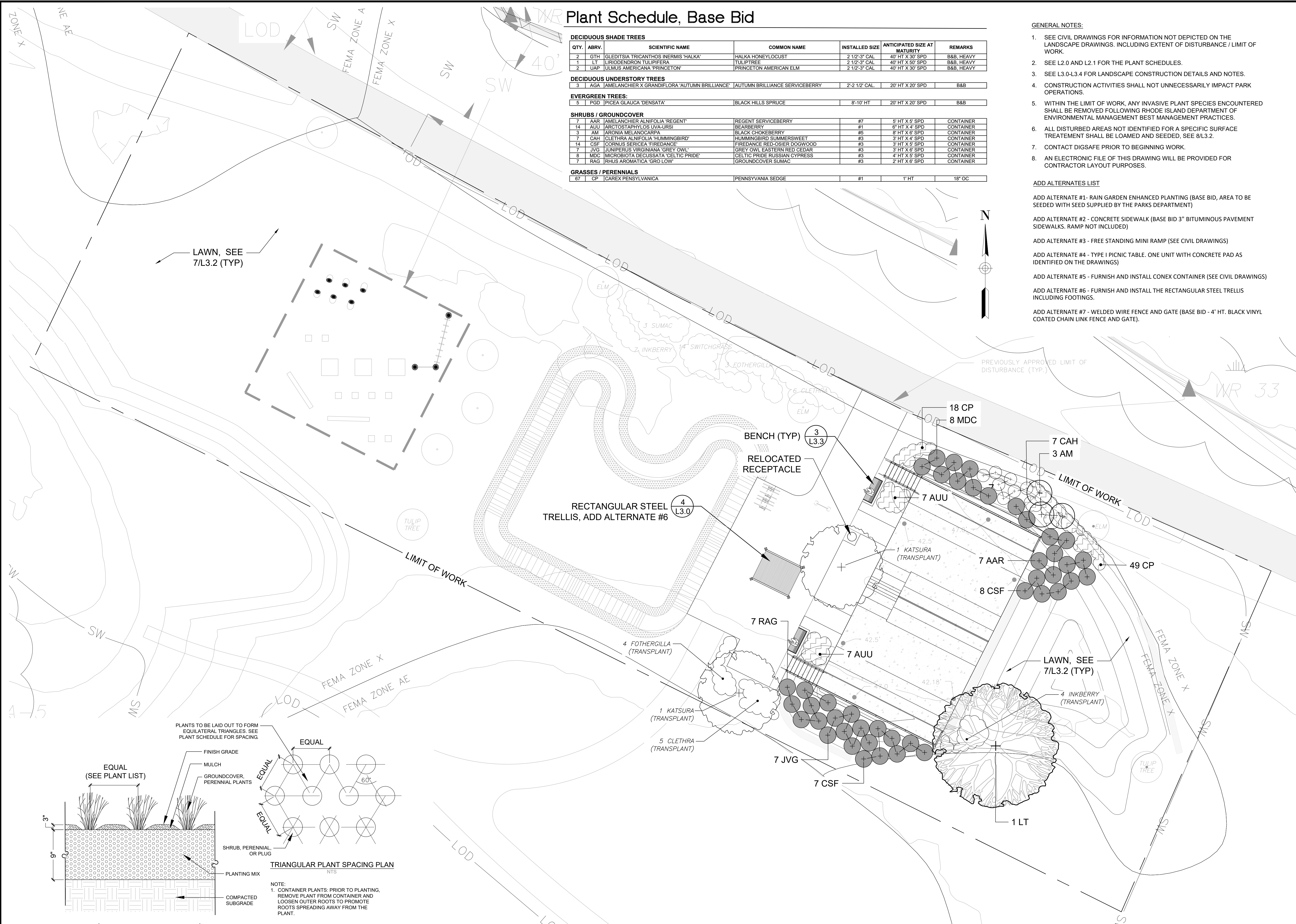
ADD ALTERNATE #3 - FREE STANDING MINI RAMP (SEE CIVIL DRAWINGS)

ADD ALTERNATE #4 - TYPE I PICNIC TABLE. ONE UNIT WITH CONCRETE PAD AS IDENTIFIED ON THE DRAWINGS)

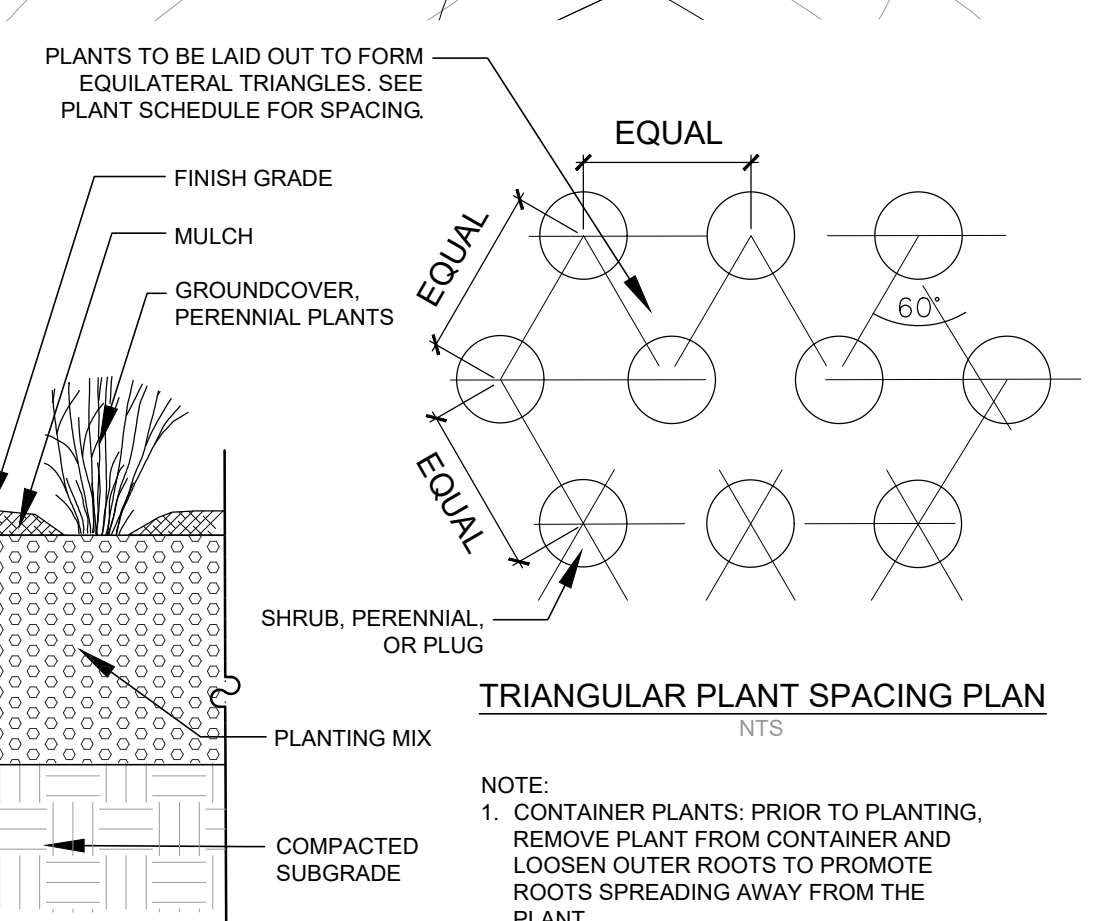
ADD ALTERNATE #5 - FURNISH AND INSTALL CONEX CONTAINER (SEE CIVIL DRAWINGS)

ADD ALTERNATE #6 - FURNISH AND INSTALL THE RECTANGULAR STEEL TRELLIS INCLUDING FOOTINGS.

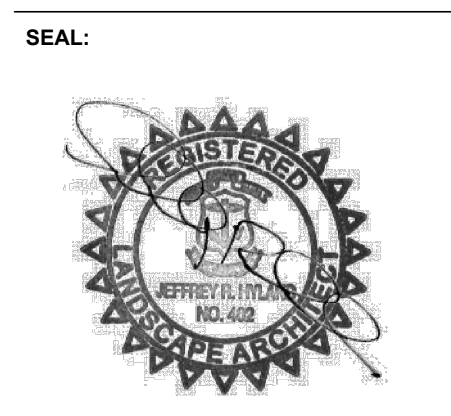
ADD ALTERNATE #7 - WELDED WIRE FENCE AND GATE (BASE BID - 4' HT. BLACK VINYL COATED CHAIN LINK FENCE AND GATE).



LAWN, SEE 7/L3.2 (TYP)



**Perennial / Orn. Grass / Ground Cover Planting** 1  
Not to Scale ©IRONWOOD 2023 L2.1



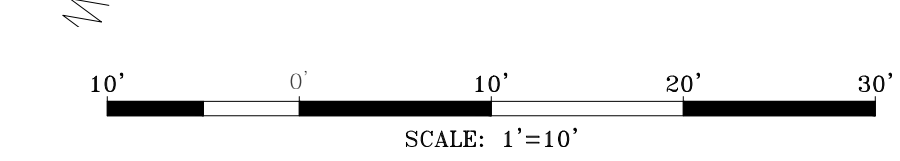
REVISION	DATE	DESCRIPTION

CLIENT:  
**PROVIDENCE PARKS DEPARTMENT**  
1000 ELMWOOD AVENUE  
PROVIDENCE, RI 02907

PROJECT:  
**WOONASQUATUCKET ADVENTURE PARK PHASE II**  
GLENBRIDGE AVENUE  
PROVIDENCE, RHODE ISLAND

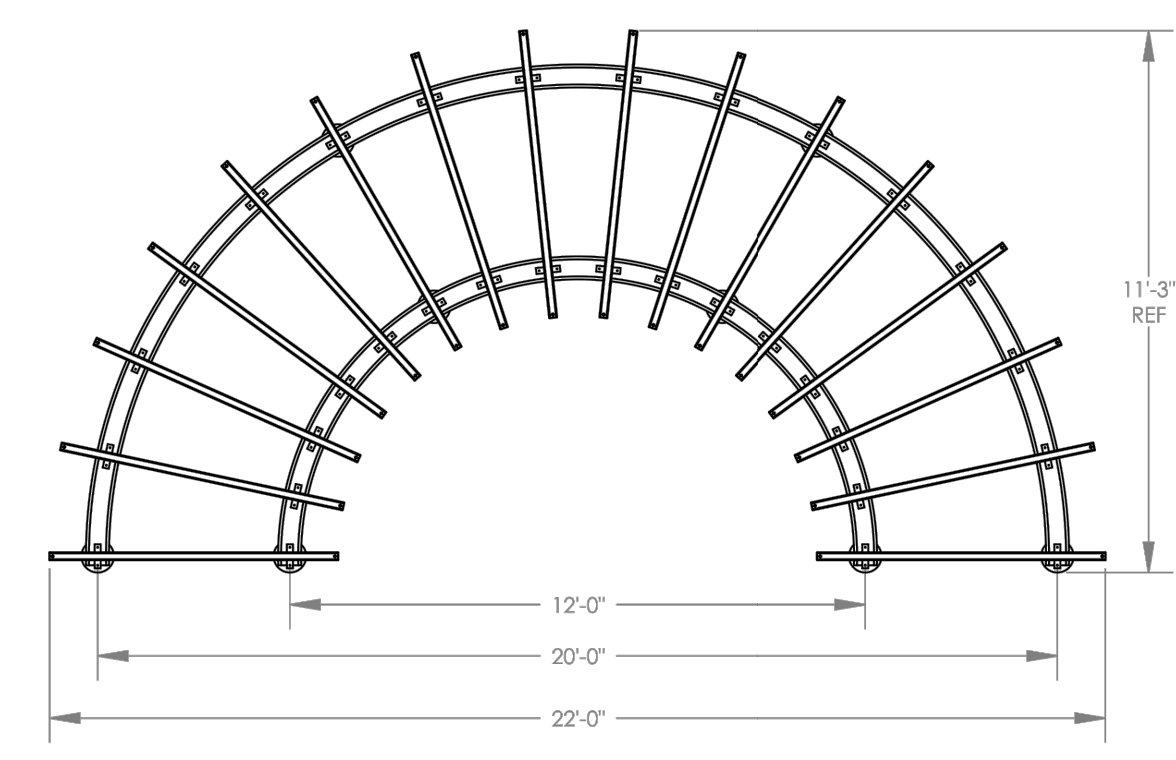
TITLE:  
**PLAN ENLARGEMENT B**

ISSUED FOR: 100% SUBMISSION  
DATE: MAY 11, 2023  
SCALE: 1"=10'-0"  
DRAWN BY: SW, JRH  
CHECKED BY: JRH  
PROJECT NO: 365220361



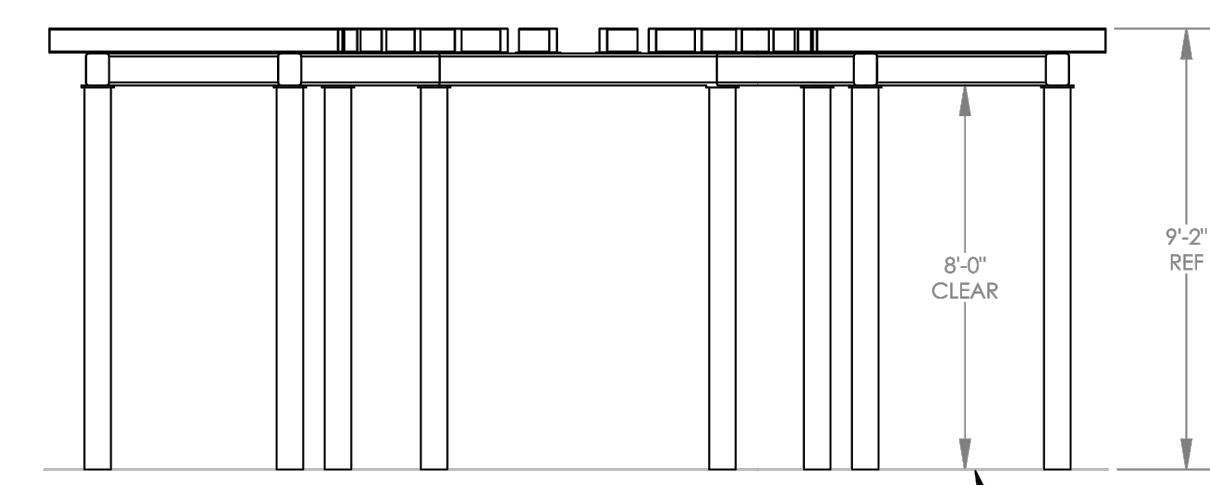
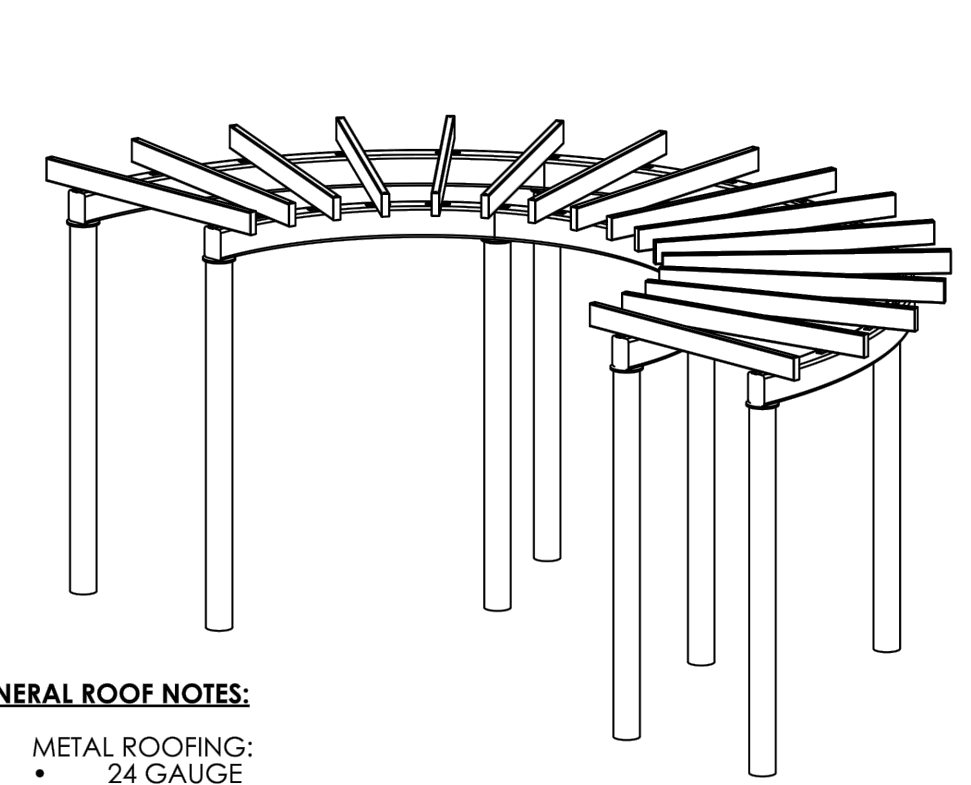
**L2.1**





**GENERAL ROOF NOTES:**

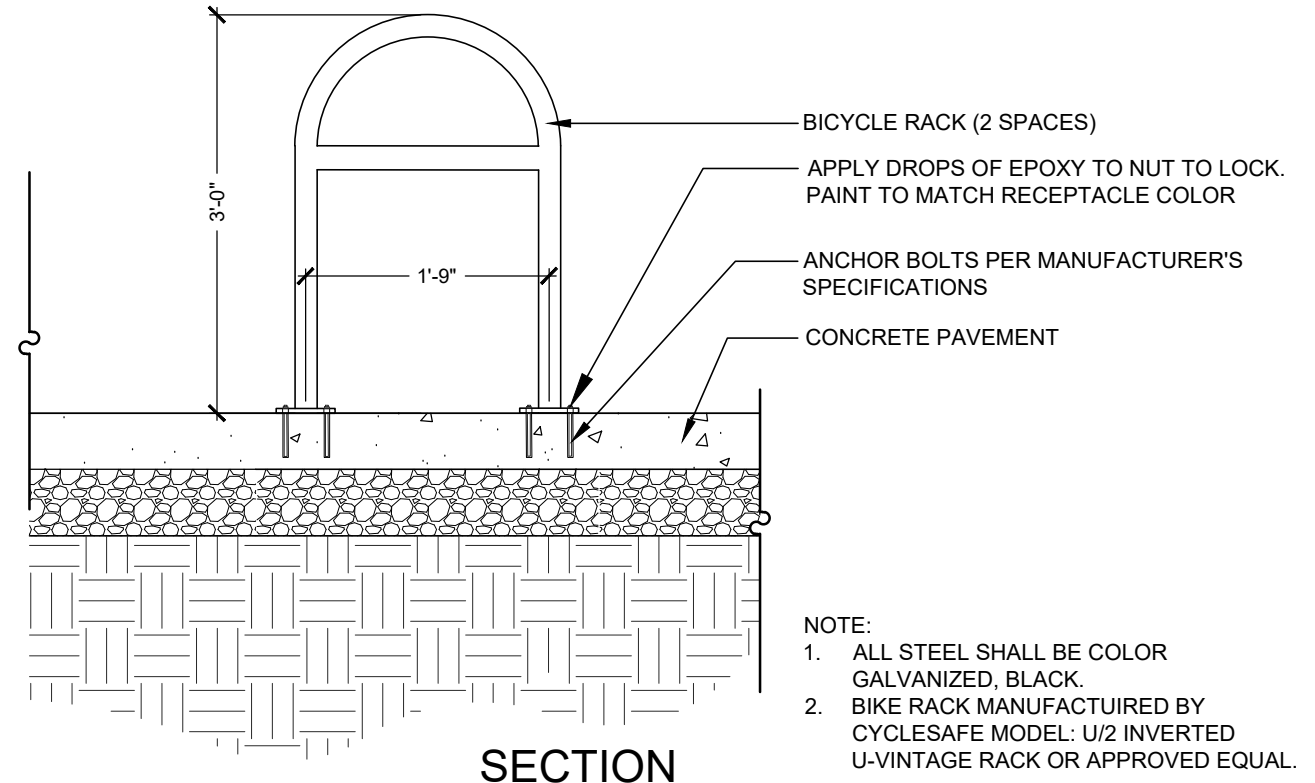
- METAL ROOFING:
  - 24 GAUGE
  - GALVALUME COATED
  - KYNAR 500 PAINTED
- TRIM COLOR MATCHES ROOF
- SEE POLYGON.COM FOR COLOR OPTIONS



FINISH GRADE MOUNTING VARIES BASED ON ENGINEERING REQUIREMENTS.

