



AIA® Document A101™ – 2007

Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

face

AGREEMENT made as of the day of in the year
(In words, indicate day, month and year.)

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

The City of Central Falls
380 Broad Street
Central Falls, RI 02863

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

Lucena Brothers Inc.
70 Founders Drive
Central Falls, RI 02895

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

Improvements to Crossman Street Park and Sacred Heart Park
Crossman Street and Sacred Heart Avenue, Central Falls, RI 02863
See bid specifications for detailed description.

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

Veri Waterman Associates
7 Central Street
Providence, RI 02907

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. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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

AIA Document A201™–2007, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

TABLE OF ARTICLES

- 1 THE CONTRACT DOCUMENTS**
- 2 THE WORK OF THIS CONTRACT**
- 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION**
- 4 CONTRACT SUM**
- 5 PAYMENTS**
- 6 DISPUTE RESOLUTION**
- 7 TERMINATION OR SUSPENSION**
- 8 MISCELLANEOUS PROVISIONS**
- 9 ENUMERATION OF CONTRACT DOCUMENTS**
- 10 INSURANCE AND BONDS**

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be the date of this Agreement unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.
(Insert the date of commencement if it differs from the date of this Agreement or, if applicable, state that the date will be fixed in a notice to proceed.)

See bid specifications.

If, prior to the commencement of the Work, the Owner requires time to file mortgages and other security interests, the Owner's time requirement shall be as follows:

N/A

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

§ 3.3 The Contractor shall achieve Substantial Completion of the entire Work not later than () days from the date of commencement, or as follows: October 31st, 2016 for Sacred Heart Park and December 2016 with an extension for Plantings (grass) May 2017 for Crossman Street Park.
(Insert number of calendar days. Alternatively, a calendar date may be used when coordinated with the date of commencement. If appropriate, insert requirements for earlier Substantial Completion of certain portions of the Work.)

Portion of Work
See bid specifications.

Substantial Completion Date

, subject to adjustments of this Contract Time as provided in the Contract Documents.
(Insert provisions, if any, for liquidated damages relating to failure to achieve Substantial Completion on time or for bonus payments for early completion of the Work.)

ARTICLE 4 CONTRACT SUM

§ 4.1 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 Three Hundred Seventeen Thousand, one-hundred ninety-nine dollars and zero cents (\$ 317,199.00), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 The Contract 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.)

N/A

§ 4.3 Unit prices, if any:
(Identify and state the unit price; state quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price Per Unit (\$0.00)
See bid specifications.		

§ 4.4 Allowances included in the Contract Sum, if any:
(Identify allowance and state exclusions, if any, from the allowance price.)

Item	Price
N/a	

ARTICLE 5 PAYMENTS

§ 5.1 PROGRESS PAYMENTS

§ 5.1.1 Based upon Applications for Payment submitted to the Owner by the Contractor and work completed as specified, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

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

§ 5.1.3 Payment shall be made by the Owner not later than thirty (30) days after the Owner receives the Application for Payment unless work has not been completed as specified. Owner shall have fifteen (15) days to make payment following written notification that work is completed as specified.
(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form and supported

by such data to substantiate its accuracy as the Owner may require. This schedule, unless objected to by the Owner, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

- .1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of ten percent (10 %). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.9 of AIA Document A201™–2007, General Conditions of the Contract for Construction;
- .2 Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of ten percent (10 %);
- .3 Subtract the aggregate of previous payments made by the Owner; and
- .4 Subtract amounts, if any, for which the Architect has withheld or nullified a Certificate for Payment as provided in Section 9.5 of AIA Document A201–2007.

§ 5.1.7 The progress payment amount determined in accordance with Section 5.1.6 shall be further modified under the following circumstances:

- .1 Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to the full amount of the Contract Sum, less such amounts as the Owner shall determine for incomplete Work, retainage applicable to such work and unsettled claims; and
(Section 9.8.5 of AIA Document A201–2007 requires release of applicable retainage upon Substantial Completion of Work with consent of surety, if any.)
- .2 Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Section 9.10.3 of AIA Document A201–2007.

§ 5.1.8 Reduction or limitation of retainage, if any, shall be as follows:

(If it is intended, prior to Substantial Completion of the entire Work, to reduce or limit the retainage resulting from the percentages inserted in Sections 5.1.6.1 and 5.1.6.2 above, and this is not explained elsewhere in the Contract Documents, insert here provisions for such reduction or limitation.)