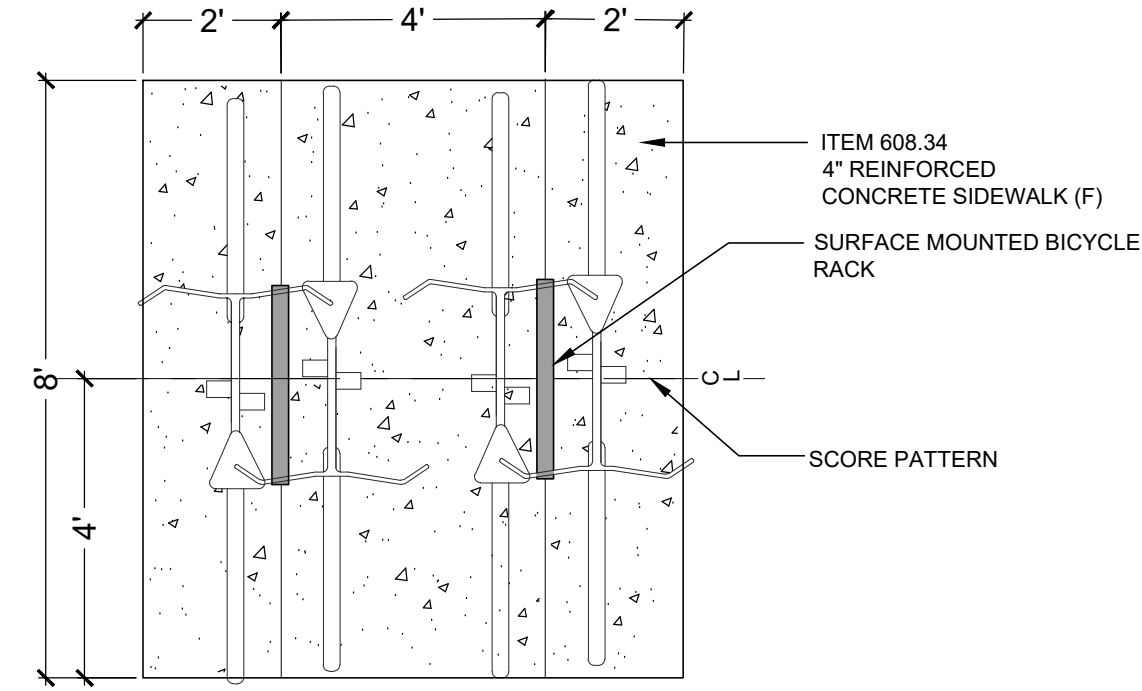
**NOTES:**

- CITY OF PROVIDENCE WILL PURCHASE THE TRELLIS DIRECT FROM THE MANUFACTURER. IT WILL BE DELIVERED TO THE PARKS DEPARTMENT FACILITY AT ROGER WILLIAMS PARK.
- THE SELECTED CONTRACTOR WILL PICK-UP, DELIVER, AND INSTALL THE TRELLIS AS SHOWN AND AS SPECIFIED, INCLUDING ALL NECESSARY SITE WORK AND THE INSTALLATION OF FOOTINGS.
- MANUFACTURER TO PROVIDE FOOTING DESIGN AT THE TIME OF ORDERING.

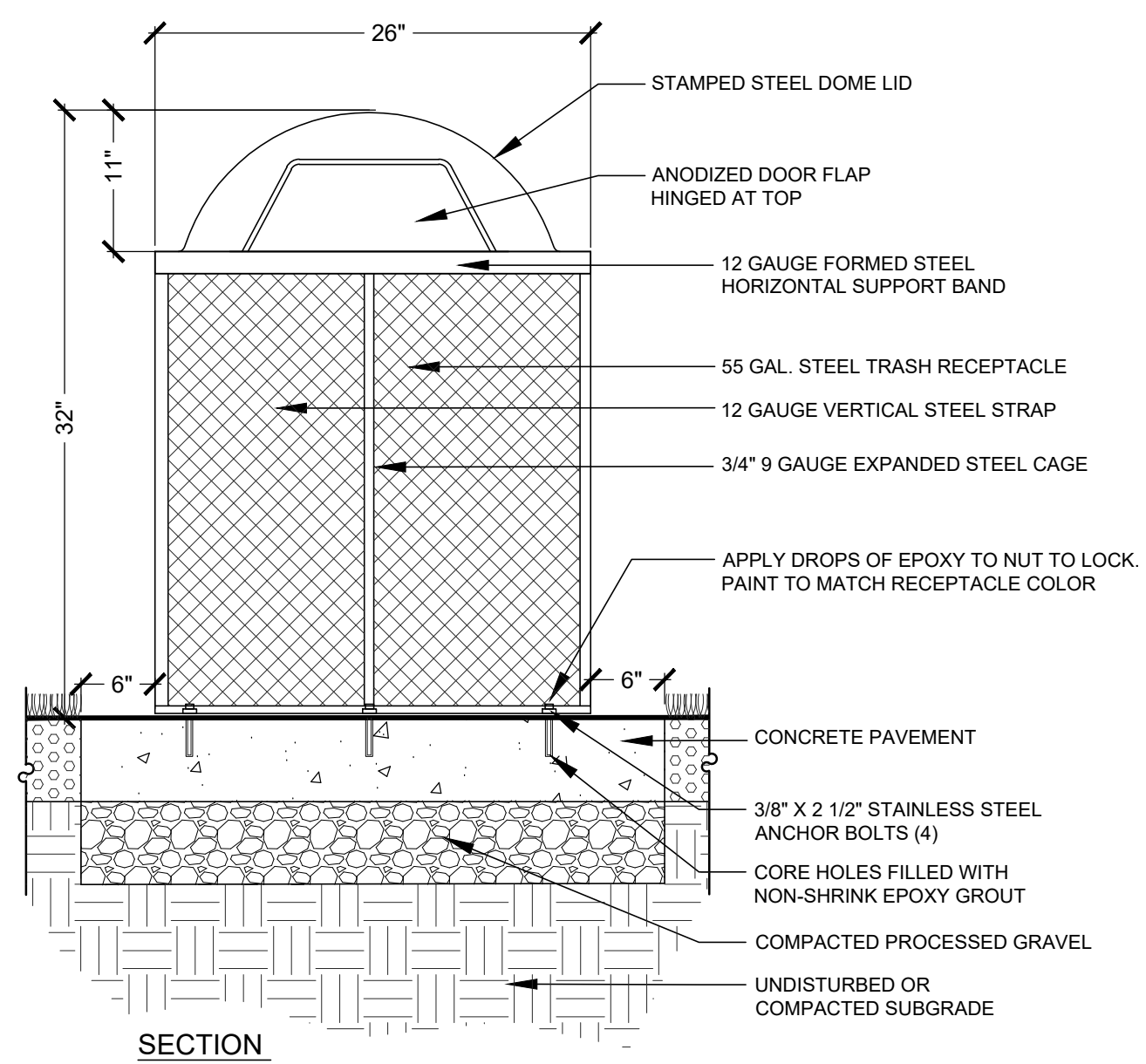


**SECTION**

- NOTE:**
- ALL STEEL SHALL BE COLOR GALVANIZED, BLACK
  - BIKE RACK MANUFACTURED BY CYCLESAFE MODEL: U/2 INVERTED U-VINTAGE RACK OR APPROVED EQUAL.



**PLAN**



**SECTION**

- NOTES:**
- TRASH RECEPTACLE MANUFACTURED BY THE CARY COMPANY OR EQUAL.
  - PROVIDE 55 GAL. DRUM LINER.
  - ALL METAL TO BE FINISHED WITH A POLYESTER POWDER COAT IN BLACK.
  - CONCRETE PAD UNDER RECEPTACLE SHALL BE INSTALLED FLUSH TO SURROUNDING SURFACE.
  - CONCRETE PADS FOR THE RECEPTACLE MEASURES 3'X3'.

**Half Moon Steel Trellis**

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1  
L3.0

**Bike Rack Grouping**

Not to Scale

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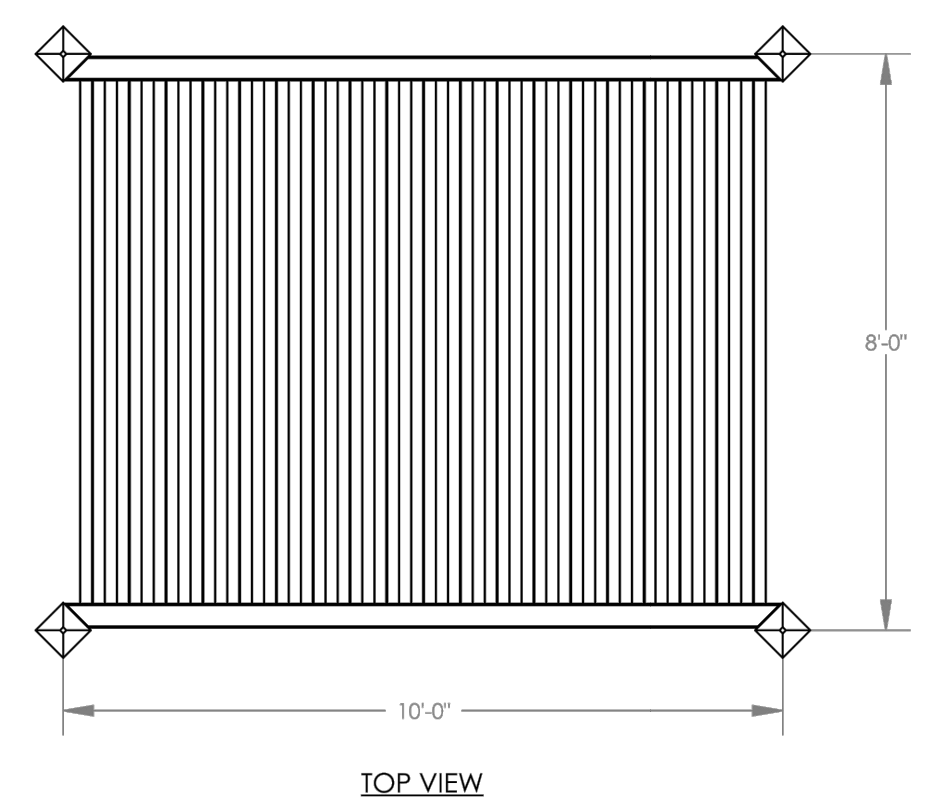
2  
L3.0

**Trash Receptacle**

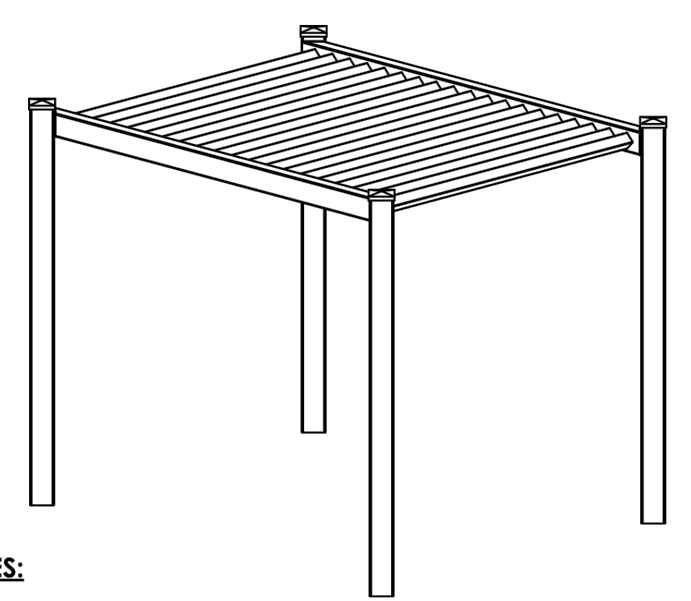
Not to Scale

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3  
L3.0



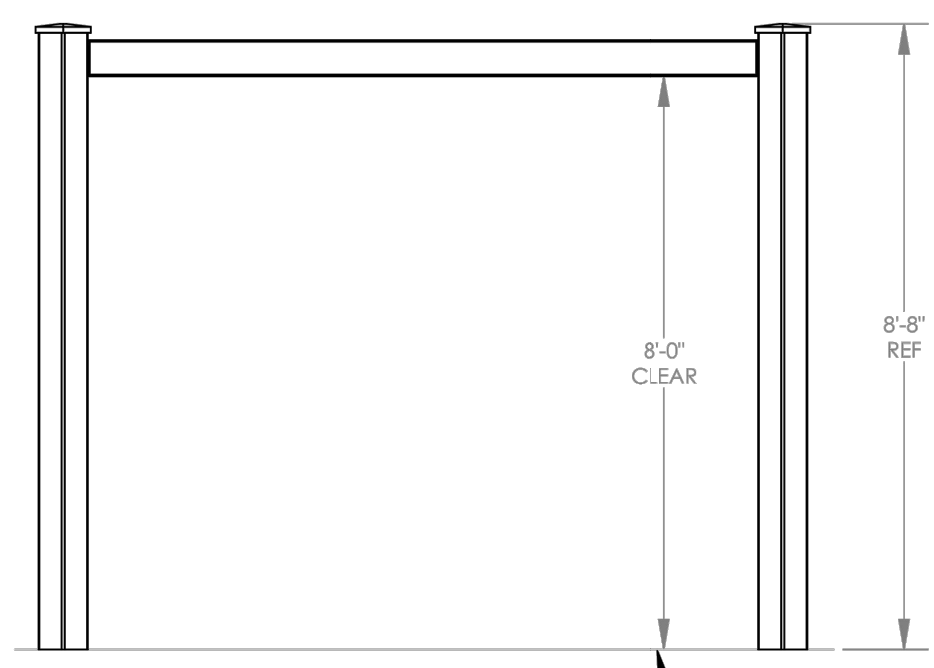
**TOP VIEW**



**ISOMETRIC VIEW**

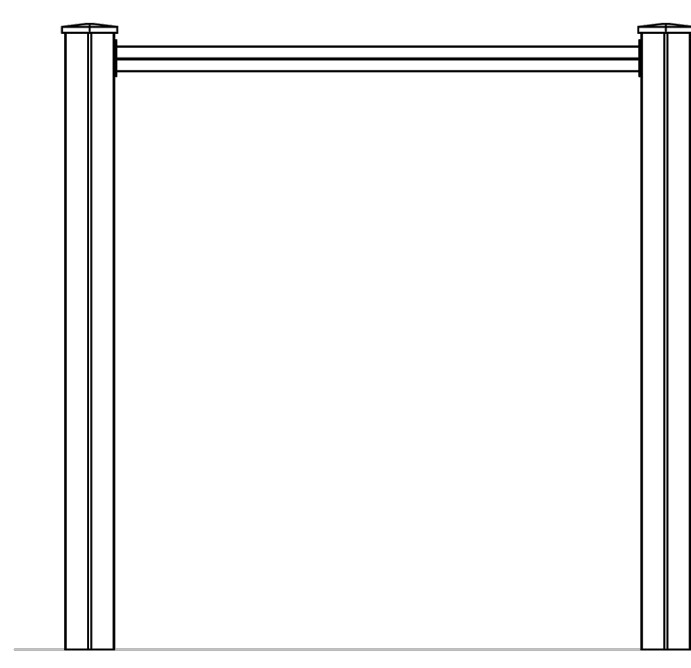
**GENERAL ROOF NOTES:**

- METAL ROOFING:
  - 24 GAUGE
  - GALVALUME COATED
  - KYNAR 500 PAINTED
- TRIM COLOR MATCHES ROOF
- SEE POLYGON.COM FOR COLOR OPTIONS



**FRONT VIEW**

FINISH GRADE MOUNTING VARIES BASED ON ENGINEERING REQUIREMENTS.