N/A

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 FINAL PAYMENT

§ 5.2.1 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 12.2.2 of AIA Document A201–2007, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 inspection has been completed demonstrating work has been completed as specified.

(Paragraph Deleted)

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 INITIAL DECISION MAKER

The Architect will serve as Initial Decision Maker pursuant to Section 15.2 of AIA Document A201–2007, unless the parties appoint below another individual, not a party to this Agreement, to serve as Initial Decision Maker. *(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)*

§ 6.2 BINDING DISPUTE RESOLUTION

For any Claim subject to, but not resolved by, mediation pursuant to Section 15.3 of AIA Document A201–2007, the method of binding dispute resolution shall be as follows: *(Check the appropriate box. If the Owner and Contractor do not select a method of binding dispute resolution below, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.)*

- Arbitration pursuant to Section 15.4 of AIA Document A201–2007
- Litigation in a court of competent jurisdiction
- Other *(Specify)*

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2007.

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2007.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2007 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 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.)*

Prime Rate + 2 %

§ 8.3 The Owner’s representative:
(Name, address and other information)

Peter Friedrichs
Director, Department of Planning and Economic Development
380 Broad Street
Central Falls, RI 02863

§ 8.4 The Contractor’s representative:
(Name, address and other information)

David J. Lucena
 President
 70 Founders Drive
 Woonsocket, RI 02895

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

§ 8.6 Other provisions:

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 9.1.1 The Agreement is this executed AIA Document A101-2007, Standard Form of Agreement Between Owner and Contractor.

§ 9.1.2 The General Conditions are AIA Document A201-2007, General Conditions of the Contract for Construction.

§ 9.1.3 The Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
Bid	Improvements to Crossman Street Park and Sacred Heart Park	June 21, 2016	202

§ 9.1.4 The Specifications:

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

Please refer to bid document titled Improvements to Crossman Street Park and Sacred Heart Park

Section	Title	Date	Pages
00 11 00	Invitation to Bid	June 21, 2016	
00 21 00	Instructions to Bidders	June 21, 2016	
00 22 00	Supplemental Instructions to Bidders	June 21, 2016	
00 31 33	Soil material Testing Information	June 21, 2016	
00 41 00	Bid Form	June 21, 2016	
00 43 00	Bid Security Form	June 21, 2016	
00 45 00	Bidder's Qualification Form	June 21, 2016	
00 52 00	Agreement Form	June 21, 2016	
00 61 00	Performance Bond; Payment Bond	June 21, 2016	
00 72 00	General Conditions	June 21, 2016	
00 73 00	Supplementary Conditions	June 21, 2016	
00 74 00	Special Conditions	June 21, 2016	
00 91 00	Addenda and Modifications	June 21, 2016	

01 11 00	Summary of Work	June 21, 2016
01 33 00	Submittals	June 21, 2016
01 40 00	Quality Requirements	June 21, 2016
01 70 00	Closeout Requirements	June 21, 2016
12 93 00	Site Furnishings	June 21, 2016
22 11 00	Water Service Tap and Drinking Fountain	June 21, 2016
26 05 00	General Electrical	June 21, 2016
26 05 13	Conductors and Cables for Electrical Systems	June 21, 2016
26 05 26	Grounding and Bonding for Electrical Systems	June 21, 2016
26 05 33	Raceways and Boxes for Electrical Systems	June 21, 2016
26 05 53	Identification for Electrical Systems	June 21, 2016
26 24 00	Switchboards and Panelboards	June 21, 2016
26 27 26	Wiring Devices	June 21, 2016
26 56 00	Exterior Lighting	June 21, 2016
31 10 00	Site Clearing	June 21, 2016
31 20 00	Earthwork	June 21, 2016
31 25 00	Erosion and Sedimentation Control	June 21, 2016
32 12 16	Asphalt Paving	June 21, 2016
32 13 13	Concrete Paving	June 21, 2016
32 31 13	Chain Link Fences and Gates	June 21, 2016
32 92 00	Turf and Grasses	June 21, 2016

§ 9.1.5 The Drawings:

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

Refer to Site Improvements for Crossman Street Park in Central Falls, Rhode Island

Refer to Site Improvements for Sacred Heart Park in Central Falls, Rhode Island

Number	Title	Date
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§ 9.1.6 The Addenda, if any:

Number	Date	Pages
Addendum #1	June 29, 2016	2

Portions of Addenda relating to bidding requirements are not part of the Contract Documents unless the bidding requirements are also enumerated in this Article 9.