**SIDE VIEW**

**NOTES:**

- THE SELECTED CONTRACTOR SHALL BE RESPONSIBLE FOR PURCHASING THE RECTANGULAR STEEL TRELLIS.
- THE SELECTED CONTRACTOR WILL DELIVER AND INSTALL THE TRELLIS AS SHOWN AND AS SPECIFIED, INCLUDING ALL NECESSARY SITE WORK AND THE INSTALLATION OF FOOTINGS.
- MANUFACTURER TO PROVIDE FOOTING DESIGN AT THE TIME OF ORDERING.

**Rectangular Steel Trellis, Add Alternate #6**

Not to Scale

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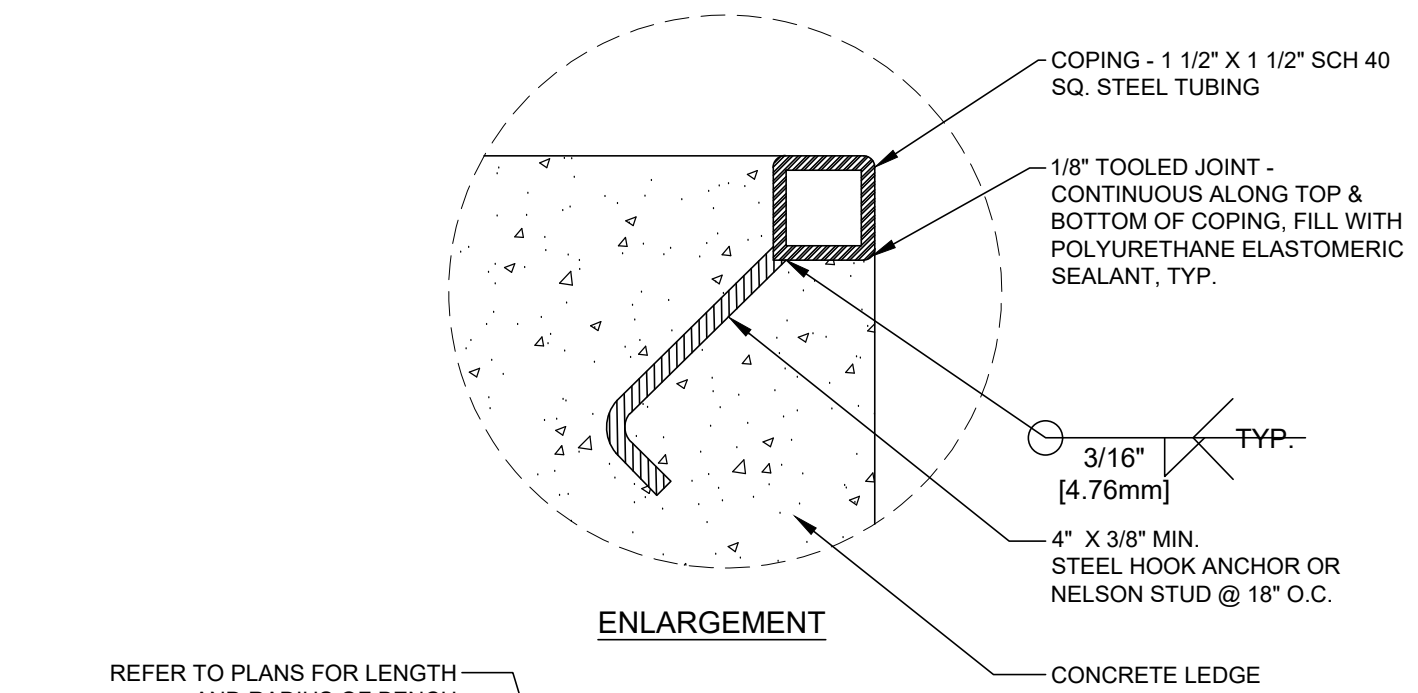
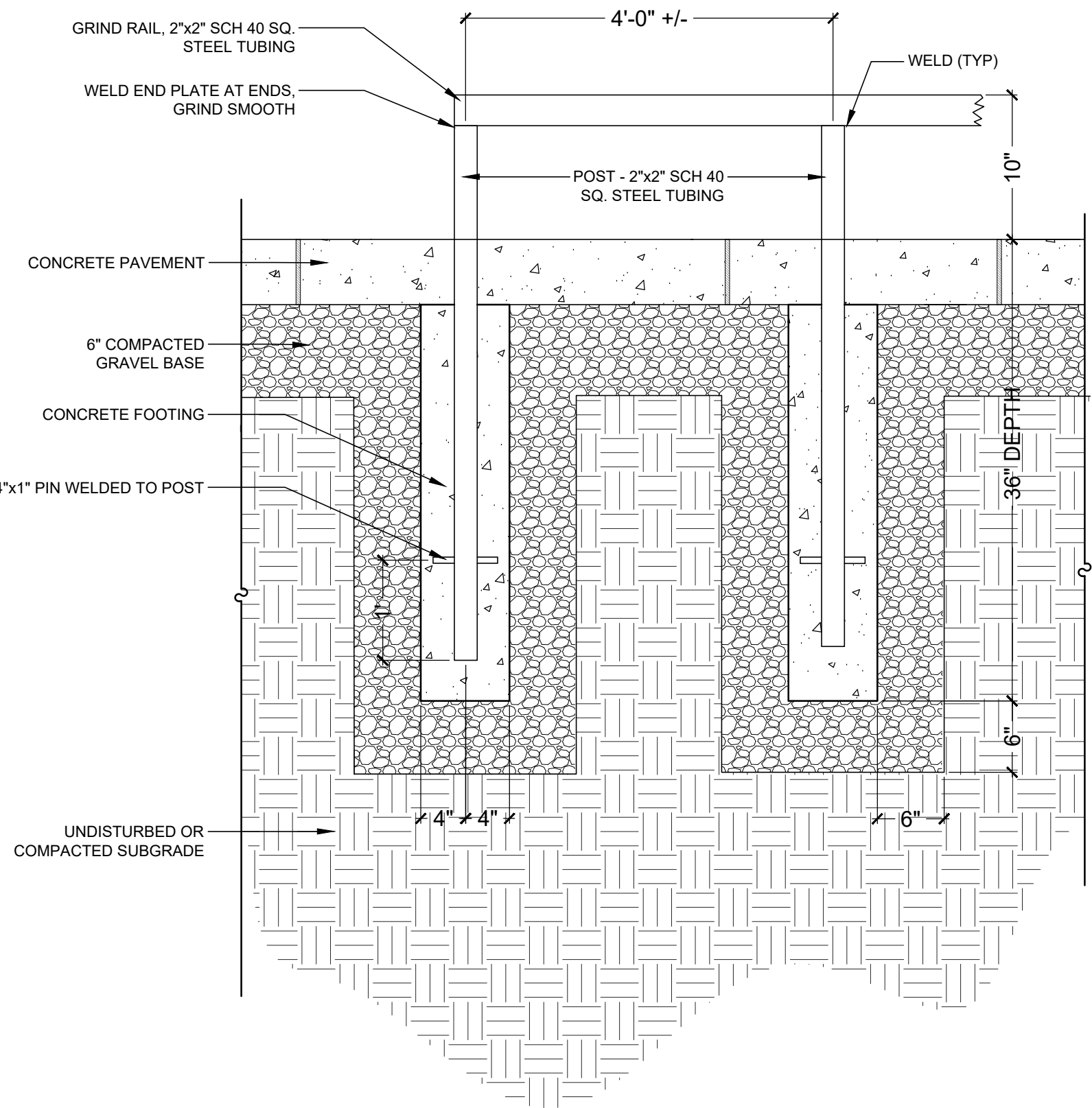
4  
L3.0

**Skateboard Rail**

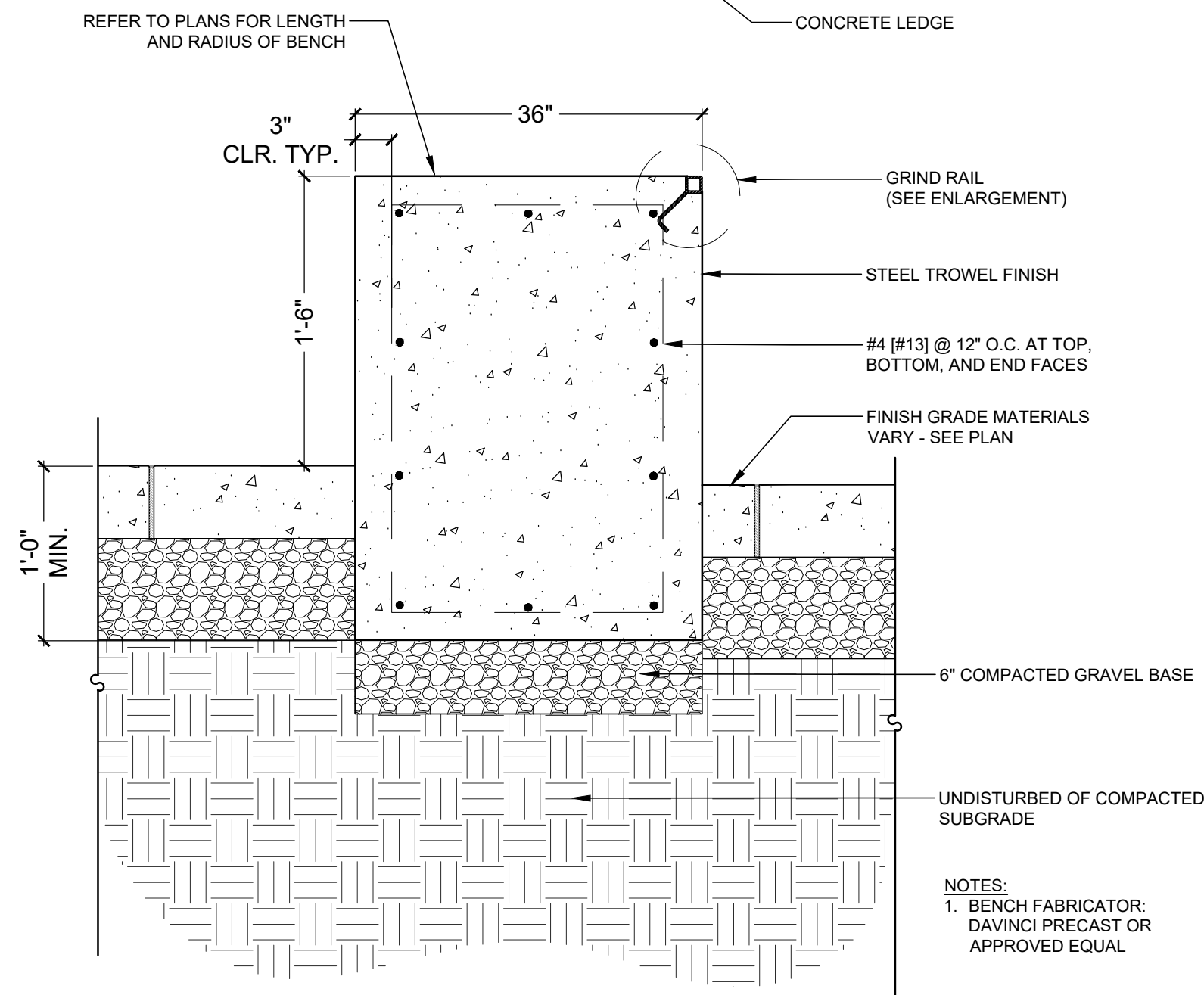
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5  
L3.0



**ENLARGEMENT**



- NOTES:**
- BENCH FABRICATOR: DAVINCI PRECAST OR APPROVED EQUAL

**Precast Concrete Bench (with Steel Nosing)**

Not to Scale

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6  
L3.0

**SEAL:**



**REVISION DATE DESCRIPTION**

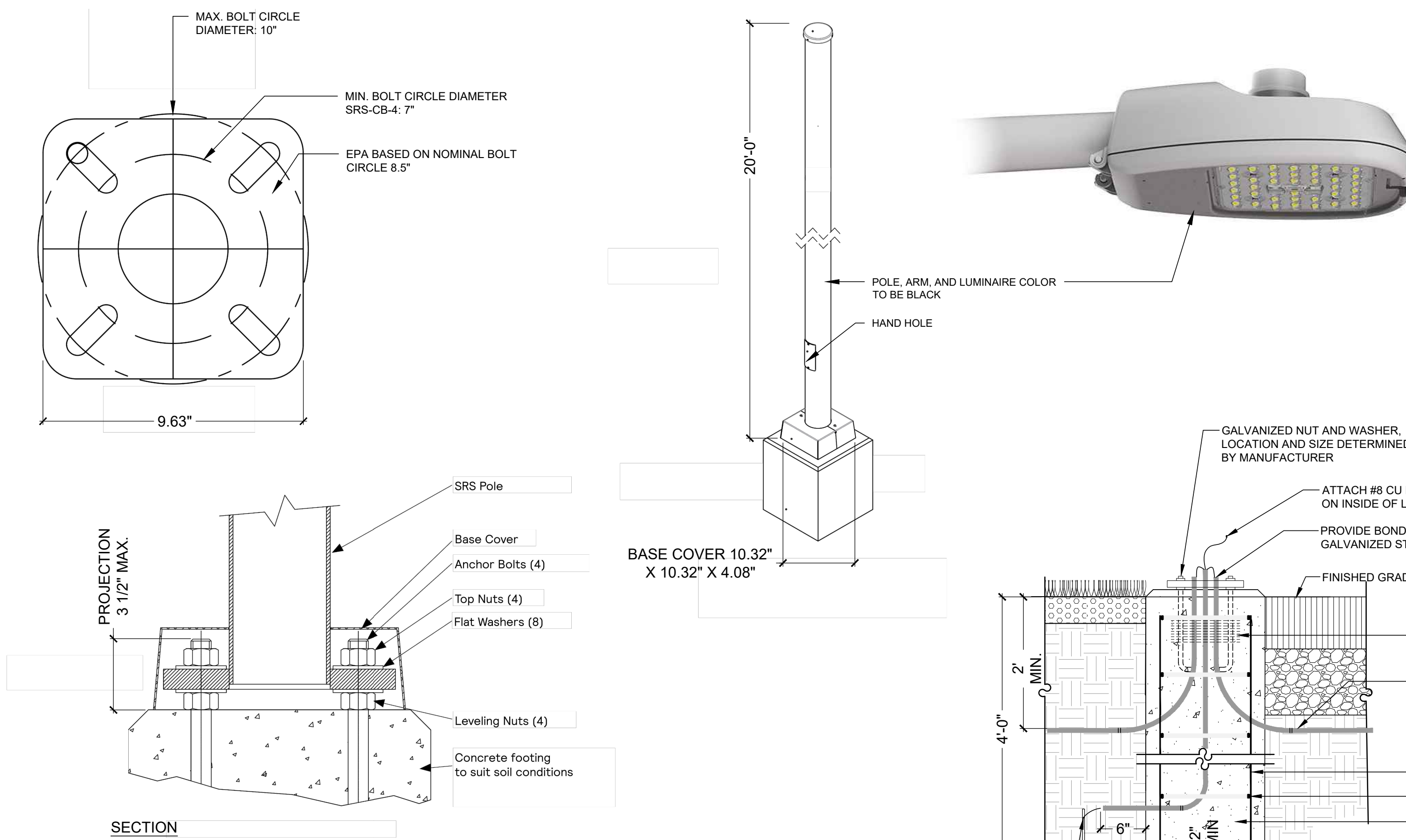
**CLIENT:**  
**PROVIDENCE PARKS DEPARTMENT**  
 1000 ELMWOOD AVENUE  
 PROVIDENCE, RI 02907

**PROJECT:**  
**WOONASQUATUCKET ADVENTURE PARK PHASE II**  
 GLENBRIDGE AVENUE  
 PROVIDENCE, RHODE ISLAND

**TITLE:**  
**LANDSCAPE DETAILS**

**ISSUED FOR:** 100% SUBMISSION  
**DATE:** MAY 11, 2023  
**SCALE:** AS NOTED  
**DRAWN BY:** SW, JRH  
**CHECKED BY:** JRH  
**PROJECT NO:** 365220261