§ 9.1.7 Additional documents, if any, forming part of the Contract Documents:

.1 AIA Document E201™-2007, Digital Data Protocol Exhibit, if completed by the parties, or the following:

.2 Other documents, if any, listed below:

3

(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201-2007 provides that bidding requirements such as advertisement or invitation to bid, Instructions to Bidders, sample forms and the Contractor's bid are not part of the Contract Documents unless enumerated in this Agreement. They should be listed here only if intended to be part of the Contract Documents.)

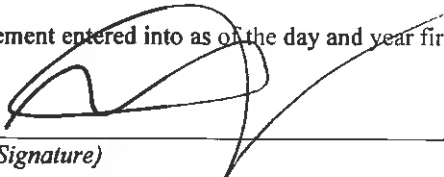
ARTICLE 10 INSURANCE AND BONDS

The Contractor shall purchase and maintain insurance and provide bonds as set forth in Article 11 of AIA Document A201-2007.

(State bonding requirements, if any, and limits of liability for insurance required in Article 11 of AIA Document A201-2007.)

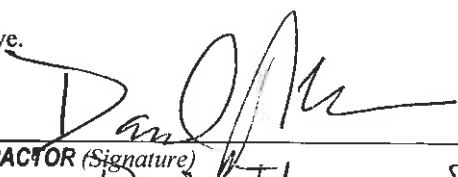
Type of insurance or bond	Limit of liability or bond amount (\$0.00)
Payment	\$317,199
Performance	\$317,199
Liability	\$1,000,000

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

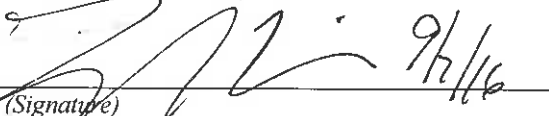


 OWNER (Signature)

James Diossa Mayor
 (Printed name and title)

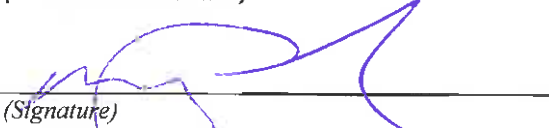


 CONTRACTOR (Signature)
 David J. Lucena Paez
 (Printed name and title)



 (Signature)

Len Morganis AFO
 (Printed name and title)



 (Signature)

Matt Jerzyk, City Solicitor
 (Printed name and title)

Additions and Deletions Report for AIA® Document A101™ – 2007

This Additions and Deletions Report, as defined on page 1 of the associated document, reproduces below all text the author has added to the standard form AIA document in order to complete it, as well as any text the author may have added to or deleted from the original AIA text. Added text is shown underlined. Deleted text is indicated with a horizontal line through the original AIA text.

Note: This Additions and Deletions Report is provided for information purposes only and is not incorporated into or constitute any part of the associated AIA document. This Additions and Deletions Report and its associated document were generated simultaneously by AIA software at 12:37:03 on 09/02/2016.

PAGE 1

face

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The City of Central Falls
380 Broad Street
Central Falls, RI 02863

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Lucena Brothers Inc.
70 Founders Drive
Central Falls, RI 02895

...

Improvements to Crossman Street Park and Sacred Heart Park
Crossman Street and Sacred Heart Avenue, Central Falls, RI 02863
See bid specifications for detailed description.

...

Veri Waterman Associates
7 Central Street
Providence, RI 02907

PAGE 2

See bid specifications.

...

N/A

...

§ 3.3 The Contractor shall achieve Substantial Completion of the entire Work not later than () days from the date of commencement, or as follows: October 31st, 2016 for Sacred Heart Park and December 2016 with an extension for Plantings (grass) May 2017 for Crossman Street Park.

PAGE 3

See bid specifications.

...

§ 4.1 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 Three Hundred Seventeen Thousand, one-hundred ninety-nine dollars and zero cents (\$ 317,199.00), subject to additions and deductions as provided in the Contract Documents.

...

N/A

...

See bid specifications.

...

N/a

...

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

...

§ 5.1.3 ~~Provided that an Application for Payment is received by the Architect not later than the day of a month, the Owner shall make payment of the certified amount to the Contractor not later than the day of the month. If an Application for Payment is received by the Architect after the application date fixed above, payment shall be made by the Owner not later than thirty (30) days after the Architect receives the Application for Payment.~~ Owner receives the Application for Payment unless work has not been completed as specified. Owner shall have fifteen (15) days to make payment following written notification that work is completed as specified.

PAGE 4

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form and supported by such data to substantiate its accuracy as the ~~Architect-Owner~~ may require. This schedule, unless objected to by the ~~Architect-Owner~~, shall be used as a basis for reviewing the Contractor's Applications for Payment.

...

- .1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of ten percent (10 %). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.9 of AIA Document A201™-2007, General Conditions of the Contract for Construction;

...

- .2 Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of ten percent (10 %);

...

- .1 Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to the full amount of the Contract Sum, less such amounts as the ~~Architect~~ Owner shall determine for incomplete Work, retainage applicable to such work and unsettled claims; and

...

N/A

...

- .2 ~~a final Certificate for Payment has been issued by the Architect.~~ inspection has been completed demonstrating work has been completed as specified.

...

~~§ 5.2.2 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:~~

PAGE 5

Arbitration pursuant to Section 15.4 of AIA Document A201-2007

...

Prime Rate + 2. %

...

Peter Friedrichs
Director, Department of Planning and Economic Development
380 Broad Street
Central Falls, RI 02863

PAGE 6

David J. Lucena
President
70 Founders Drive
Woonsocket, RI 02895

...

<u>Bid</u>	<u>Improvements to Crossman Street Park and Sacred Heart Park</u>	<u>June 21, 2106</u>	<u>202</u>
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...

Please refer to bid document titled Improvements to Crossman Street Park and Sacred Heart Park

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<u>Section</u>	<u>Title</u>	<u>Date</u>	<u>Pages</u>
<u>00 11 00</u>	<u>Invitation to Bid</u>	<u>June 21, 2016</u>	
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<u>00 72 00</u>	<u>General Conditions</u>	<u>June 21, 2016</u>	
<u>00 73 00</u>	<u>Supplementary Conditions</u>	<u>June 21, 2016</u>	
<u>00 74 00</u>	<u>Special Conditions</u>	<u>June 21, 2016</u>	
<u>00 91 00</u>	<u>Addenda and Modifications</u>	<u>June 21, 2016</u>	
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<u>01 70 00</u>	<u>Closeout Requirements</u>	<u>June 21, 2016</u>	
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<u>26 05 53</u>	<u>Identification for Electrical Systems</u>	<u>June 21, 2016</u>	
<u>26 24 00</u>	<u>Switchboards and Panelboards</u>	<u>June 21, 2016</u>	
<u>26 27 26</u>	<u>Wiring Devices</u>	<u>June 21, 2016</u>	
<u>26 56 00</u>	<u>Exterior Lighting</u>	<u>June 21, 2016</u>	
<u>31 10 00</u>	<u>Site Clearing</u>	<u>June 21, 2016</u>	
<u>31 20 00</u>	<u>Earthwork</u>	<u>June 21, 2016</u>	
<u>31 25 00</u>	<u>Erosion and Sedimentation Control</u>	<u>June 21, 2016</u>	
<u>32 12 16</u>	<u>Asphalt Paving</u>	<u>June 21, 2016</u>	

<u>32 13 13</u>	<u>Concrete Paving</u>	<u>June 21, 2016</u>
<u>32 31 13</u>	<u>Chain Link Fences and Gates</u>	<u>June 21, 2016</u>
<u>32 92 00</u>	<u>Turf and Grasses</u>	<u>June 21, 2016</u>

Section	Title	Date	Pages
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Refer to Site Improvements for Crossman Street Park in Central Falls, Rhode Island
Refer to Site Improvements for Sacred Heart Park in Central Falls, Rhode

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Island

...

<u>Addendum #1</u>	<u>June 29, 2016</u>	<u>2</u>
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PAGE 8

<u>Type of insurance or bond</u>	<u>Limit of liability or bond amount (\$0.00)</u>
<u>Payment</u>	<u>\$317,199</u>
<u>Performance</u>	<u>\$317,199</u>
<u>Liability</u>	<u>\$1,000,000</u>

<u>Type of insurance or bond</u>	<u>Limit of liability or bond amount (\$0.00)</u>
----------------------------------	---

...

James Diosa Mayor

...

(Signature)

Len Morganis AFO

(Printed name and title)

...