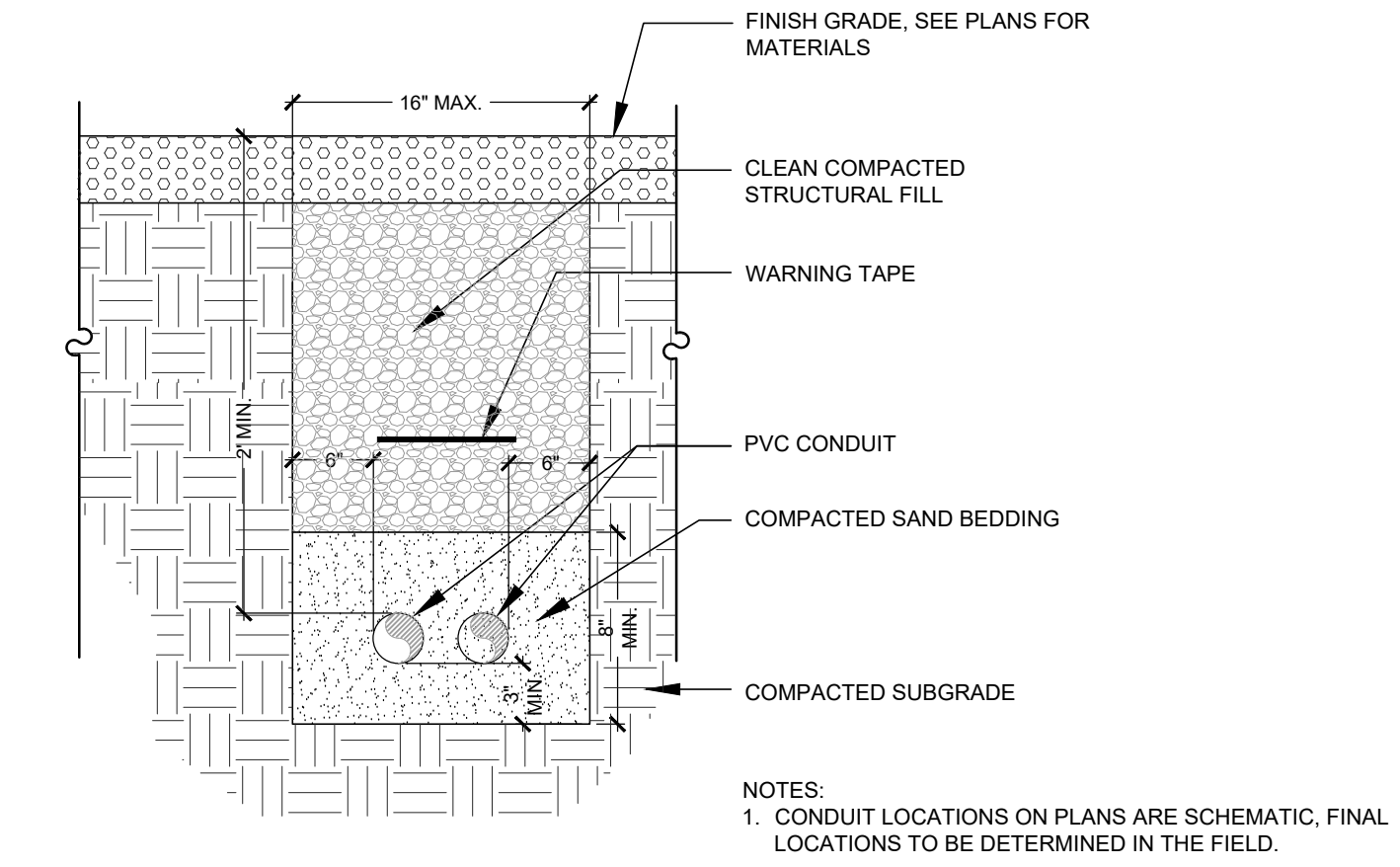
**L3.0**



- NOTES:
- LUMINAIRE: LUMECA ROAD FOCUS PLUS RPS COBRA HEAD (SMALL) COLOR BLACK. MODEL#: RPS-95W30LED730-G1-5-UNV-SRD-2C-FAWS-NRC-PHXL-SP2-BK
  - POLE GARDCO MODEL #SRS-CB-4-11-20-D1-DT5-BK
  - SHORT REACH BRACKET: MODEL#: RLAR, COLOR BLACK
  - LOCAL MANUFACTURER'S SALES REPRESENTATIVE: APEX LIGHTING SOLUTIONS, WWW.APEXLIGHTINGSOLUTIONS.COM OR 401.808.6855
  - FACTORY SUPPLIED TEMPLATE MUST BE USED WHEN SETTING ANCHOR BOLTS. GARDCO WILL NOT HONOR ANY CLAIM FOR INCORRECT ANCHORAGE PLACEMENT FROM FAILURE TO USE FACTORY SUPPLIED TEMPLATES.
  - GROUTING SHOULD INCLUDE A DRAINAGE SLOT OR TUBE (BY OTHERS) TO PERMIT WATER TO DRAIN FROM THE BASE OF THE POLE. FAILURE TO PROVIDE DRAINAGE MAY WEAKEN THE POLE BASE STRUCTURE OVER TIME AND MAY RESULT IN POLE BASE FAILURE, FOR WHICH GARDCO IS NOT RESPONSIBLE.

EXOTHERMICALLY WELD #8 CU BONDING WIRE TO 3/4" X 8" LONG, DRIVEN, COPPER CLAD STEEL CORE, GROUNDING ROD (EACH LIGHT)

- NOTES:
- ANCHOR BOLT TYPE, SIZE, CONFIGURATION TO BE CONFIRMED BY THE LIGHT POLE MANUFACTURER.
  - EACH POLE SHALL INCLUDE A GROUNDING ROD, GROUND WIRE, AND ATTACHMENT HARDWARE TO MEET NATIONAL ELECTRICAL CODE AND POLE MANUFACTURER SPECIFICATIONS.
  - PVC AND RIGID STEEL ELECTRICAL CONDUIT SHALL BE LAID IN SAND WITH WARNING TAPE.
  - IF PAVEMENT AROUND LIGHT POLE IS SLOPING, CONTRACTOR SHALL CONFIRM THAT BASE WILL SIT SECURELY ON FOOTING AND/OR PAVEMENT.

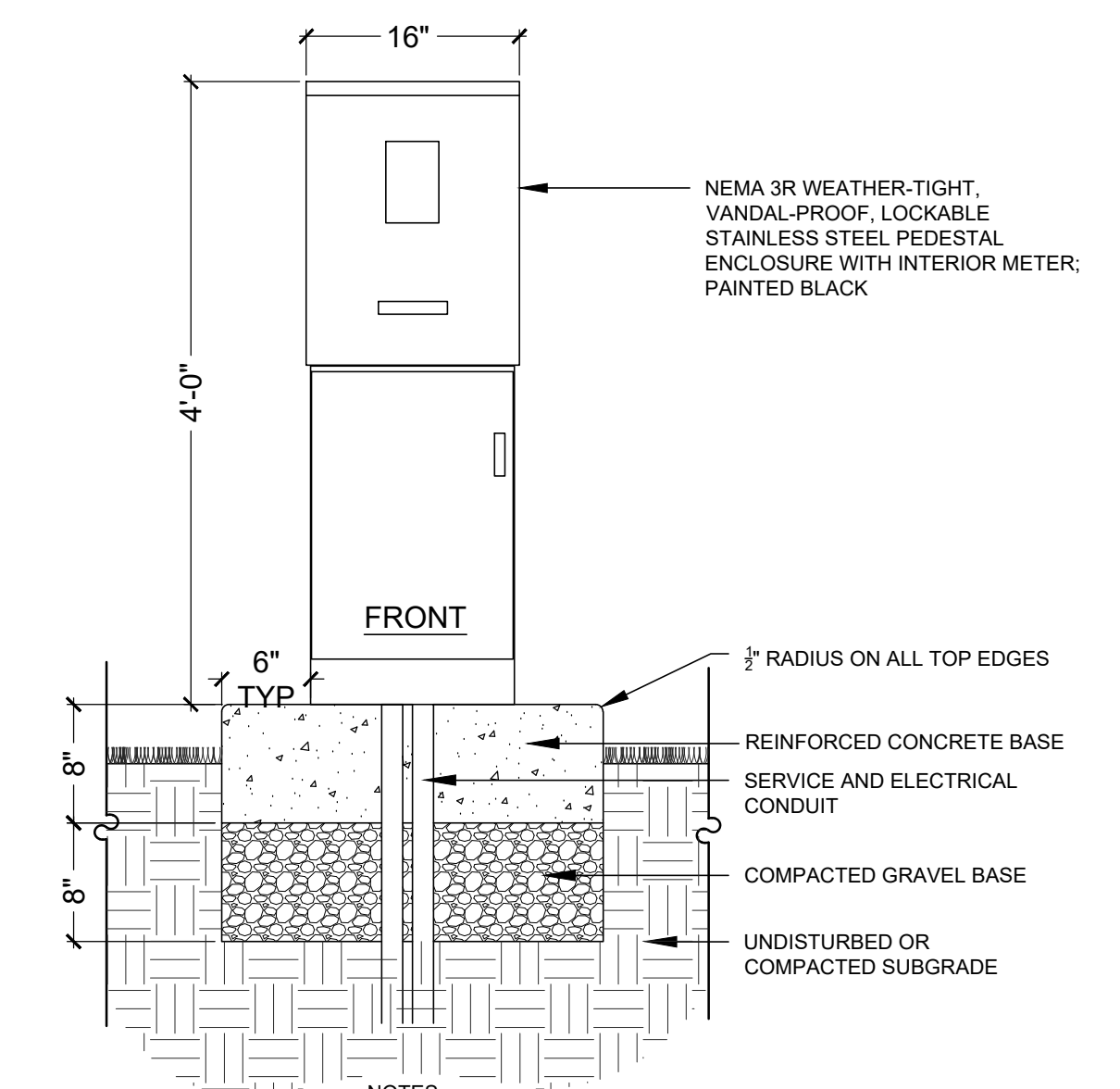


- NOTES:
- CONDUIT LOCATIONS ON PLANS ARE SCHEMATIC, FINAL LOCATIONS TO BE DETERMINED IN THE FIELD.

### Standard Electrical Trench

Not to Scale

1  
L3.1



- NOTES:
- ELECTRICAL CABINET SHALL MILBANK MODEL #CP385110A8KSL2 OR EQUAL.
  - EACH CABINET SHALL INCLUDE A GROUNDING ROD, GROUND WIRE, AND ATTACHMENT HARDWARE TO MEET NATIONAL ELECTRICAL CODE AND POLE MANUFACTURER SPECIFICATIONS.
  - CABINET FINISH COLOR SHALL BE BLACK.

### Electrical Cabinet

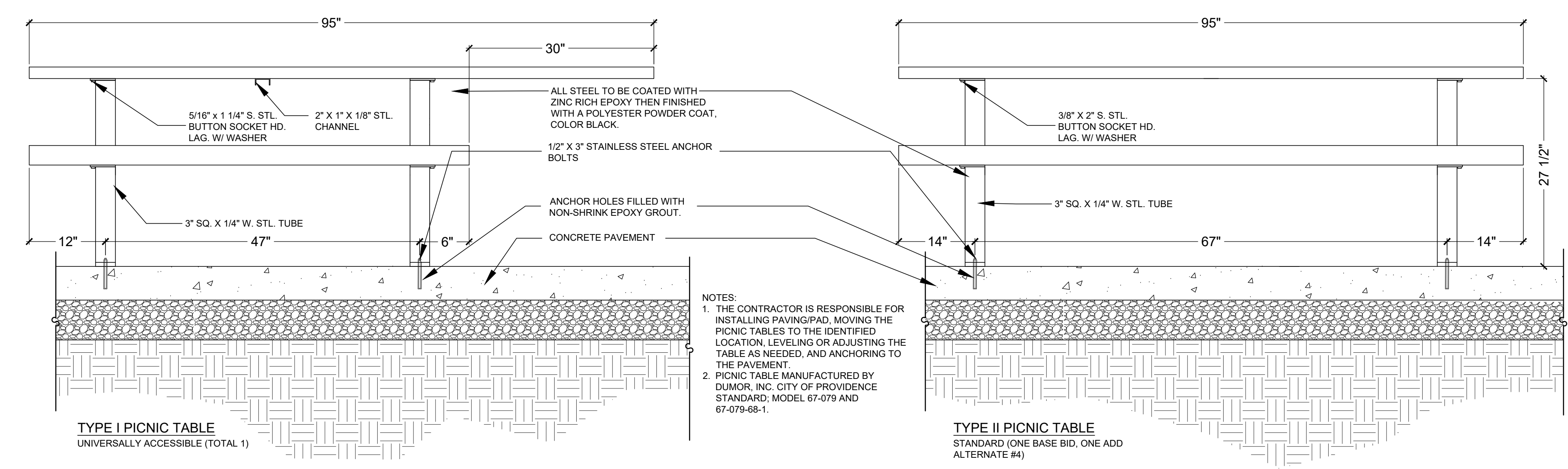
Not to Scale

3  
L3.1

### Cobra Head Area Light

Not to Scale

2  
L3.1

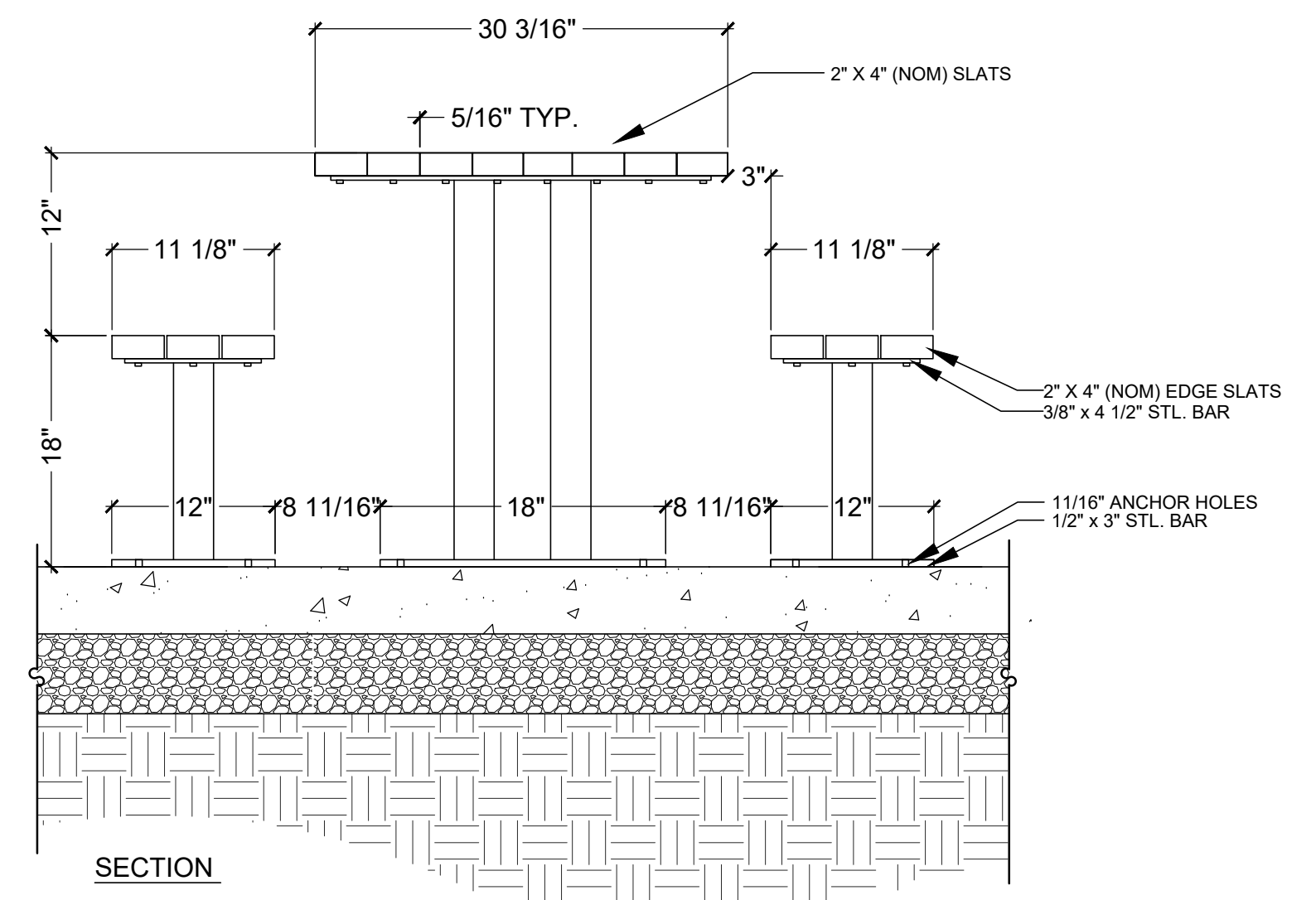


- NOTES:
- THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING PAVING/PAD, MOVING THE PICNIC TABLES TO THE IDENTIFIED LOCATION, LEVELING OR ADJUSTING THE TABLE AS NEEDED, AND ANCHORING TO THE PAVEMENT.
  - PICNIC TABLE MANUFACTURED BY DIMJOR, INC. CITY OF PROVIDENCE STANDARD, MODEL 67-079 AND 67-079-68-1.

### Picnic Table

Not to Scale

4  
L3.1



SECTION



REVISION	DATE	DESCRIPTION

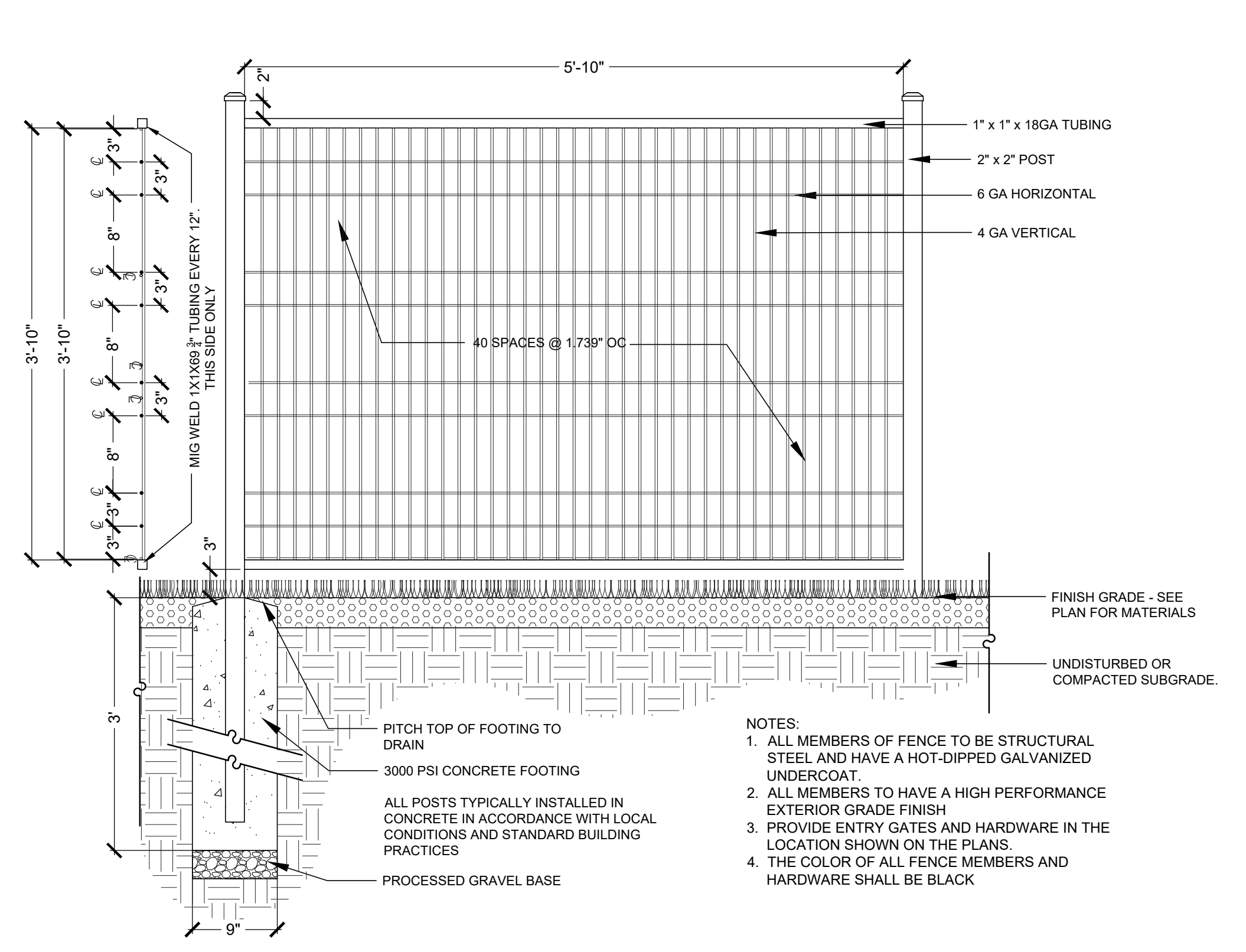
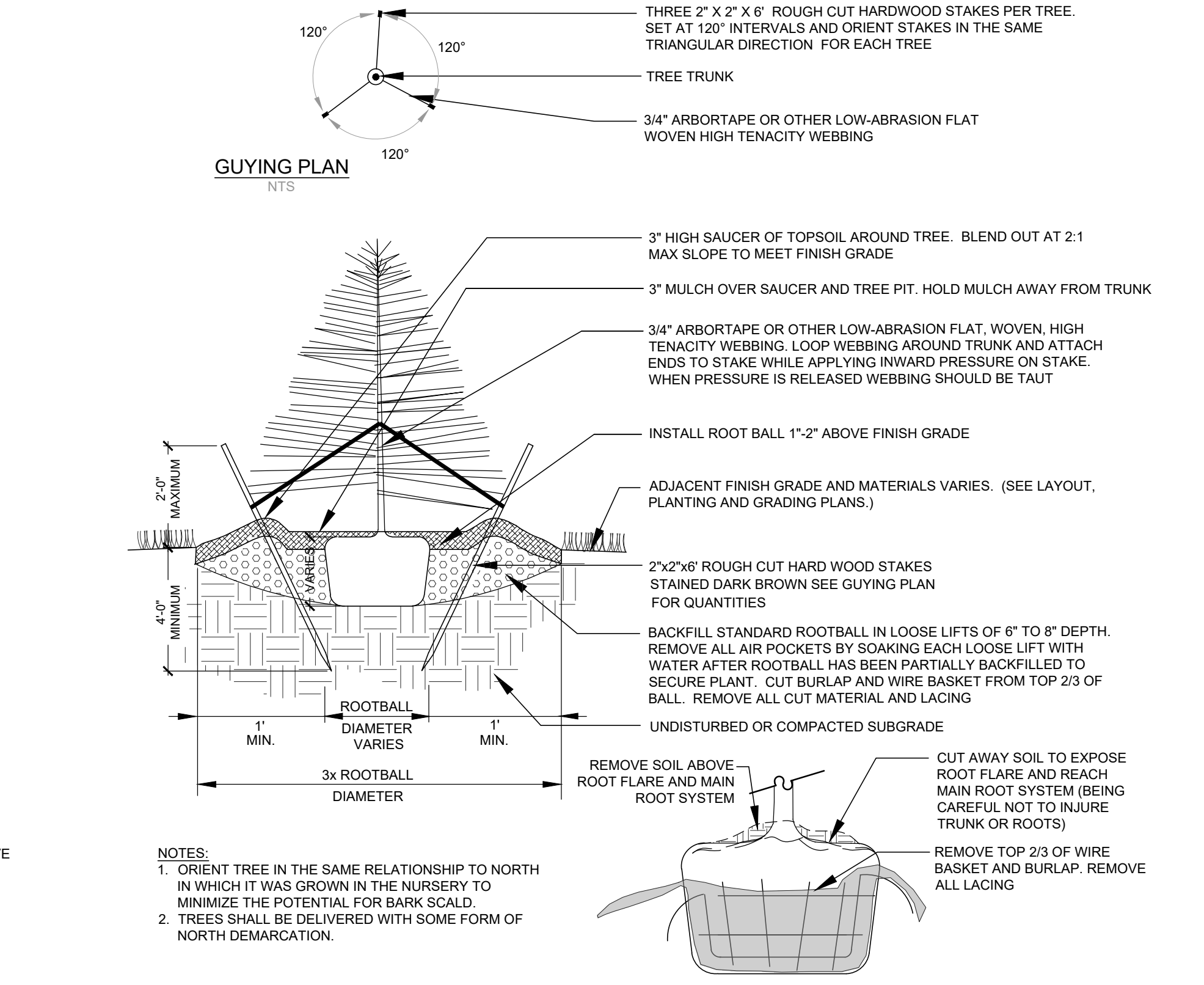
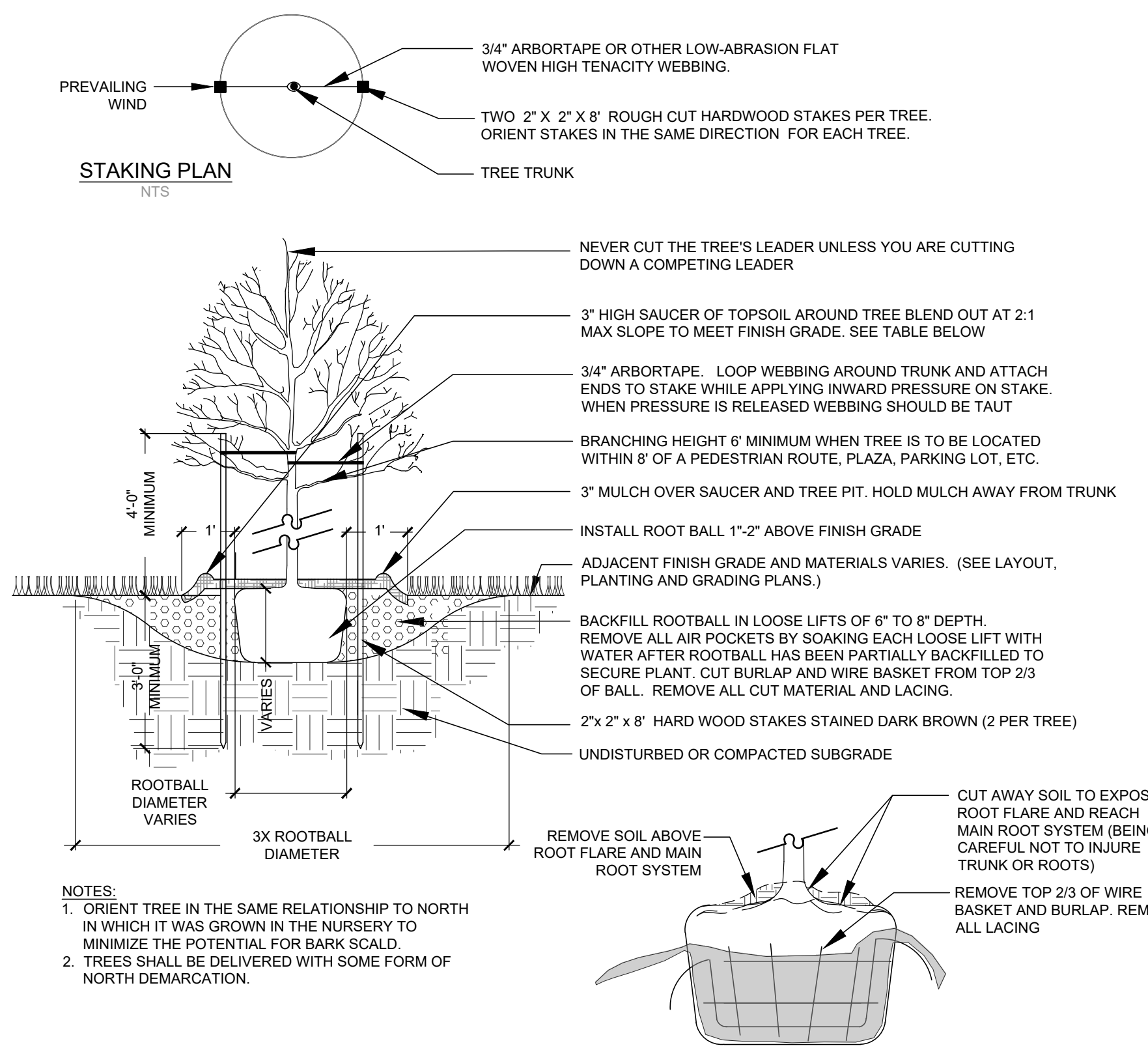
CLIENT:  
**PROVIDENCE PARKS DEPARTMENT**  
1000 ELMWOOD AVENUE  
PROVIDENCE, RI 02907

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CHECKED BY: JRH  
PROJECT NO: 355220361

L3.1



**Deciduous Single-Stemmed Tree Planting**

Not to Scale

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**1 Evergreen Tree Planting**

Not to Scale

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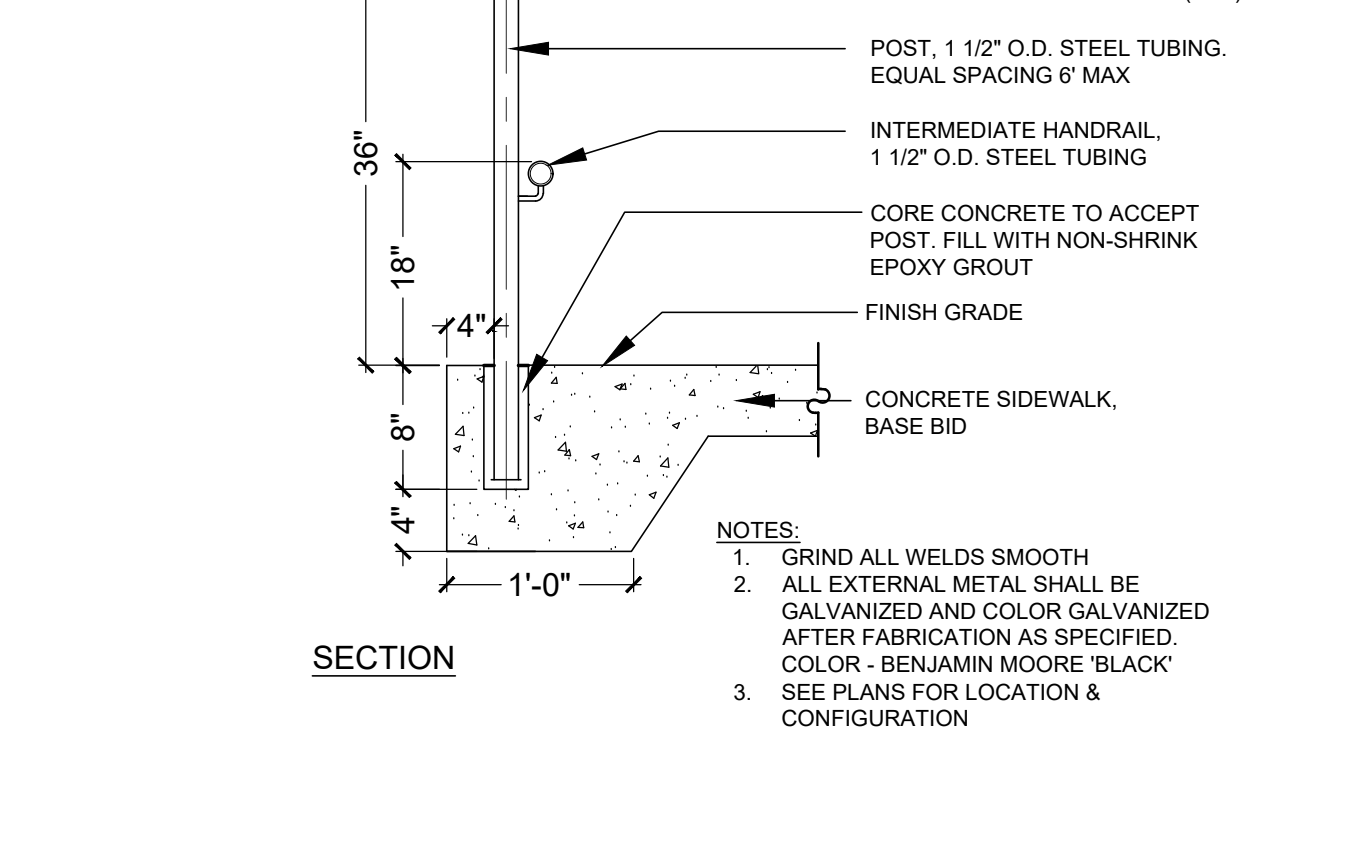
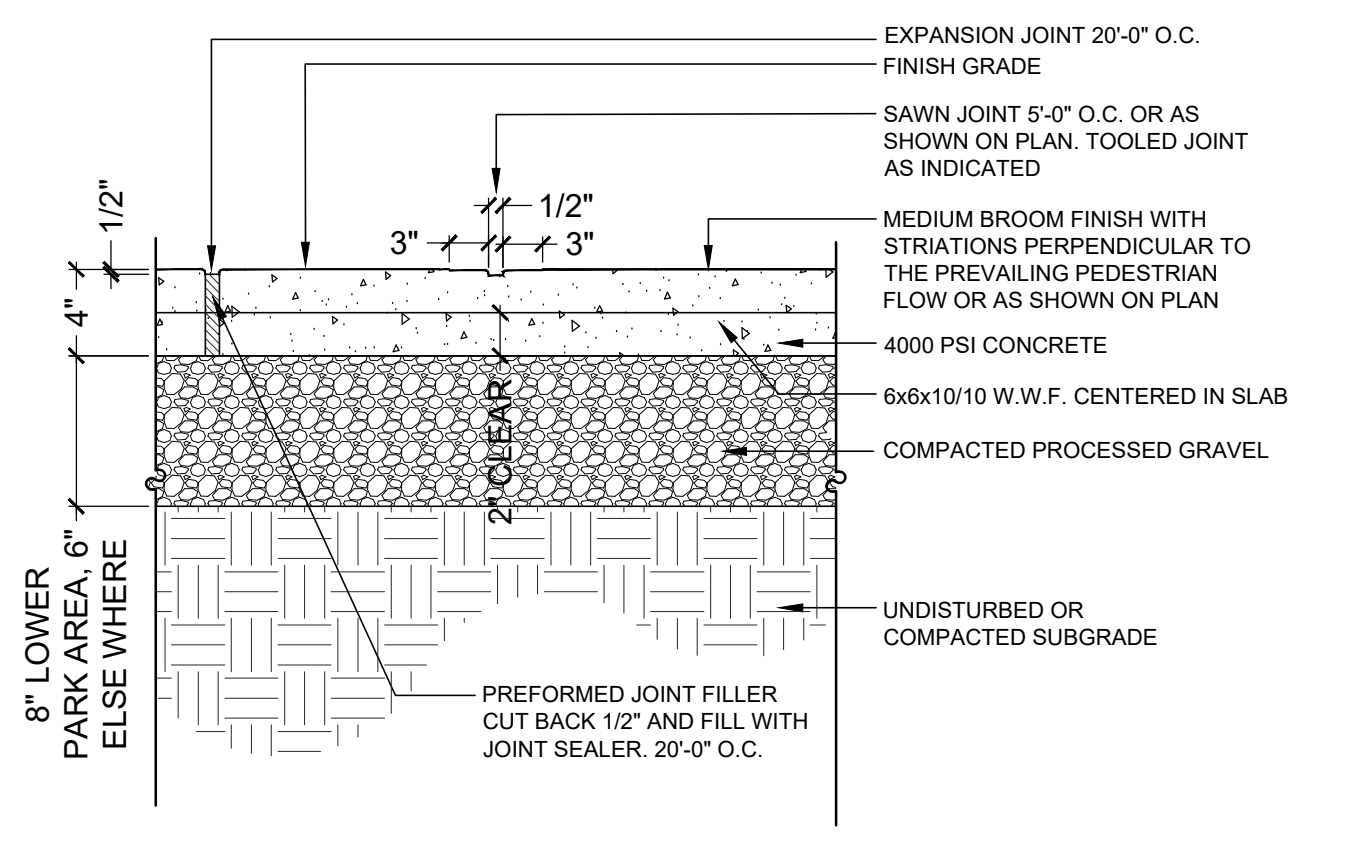
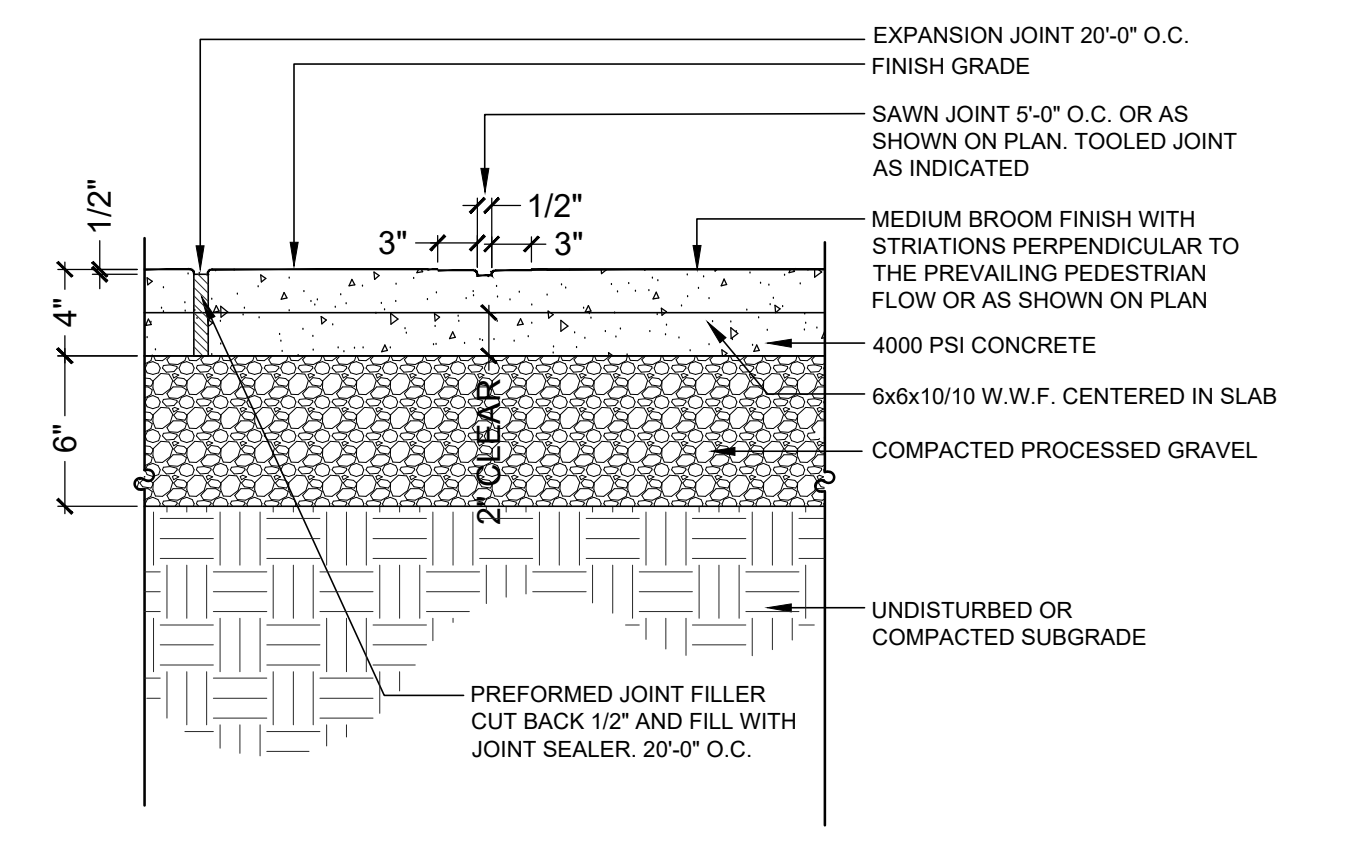
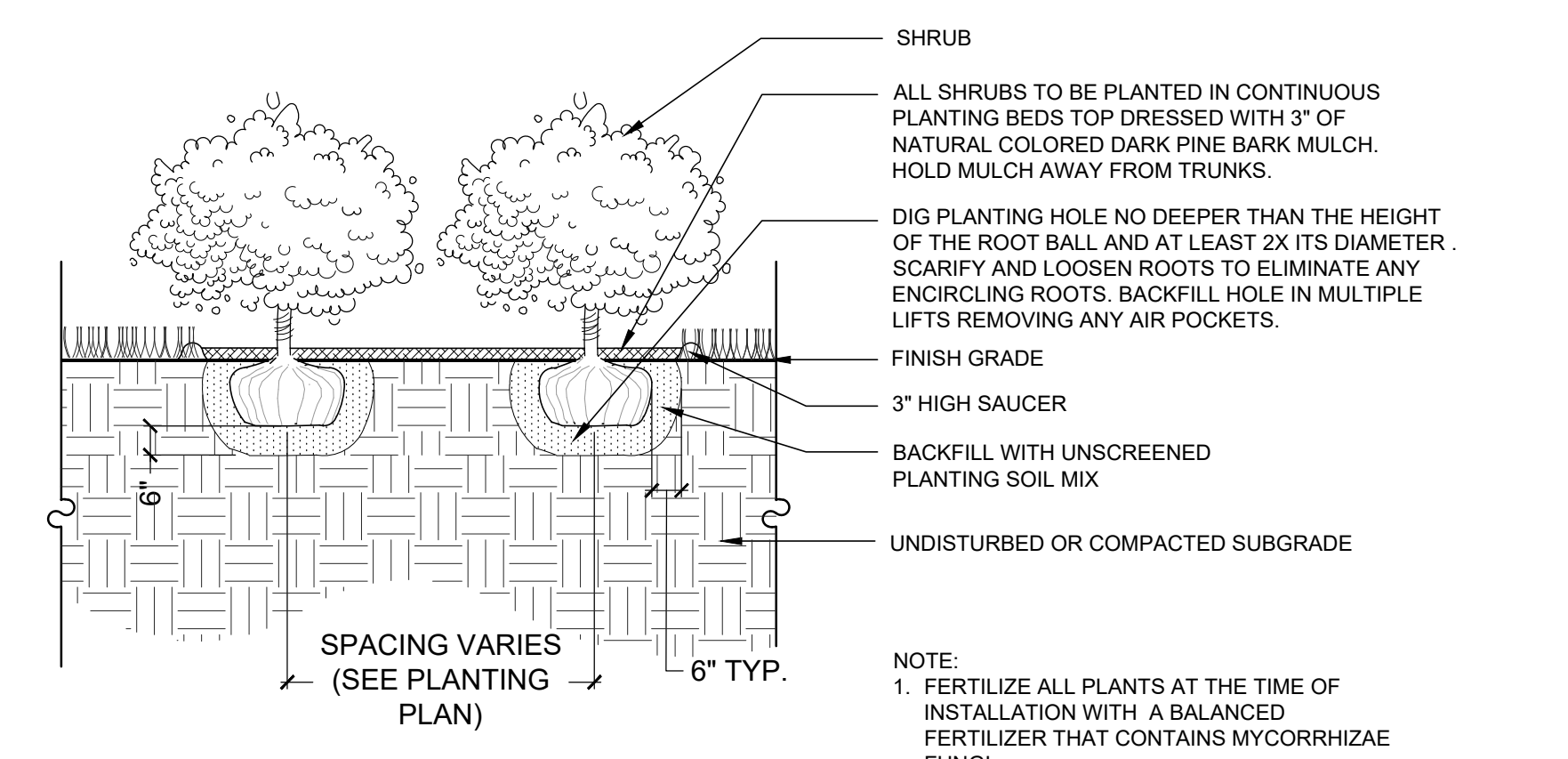
**2 Welded Wire Fence, Add Alternate #7**

Not to Scale

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**3**

L3.2



**Shrub Planting**

Not to Scale

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**4 Concrete Pad**

Not to Scale

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**5 Concrete Sidewalk, Add Alternate #2**

Not to Scale

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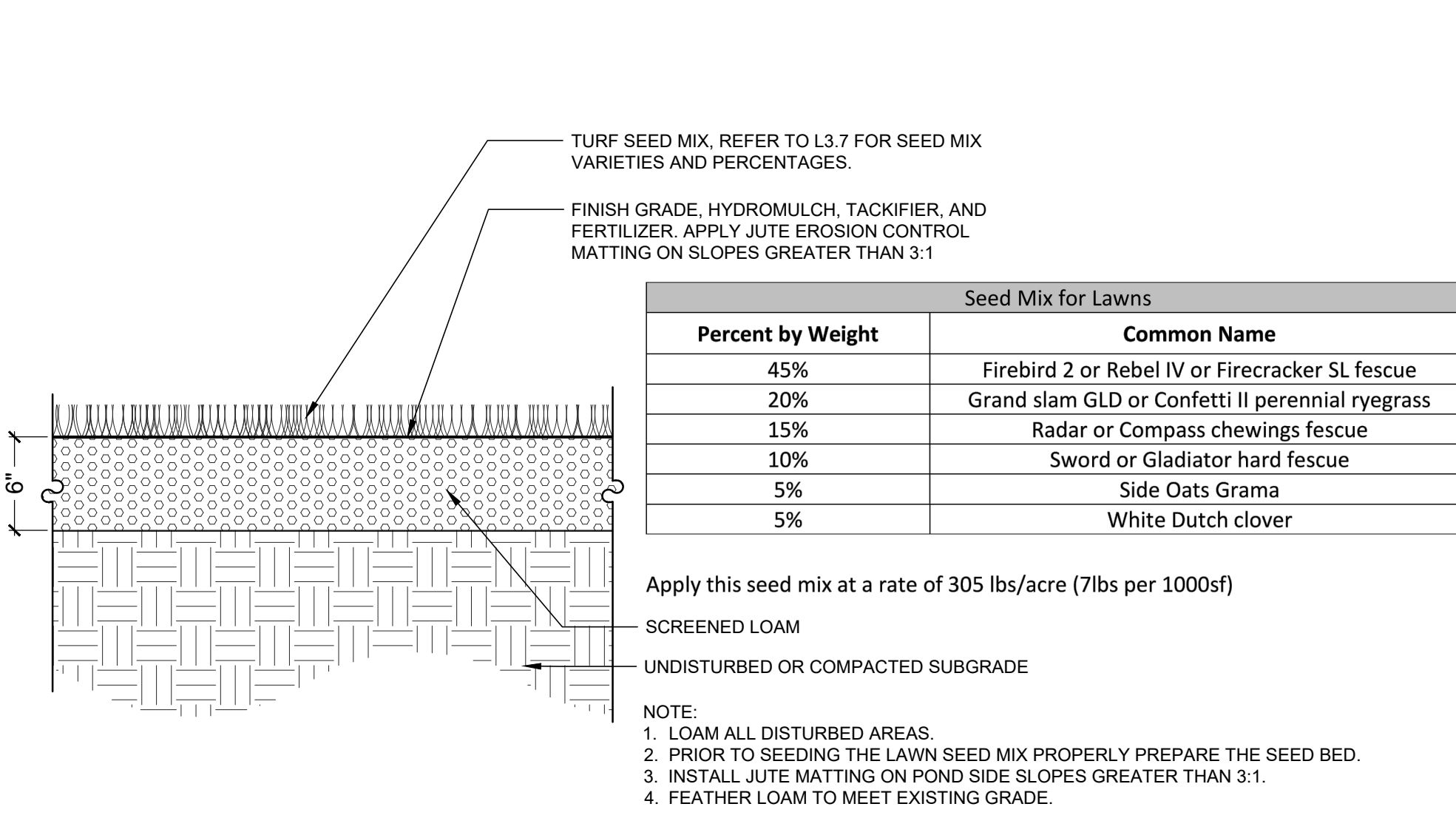
**6 Ramp Handrail**

Not to Scale

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**7**

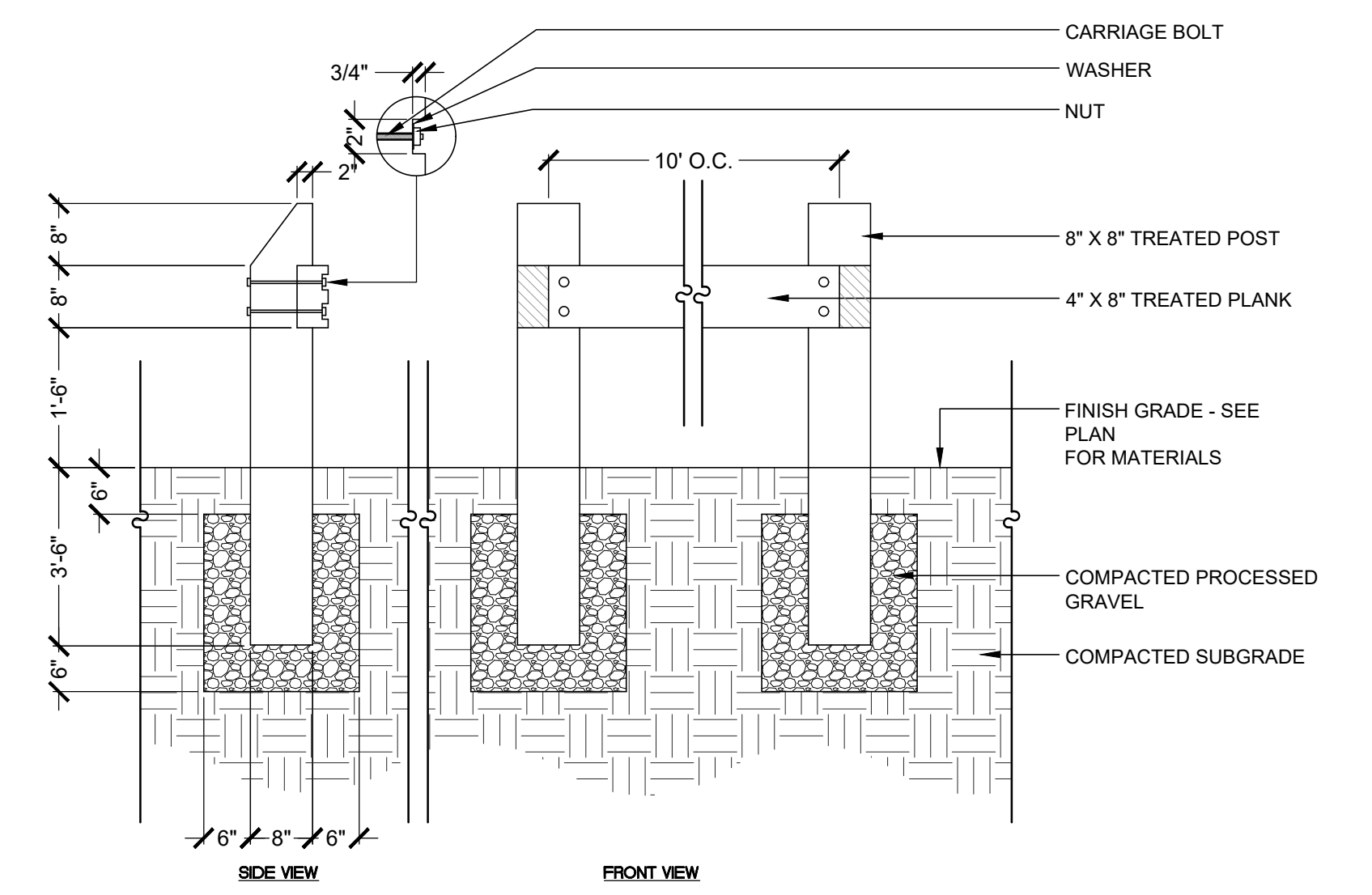
L3.2



**8**

L3.2

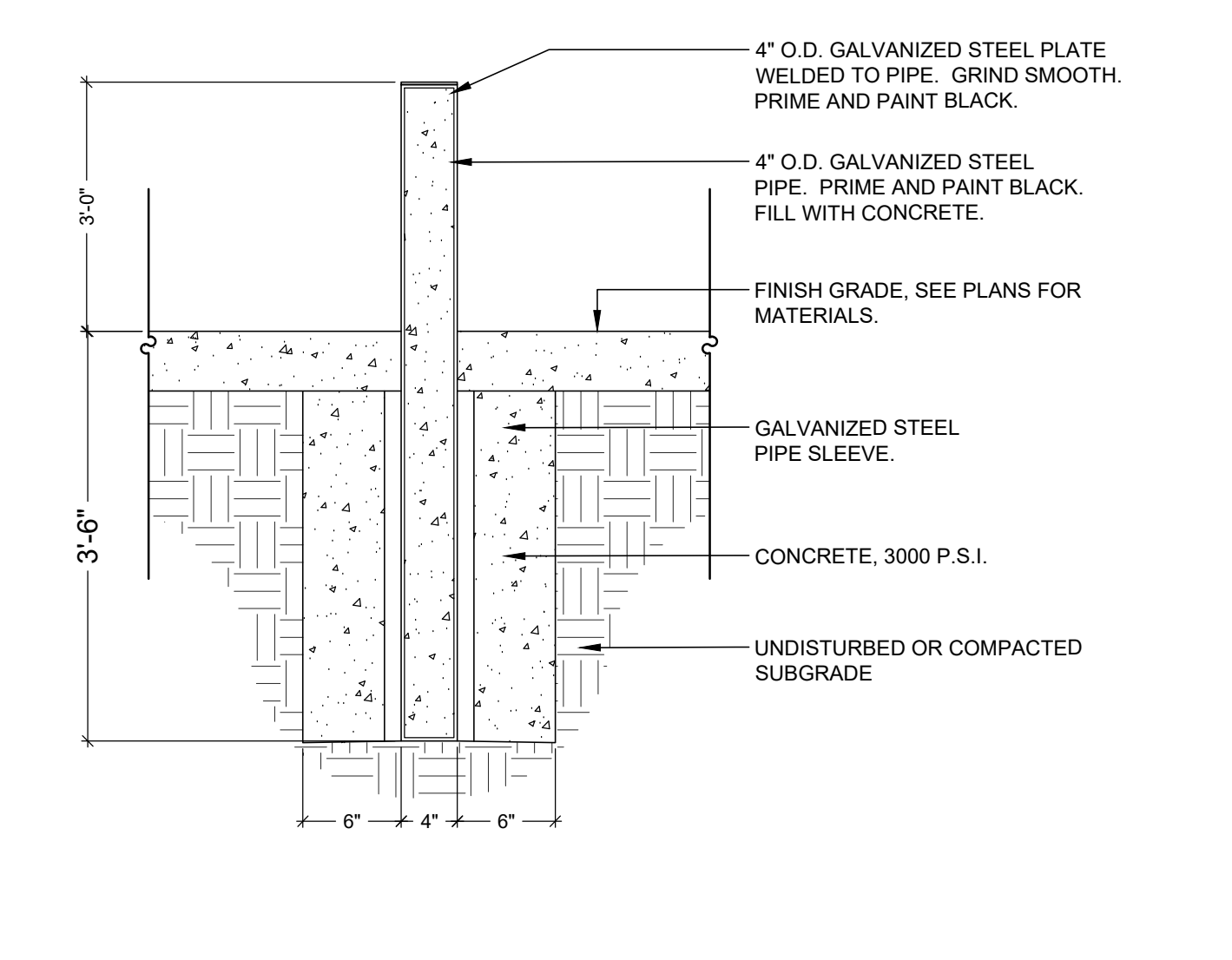
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**9**

L3.2

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**10**

L3.2

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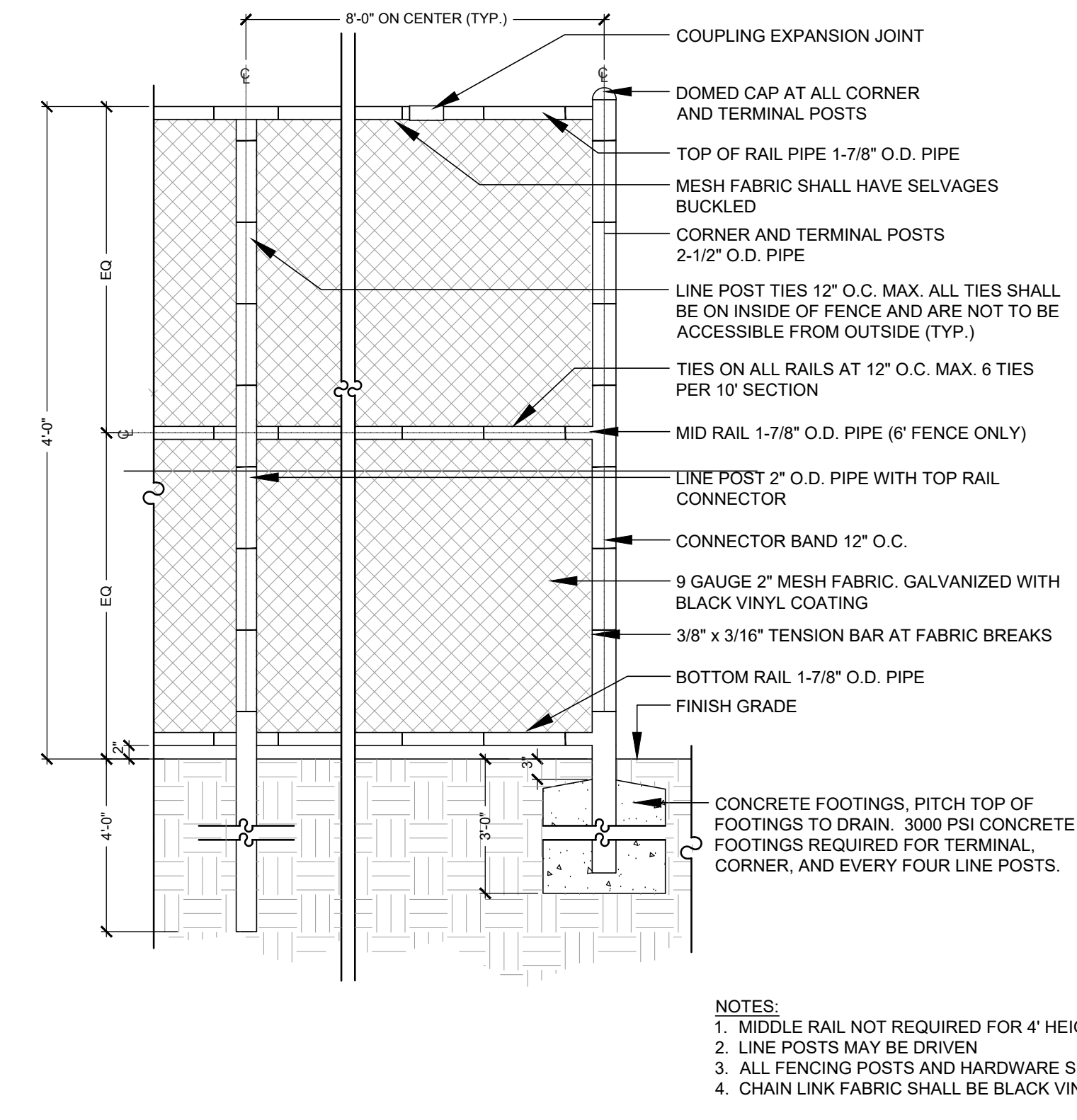
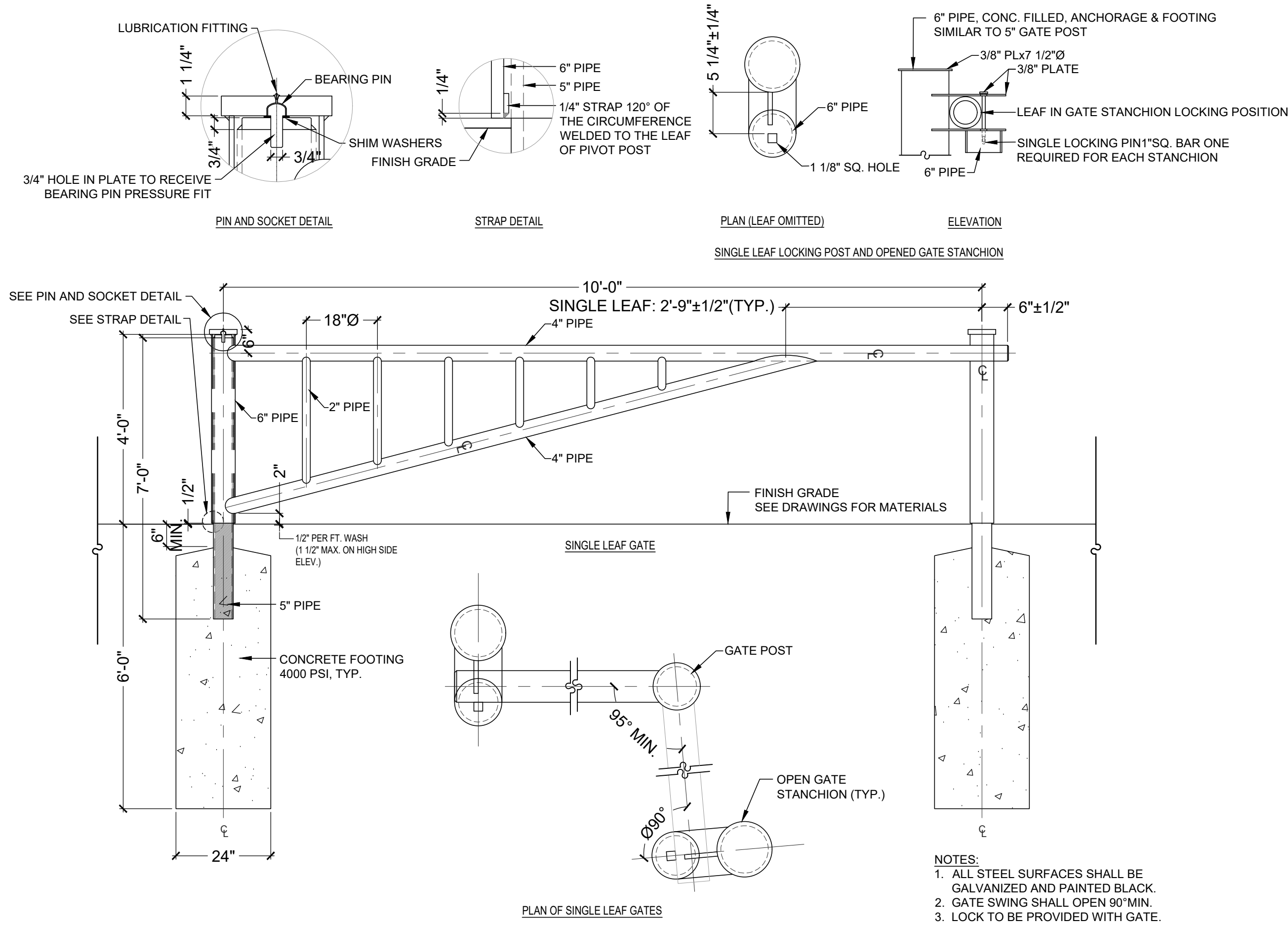
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CHECKED BY: JRH  
PROJECT NO: 355220361



## Vehicle Access Gate

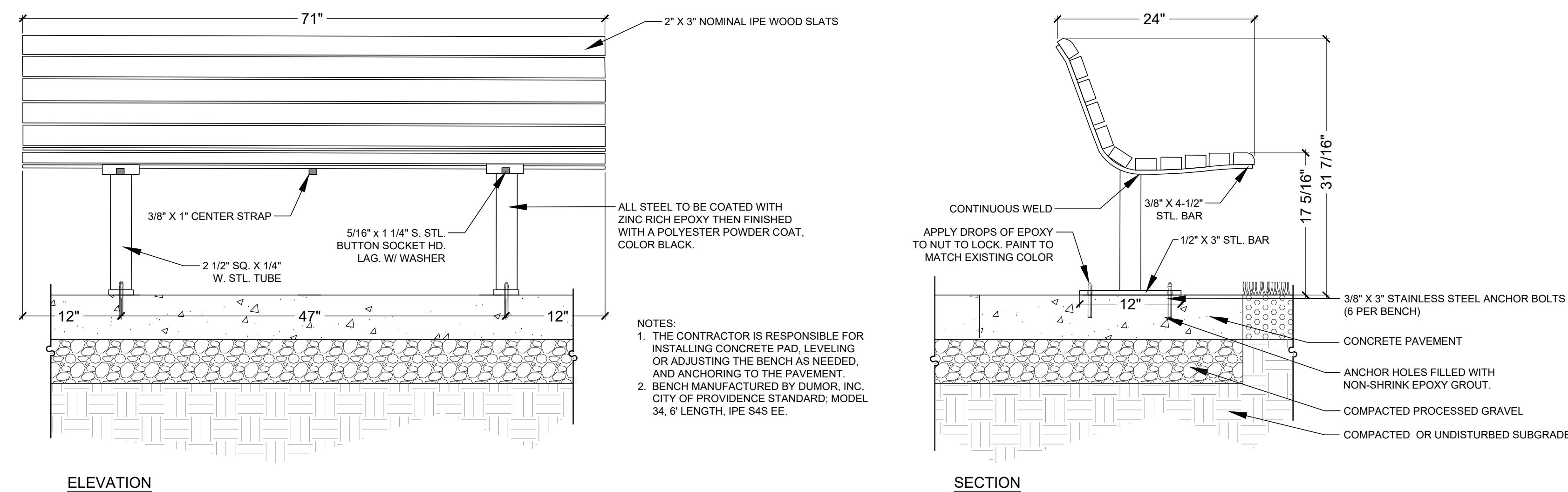
Not to Scale

©IRONWOOD 2023 **1**  
L3.3

## Chain Link Fence and Gate

Not to Scale

©IRONWOOD 2023 **2**  
L3.3



## Bench

Not to Scale

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L3.3

SEAL:



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PROVIDENCE, RI 02907

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SCALE: AS NOTED  
DRAWN BY: SW, JRH  
CHECKED BY: JRH  
PROJECT NO: 365220361

**SITE PREPARATION NOTES:**

- ALL SITE PREPARATION NECESSARY TO COMPLETE THIS PROJECT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH PROVIDENCE PARKS DEPARTMENT STAFF TO DEVELOP A SUITABLE DEMOLITION PLAN, WHICH WILL MINIMIZE PARK DISTURBANCE AND ALLOW ALL FACILITIES TO REMAIN IN OPERATION DURING THE ENTIRETY OF CONSTRUCTION.
- UNLESS OTHERWISE NOTED, THE CONTRACTOR IS RESPONSIBLE FOR THE RELOCATION, DEMOLITION, REMOVAL AND DISPOSAL, IN A LOCATION APPROVED BY ALL GOVERNING AUTHORITIES, OF ALL EXISTING SITE ELEMENTS AND STRUCTURES INCLUDING BUT NOT LIMITED TO BITUMINOUS CONCRETE, CEMENT CONCRETE, GRAVEL, CURBS, WALKWAYS, SIDEWALKS, BERMS, FENCES, BOLLARDS, POSTS, PLANTING BEDS, TREES, SHRUBS, UTILITIES, DRAINAGE STRUCTURES AND ALL OTHER STRUCTURES SHOWN WITHIN THE LIMITS, AND WHERE NEEDED, TO ALLOW FOR NEW CONSTRUCTION. ALL ELEMENTS TO BE REMOVED SHALL BE UNDERCUT TO SUITABLE MATERIAL AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL PER SPECIFICATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL DEBRIS FROM THE SITE AND DISPOSING OF THE DEBRIS IN A PROPER AND LEGAL MANNER.
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS ARE BASED ON RECORDS OF VARIOUS UTILITY COMPANIES, AND WHEREVER POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY IN THE CITY, AND "DIGSAFE" (1-800-344-7233) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK IN PREVIOUSLY UNALTERED AREAS TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RESOLVE CONFLICTS BETWEEN THE PROPOSED UTILITIES AND FIELD-LOCATED UTILITIES AND SHALL REPORT ANY DISCREPANCIES TO THE LANDSCAPE ARCHITECT IMMEDIATELY. THE OWNER ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED, INCOMPLETELY OR INACCURATELY SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ACCURATE RECORDS OF THE LOCATION AND ELEVATION OF ALL WORK INSTALLED AND EXISTING UTILITIES FOUND DURING CONSTRUCTION FOR THE PREPARATION OF THE AS-BUILT PLAN.
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL EXISTING UTILITIES IN WORKING ORDER AND FREE FROM DAMAGE DURING THE ENTIRE DURATION OF THE PROJECT. ALL COST RELATED TO THE REPAIR OF UTILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. EXCAVATION REQUIRED WITHIN THE PROXIMITY OF EXISTING UTILITY LINES SHALL BE DONE BY HAND. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITY LINE OR STRUCTURES INCURRED DURING CONSTRUCTION OPERATIONS AT NO COST TO THE OWNER.
- THE CONTRACTOR SHALL MAINTAIN CONTINUOUS ACCESS AND OPERATION FOR SURROUNDING FACILITIES, AS DEEMED BY THE OWNER, AT ALL TIMES DURING DEMOLITION OF THE EXISTING FACILITIES. PRIOR TO DEMOLITION OCCURRING, ALL EROSION CONTROL DEVICES AND TREE PROTECTIVE MEASURES ARE TO BE INSTALLED.
- EVERY EFFORT SHALL BE TAKEN TO PRESERVE THE HEALTH OF EXISTING VEGETATION TO BE PROTECTED ON SITE. PRIOR TO BEGINNING ANY WORK THE CONTRACTOR ON SITE SHALL TAKE EFFECTIVE ACTION TO PROTECT ALL EXISTING LANDSCAPING INDICATED TO REMAIN.
- ALL ELEMENTS IDENTIFIED TO BE PROTECTED SHOULD BE ENCIRCLED WITH AN ORANGE PLASTIC, 4" - HIGH BARRICADE FENCE THAT IS SECURELY STAKED AND MAINTAINED FOR THE DURATION OF THE PROJECT.
- PROTECT TREE TRUNKS FROM SCRAPING AND GOUGING BY VERTICALLY PLACING A SERIES OF EIGHT FOOT, TWO BY FOUR LUMBER AROUND THE TRUNK SPACED 8" APART (MAX) TO ENCIRCLE THE TRUNK. SECURE THE LUMBER WITH AT LEAST THREE 1 1/2" WEBBING RATCHET STRAPS.
- THE ROOT ZONE OF TREES TO BE PROTECTED REQUIRES ALL EXCAVATION WORK BE DONE WITH AN AIR SPADE AND/OR BY HAND DIGGING. WHEN ROOTS ARE ENCOUNTERED THAT MUST BE CUT TO INSTALL UTILITIES, PAVEMENT, ETC. THEY ARE TO BE PRUNED USING A HAND SAW, LOPPERS, OR HAND PRUNERS. PRUNE AWAY JAGGED ROOTS BACK TO THE TRENCH WALL CLOSEST TO THE TREE.
  - KEEP EQUIPMENT AND EXCAVATED BACKFILL ON THE SIDE FURTHEST FROM THE TREE.
  - REPLACE THE BACKFILL ON THE SAME DAY. IF THIS IS NOT POSSIBLE, COVER THE EXPOSED ROOTS WITH WET BURLAP TO PREVENT THEM FROM DRY OUT.
  - DO NOT ALLOW CHEMICALS OR FOREIGN DEBRIS TO BECOME MIXED WITH THE BACKFILL.
  - PACK THE BACKFILL TO THE SAME FIRMNESS AS THE SURROUNDING SOIL.
  - WATER THE BACKFILL IF THE OPERATION OCCURS DURING HOT, DRY WEATHER TO REDUCE DUST.
- AVOID THE FOLLOWING ACTIVITIES WITHIN THE ROOT PROTECTION ZONE:
  - STORAGE OF CONSTRUCTION MATERIALS.
  - CONCRETE WASH-OUT OPERATIONS.
  - STOCKPILING OF DEMOLITION DEBRIS.
  - PARKING OF ANY VEHICLES.
  - STOCKPILING OF ANY MATERIALS.

**LAYOUT AND MATERIALS NOTES:**

- ALL GENERAL NOTES SHALL BE INCLUDED AS PART OF THE LAYOUT & MATERIALS NOTES.
- WHEN PROVIDED, USE DIMENSIONAL INFORMATION GIVEN ON THE DRAWING.
- ALL DIMENSIONS SHOWN ARE TAKEN TO THE FACE OR CENTERLINE OF ELEMENTS UNLESS OTHERWISE INDICATED.
- THE CONTRACTOR SHALL VERIFY DIMENSIONS SHOWN ON THE DRAWINGS AND SHALL NOTIFY THE LANDSCAPE ARCHITECT IN WRITING OF ANY DISCREPANCIES PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL REVIEW AND OBTAIN THE APPROVAL OF THE FINAL LAYOUT WITH THE LANDSCAPE ARCHITECT OR CITY REPRESENTATIVE PRIOR TO STARTING CONSTRUCTION. IF DEEMED NECESSARY BY THE LANDSCAPE ARCHITECT OR CITY REPRESENTATIVE, THE CONTRACTOR SHALL STAKE OUT PROPOSED TREE LOCATIONS TO AID IN THE REVIEW OF THE FINAL LAYOUT.
- THE CONTRACTOR SHALL LAYOUT AND DETERMINE THE ELEVATIONS OF ALL SITE ELEMENTS FOR APPROVAL BY THE LANDSCAPE ARCHITECT OR CITY REPRESENTATIVE PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL REPORT ANY CONFLICTS BETWEEN UTILITY STRUCTURES AND PROPOSED IMPROVEMENTS TO THE LANDSCAPE ARCHITECT OR CITY REPRESENTATIVE.
- THE CONTRACTOR SHALL REFER ANY QUESTIONS ON MATERIALS, FINISHES, AND/OR PRODUCTS NOT SPECIFIED HEREIN TO THE LANDSCAPE ARCHITECT OR CITY REPRESENTATIVE PRIOR TO ORDERING MATERIALS OR STARTING WORK.
- ALL LINES AND DIMENSIONS ARE PARALLEL OR PERPENDICULAR TO THE LINES FROM WHICH THEY ARE MEASURED UNLESS OTHERWISE SHOWN.
- WHEN NEW PAVEMENT IS PLACED AGAINST EXISTING PAVEMENT, SAWCUT EXISTING PAVEMENT, AND GRADE SMOOTH AND FLUSH.

**PLANTING NOTES:**

- ALL NEW PLANT MATERIALS SHALL CONFORM TO THE MINIMUM GUIDELINES ESTABLISHED FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC. IN ADDITION, ALL NEW PLANT MATERIAL FOR THE PROJECT SHALL BE OF SPECIMEN QUALITY.
- ALL NEW PLANTS TO BE BALLED AND BURLAPPED OR CONTAINER GROWN, UNLESS OTHERWISE NOTED ON THE PLANT LIST.
- THE CONTRACTOR SHALL SUPPLY ALL NEW PLANT MATERIAL IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTING SHOWN ON THE DRAWINGS.
- ANY PROPOSED SUBSTITUTIONS OF PLANT SPECIES SHALL BE MADE WITH PLANTS OF EQUIVALENT OVERALL FORM, HEIGHT, BRANCHING HABIT, FLOWER, LEAF, COLOR, FRUIT AND CULTURE, AND ONLY AFTER WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT.
- ALL NEW PLANTS SHALL BE TAGGED AND APPROVED BY THE LANDSCAPE ARCHITECT AT THE NURSERY PRIOR TO DIGGING OR DELIVERY TO THE SITE.
- CONTRACTOR SHALL LOCATE AND VERIFY ALL EXISTING UTILITY LINES PRIOR TO PLANTING AND SHALL REPORT ANY CONFLICTS TO THE LANDSCAPE ARCHITECT.
- STAKE LOCATIONS OF ALL PROPOSED PLANTING FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO THE COMMENCEMENT OF PLANTING. INDIVIDUAL STAKES SHALL BE PLACED FOR TREES AND SHRUBS. EDGE OF PLANTING BEDS SHALL BE PAINTED. NOTIFY LANDSCAPE ARCHITECT 24 HOURS PRIOR TO DESIRED APPROVAL.
- ALL NEW PLANTS SHALL BE SUPPLIED AND INSTALLED DURING THE PERIODS OF APRIL 1 - JUNE 15 AND/OR SEPTEMBER 1 - NOVEMBER 15 PER SPECIFICATIONS.
- PREPARE ALL INDIVIDUAL TREE PITS AND SHRUB PLANTING BEDS TO A MINIMUM DEPTH OF EIGHTEEN INCHES (18") WITH SPECIFIED PLANTING MIX: 50% SCREENED TOPSOIL, 40% EXISTING SOIL AND 10% COMPOST. BLEND COMPOST INTO TOP 4" OF SOIL. PLANTING MIX SHALL BE FREE OF LUMPS, STONES, PLANTS, ROOTS, AND OTHER FOREIGN MATTER.
- ALL SHRUB BEDS AND INDIVIDUAL TREE PITS SHALL RECEIVE THREE (3) INCHES OF BARK MULCH PER SPECIFICATIONS. PERENNIAL AND GROUNDCOVER BEDS SHALL RECEIVE TWO INCHES (2"). PROVIDE LANDSCAPE ARCHITECT WITH SAMPLE FOR APPROVAL.
- ALL BURLAP, TWINE AND WIRE SHALL BE COMPLETELY REMOVED OR CUT AWAY AT TIME OF INSTALLATION.
- PRUNE TREES IN ACCORDANCE WITH THE SPECIFICATIONS.
- PLANT WARRANTY SHALL BE FOR ONE FULL GROWING SEASON FROM THE TIME OF SUBSTANTIAL COMPLETION.
- LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ALL DAMAGED, STOLEN, DEAD, DECLINING OR LOST MATERIAL UNTIL COMPLETION OF MAINTENANCE PERIODS OR GUARANTEE PERIODS.
- IF NO IRRIGATION SYSTEM IS PLANNED, AN APPROPRIATE WATERING SCHEDULE SHALL BE ESTABLISHED BY THE LANDSCAPE CONTRACTOR FOR ALL PLANT MATERIAL BASED UPON PLANT SPECIES REQUIREMENTS AND PROVIDED IN WRITING TO THE LANDSCAPE ARCHITECT AND OWNER FOR REVIEW AND APPROVAL. THE APPROVED SCHEDULE SHOULD BE FOLLOWED UNTIL COMPLETION OF PLANT MAINTENANCE PERIODS OR WARRANTY PERIODS.
- ALL VEGETATION AND DEBRIS SHALL BE REMOVED FROM PROPOSED PLANTING AREAS PRIOR TO PLANTING AND BACKFILLING. CONTRACTOR SHALL REMOVE ALL WEEDS AND DEBRIS FROM SITE AS WORK PROGRESSES AND UNTIL COMPLETION OF PLANT MAINTENANCE PERIODS OR WARRANTY PERIODS.
- ALL AREAS TO BE SEEDED OR SODDED SHALL RECEIVE SIX INCHES (6") OF LOAM, MEASURED AFTER INSTALLATION, PRIOR TO SEEDING.
- ALL EXISTING LAWN AREAS DESIGNED TO REMAIN SHALL BE AERATED, FERTILIZED AND OVERSEEDED, AS DIRECTED BY THE LANDSCAPE ARCHITECT.
- IN ADDITION TO LOCATIONS DEFINED FOR SEED ON THE PLANTING PLAN, THE CONTRACTOR SHALL BE RESPONSIBLE FOR SEEDING ANY DISTURBED AREAS.
- A DETAILED PLANT MAINTENANCE MANUAL SHALL BE ESTABLISHED BY THE LANDSCAPE CONTRACTOR FOR ALL PLANT MATERIAL BASED UPON PLANT SPECIES REQUIREMENTS AND PROVIDED IN WRITING TO THE LANDSCAPE ARCHITECT AND OWNER FOR REVIEW AND APPROVAL. INFORMATION THEREIN SHALL INCLUDE REQUIRED PRUNING SCHEDULE, FERTILIZING AND PROPOSED INTEGRATED PEST MANAGEMENT (IPM) AS NECESSARY. THE APPROVED MAINTENANCE SHOULD BE FOLLOWED UNTIL COMPLETION OF PLANT MAINTENANCE PERIODS OR WARRANTY PERIODS.
- LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING CLOSE COORDINATION WITH OWNER, GENERAL CONTRACTOR, RELATED SUBCONTRACTORS, LANDSCAPE ARCHITECT, AND ALL SITE WORK RELATED ITEMS.

**ELECTRICAL NOTES:**

- FURNISH AND INSTALL ALL LABOR, MATERIALS, APPLIANCES, EQUIPMENT TOOLS, TRANSPORTATION, SUPERVISION, AND SERVICES REQUIRED. COMPLETELY TEST AND MAKE OPERATIVE, ALL ELECTRICAL WORK AS OUTLINED IN THE DRAWINGS AND SPECIFICATIONS.
- THE ELECTRICAL WORK MAY INCLUDE, BUT NOT BE LIMITED TO, THE FURNISHING OF MATERIALS AND INSTALLATION OF THE FOLLOWING IN ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL CODES.
  - WIRING DEVICES
  - LIGHTING SYSTEM
  - CONDUIT, RACEWAYS, ETC.
  - BRANCH CIRCUIT WIRING
  - PANELBOARD CIRCUIT BREAKER
  - GROUNDING, WIRE, AND CABLE
- ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST REQUIREMENTS OF THE NEC, STATE OF RHODE ISLAND BUILDING CODE, OSHA, ADA, AND THE CITY OF PROVIDENCE, RI CODES AND STANDARDS AND SPECIFICATIONS.
- PAY FOR ALL INSPECTION FEES, LICENSES, AND PERMITS.
- SUBMIT SHOP DRAWINGS FOR ALL EQUIPMENT FOR APPROVAL BEFORE PURCHASING. ALL EQUIPMENT SHALL BEAR THE LABEL OF A NATIONALLY RECOGNIZED TESTING LABORATORY.
- PHOTOCELL (IF ONE DOES NOT EXIST)
  - PHOTOCELL SHALL BE MANUFACTURED BY TORK OR EQUAL.
  - FURNISH AND INSTALL A PHOTOCELL AS DIRECTED FOR THE CONTROL OF ALL LIGHTS.
- LIGHTING
  - FURNISH AND INSTALL ALL LIGHTING FIXTURES AS INDICATED ON THE DRAWINGS.
- GROUNDING
  - PROVIDE COMPLIANT GROUNDING FOR ALL ELECTRICAL EQUIPMENT AND DEVICES.
    - BONDING JUMPERS SHALL BE INSTALLED AT ALL LOCATIONS REQUIRED BY NEC.
    - GREEN GROUNDING CONDUCTOR OF PROPER SIZE SHALL BE INSTALLED AND CONNECTED WITH THE BRANCH CIRCUIT CONDUCTORS FROM THE PANELBOARD TO THE LIGHTING FIXTURE. CONNECTIONS TO THE EQUIPMENT SHALL BE BOLTED OR SCREWED USING CORROSION RESISTING BOLTS OR SCREWS. A GREEN GROUNDING CONDUCTOR SHALL BE INSTALLED IN ALL BRANCH AND FEEDER CIRCUITS.
- RACEWAYS
  - ALL EXPOSED EXTERIOR CONDUIT THAT RUNS OUTSIDE SHALL BE HOT DIPPED GALVANIZED STEEL CONDUIT.
- HANGERS AND SUPPORTS
  - PROVIDE ALL REQUIRED HANGERS, SUPPORTS, SLEEVES, CLAMPS, ETC., AS REQUIRED AND/OR AS INDICATED ON THE DRAWINGS.

- PULL AND JUNCTION BOXES
  - BOXES FOR EXTERIOR WORK SHALL MEET ANSI-SCTE TIER 15 MEDIUM DUTY RATING. SUCH AS OLDCASTLE SYNERTECH1212-18 MADE OF DUOMOLD COMPOSITE OR APPROVED EQUAL. STEEL OR ANY CONDUCTIVE BOXES WILL NOT BE PERMITTED.
- FEEDER AND BRANCH CIRCUIT CONDUCTORS
  - ALL FEEDER, BRANCH CIRCUIT, REMOTE CONTROL, SIGNAL CIRCUIT, AND INTERLOCK WIRING SHALL BE MANUFACTURED OF COPPER AND RATED 600 VOLTS.
  - MINIMUM SIZE WIRE FOR BRANCH CIRCUIT AND POWER WIRING SHALL BE #12 AWG.
  - INSULATION SHALL BE TYPE THHN/THWN FOR LIGHTING.
  - ALL WIRING SHALL CONFORM TO THE NEC FOR CONSTRUCTION AND USE.
- WIRING DEVICES
  - FURNISH AND INSTALL WIRING DEVICES AND SPECIFICATION GRADE, COMPLETE WITH ALL ACCESSORIES AS INDICATED ON THE DRAWINGS AND AS SPECIFIED HEREUNDER. ALL WIRING DEVICES SHALL BE THE PRODUCT OF A SINGLE MANUFACTURER EXCEPT WHERE SPECIFICALLY STATED OTHERWISE.
- FURNISH AND INSTALL NAME PLATES ON ALL ELECTRICAL EQUIPMENT.
- ALL EQUIPMENT EXPOSED TO MOISTURE SHALL BE OF THE APPROPRIATE (NEMA) WEATHERPROOF TYPE. SEAL ALL CONDUITS THAT PENETRATE.
- PERFORM ALL TESTS REQUIRED AND VERIFY PHASE BALANCE OF THE PANELBOARD.
  - COMPLETE TEST AND INSPECTION RECORDS SHALL BE MADE AND INCORPORATED INTO A REPORT FOR EACH PIECE OF EQUIPMENT TESTED. ALL READINGS TAKEN SHALL BE RECORDED. TEST REPORTS SHALL BE SUBMITTED TO THE CITY'S REPRESENTATIVE FOR APPROVAL.
  - FURNISH NECESSARY METERS, INSTRUMENTS, TEMPORARY WIRING, AND LABOR TO PERFORM ALL REQUIRED TESTS AND ADJUSTMENTS OF EQUIPMENT AND WIRING INSTALLED AND/OR CONNECTED UNDER THIS CONTRACT, INCLUDING ELECTRICAL EQUIPMENT FURNISHED BY OTHERS, TO DETERMINE PROPER POLARITY, PHASING, FREEDOM FROM GROUND AND SHORTS AND OPERATION OF EQUIPMENT. ALL MEASURING INSTRUMENTS SHALL BE PROPERLY CALIBRATED.
  - ALL MATERIALS AND MANNER OF INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF STATE AND LOCAL AUTHORITIES, THE UTILITY COMPANY, AND THE CODES OF THE NATIONAL BOARD OF UNDERWRITERS.
  - WHENEVER ANY OF THE AFOREMENTIONED CODES, LAWS, ETC. REQUIRE THAT ANY WORK BE TESTED OF APPROVED, THE CONTRACTOR SHALL PROVIDE PROPER FACILITIES FOR ACCESS AND FOR INSPECTION, ALL AT THEIR OWN EXPENSE.
    - THE CONTRACTOR SHALL CORRECT OR REPLACE ANY NOMINAL CURRENT-CARRYING CIRCUIT WHICH IS DEFECTIVE OR GROUNDED AND HE SHALL ALSO CORRECT ALL OTHER TROUBLES ENCOUNTERED BY THESE TESTS. ALL DEFECTS WHETHER THROUGH FAULTY WORKMANSHIP OF MATERIAL FURNISHED SHALL BE CORRECTED UNDER THIS SECTION AT THE CONTRACTOR'S EXPENSE.
- ALL ELECTRICAL WORK SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE. DEFECTS SHALL BE CORRECTED WITHOUT CHARGE, INCLUDING ALL PATCHING, PAINTING, AND OTHER INCIDENTAL REPAIRS AND REPLACEMENTS. COORDINATE ALL WORK WITH OTHER TRADES. FURNISH AND INSTALL ALL POWER AND CONTROL WIRING FOR A COMPLETE INSTALLATION.
- ALL ELECTRICAL EQUIPMENT, MATERIALS, ETC. STORED ON SITE SHALL BE STORED IN SUCH A MANNER THAT IT IS SAFE FROM DAMAGE BY MOISTURE, IMPACT, ETC.
- ELECTRICAL CONTRACTOR SHALL PERFORM THEIR WORK IN A NEAT AND ORDERLY, PROFESSIONAL MANNER. ALL REFUSE, DIRT, AND DEBRIS RESULTANT FROM HIS WORK SHALL BE REMOVED AND PROPERLY DISPOSED OF AT THE END OF THE DAY.
  - ALL WORK ALL WORK SHALL BE EXECUTED BY A STATE OF RHODE ISLAND LICENSED ELECTRICIAN AND SHALL BE EXECUTED IN A PROFESSIONAL MANNER.
- ELECTRICAL CONTRACTOR IS REQUIRED TO COORDINATE THEIR WORK WITH ALL UTILITIES INVOLVED.
- ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR FOLLOWING THE MANUFACTURER'S INSTALLATION RECOMMENDATIONS AND DIRECTIONS FOR ALL EQUIPMENT AND MATERIALS USED.
- UPON COMPLETION OF THE WORK, THE ELECTRICAL CONTRACTOR SHALL BE REQUIRED TO DEMONSTRATE PROPER OPERATION OF THE LIGHTING SYSTEM.
- ALL MATERIALS SHALL BE NEW AND SHALL CONFORM TO THE NEMA NATIONAL ELECTRIC CODE (NEC) AND UNDERWRITERS LABORATORIES, INC. STANDARDS IN EVERY CASE WHERE SUCH A STANDARD HAS BEEN ESTABLISHED FOR THE PARTICULAR TYPE OF MATERIAL IN QUESTION.
- ANY MATERIAL ITEM OR WORK NOT SHOWN ON THE DRAWINGS BUT MENTIONED ON THE SPECIFICATIONS OR VICE-VERSA, OR ANY ACCESSORIES NECESSARY TO MAKE THE WORK COMPLETE IN ALL RESPECTS AND READY FOR OPERATION SHALL BE INCLUDED IN THE CONTRACTOR'S BID, AND SUCH ITEMS SHALL NOT BE A CAUSE FOR EXTRA WORK OR EXTRA COST TO THE CITY.
- THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE TO MAKE THEMSELF AWARE OF THE EXISTING CONDITIONS AND EXISTING EQUIPMENT.
- RECORD DRAWINGS
  - CONTRACTOR SHALL PREPARE A COMPLETE SET OF RECORD CONSTRUCTION DRAWINGS AND SUBMIT THEM TO THE CITY'S REPRESENTATIVE FOR APPROVAL.
- SUBMIT SHOP DRAWINGS AND PRODUCT DATA WITHIN 10 DAYS AFTER AWARD OF CONTRACT. CHECK, STAMP, AND MARK SUBMITTALS WITH PROJECT NAME BEFORE TRANSMITTING TO THE CITY'S REPRESENTATIVE.
- WHERE MATERIAL IS CALLED OUT IN THE LEGEND, FIXTURE SCHEDULE, NOTES, SPECIFICATIONS, OR ELSEWHERE BY THE MANUFACTURER, TYPE OR CATALOG NUMBER, SUCH DESIGNATIONS ARE TO ESTABLISH STANDARDS OF DESIRED QUALITY. ACCEPTANCE OR REJECTIONS OF PROPOSED SUBSTITUTIONS SHALL BE SUBJECT TO THE APPROVAL OF THE CITY'S REPRESENTATIVE.
- FINAL INSPECTION
  - WHEN THE WORK ON THIS PROJECT HAS BEEN COMPLETED AND IS READY FOR FINAL INSPECTION, SUCH INSPECTION WILL BE MADE. AT THIS TIME, THE CONTRACTOR FOR THE WORK OF THIS SECTION, SHALL DEMONSTRATE THAT THE REQUIREMENTS OF THESE SPECIFICATIONS HAVE BEEN MET. WRITTEN RESULTS FOR ALL TESTS SHALL BE SUBMITTED TO THE CITY'S REPRESENTATIVE.



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SEAL:



REVISION DATE DESCRIPTION

CLIENT:

PROVIDENCE PARKS DEPARTMENT 1000 ELMWOOD AVENUE PROVIDENCE, RI 02907

PROJECT:

WOONASQUATUCKET ADVENTURE PARK PHASE II GLENBRIDGE AVENUE PROVIDENCE, RHODE ISLAND

TITLE:

LANDSCAPE NOTES

ISSUED FOR: 100% SUBMISSION

DATE: MAY 11, 2023

SCALE: AS NOTED

DRAWN BY: SW, JRH

CHECKED BY: JRH

PROJECT NO: 3652220361