(Signature)

Matt Jerzyk City Solicitor

(Printed name and title)

Certification of Document's Authenticity
AIA® Document D401™ – 2003

I, , hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with its associated Additions and Deletions Report and this certification at 12:37:03 on 09/02/2016 under Order No. 7209172774 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A101™ - 2007, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, as published by the AIA in its software, other than those additions and deletions shown in the associated Additions and Deletions Report.



(Signed)

COMMUNITY DEVELOPMENT MANAGER

(Title)

SEPTEMBER 7, 2016

(Dated)

EMC Insurance Companies. Document A312 - 2010

Performance Bond

CONTRACTOR:

(Name, legal status and address)

Lucena Bros., Inc.
70 Founders Drive
Woonsocket, RI 02895

OWNER:

(Name, legal status and address)

The City of Central Falls
380 Broad Street
Central Falls, RI 02863

CONSTRUCTION CONTRACT

Date: September , 2016

Amount: \$317,000

Description: Improvements to Crossman Street Park and Sacred Heart Park,
(Name and location) Crossman Street and Sacred Heart Avenue,
Central Falls, RI 02863

BOND

Date: September , 2016

(Not earlier than Construction Contract Date)

Amount: \$317,000

Modifications to this Bond: None See Section 16

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

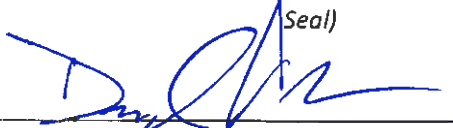
Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

The Document A312-2010 combines two separate bonds, a Performance Bond and a Payment Bond, into one form. This is not a single combined Performance and Payment Bond.

CONTRACTOR AS PRINCIPAL

Company: Lucena Bros, Inc.

(Corporate Seal)

Signature: 

Name David J. Lucena

And Title: President

(Any additional signatures appear on the last page of this Performance Bond.)

(FOR INFORMATION ONLY - Name, address and telephone)

AGENT or BROKER:

Dacey Insurance Agency, Inc.
631 Main Street, East Greenwich, RI 02818
Ph: 401-398-8020

SURETY

Company: Employers Mutual Casualty Co. *(Corporate Seal)*

Signature: 

Name Marcia S. Dacey

And Title: Attorney-in-Fact

OWNER'S REPRESENTATIVE:

(Architect, Engineer or other party:)
Veri Waterman Associates
7 Central Street, Providence, RI 02907

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after

- .1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;
- .2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
- .3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

§ 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

§ 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

- .1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
- .2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

- .1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
- .2 additional legal, design professional and delay costs resulting from the Contractor's default, and resulting from the actions or failure to act of the Surety under Section 5; and
- .3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

§ 9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

§ 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

§ 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 14 Definitions

§ 14.1 Balance of the Contract Price. The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

§ 14.2 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 Contractor Default. Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 14.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

SURETY

Company: _____
(Corporate Seal)

Company: _____
(Corporate Seal)

Signature: _____

Signature: _____

Name and Title: _____

Name and Title: _____

Address _____

Address _____

EMC Insurance Companies. Document A312 - 2010

Payment Bond

CONTRACTOR:

(Name, legal status and address)

Lucena Bros, Inc.
70 Founders Drive
Woonsocket, RI 02895

OWNER:

(Name, legal status and address)

The City of Central Falls
380 Broad Street
Central Falls, RI 02863

CONSTRUCTION CONTRACT

Date: September , 2016

Amount: \$317,000

Description: Improvements to Crossman Street Park and Sacred Heart Park,

(Name and location) Crossman Street and Sacred Heart Avenue

Central Falls, RI 02863

BOND

Date: September , 2016

(Not earlier than Construction Contract Date)

Amount: \$317,000

Modifications to this Bond: None

See Section 18

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

The Document A312-2010 combines two separate bonds, a Performance Bond and a Payment Bond, into one form. This is not a single combined Performance and Payment Bond.

CONTRACTOR AS PRINCIPAL**SURETY**

Company: Lucena Bros, Inc.

(Corporate Seal)

Company: Employers Mutual Casualty Co. (Corporate Seal)

Signature: 

Signature: 

Name David J. Lucena

Name Marcia S. Dacey

And Title: President

And Title: Attorney-in-Fact

(Any additional signatures appear on the last page of this Payment Bond.)

(FOR INFORMATION ONLY - Name, address and telephone)

AGENT or BROKER:**OWNER'S REPRESENTATIVE:**

Dacey Insurance Agency, Inc.
631 Main Street, East Greenwich, RI 02818
Ph: 401-398-8020

(Architect, Engineer or other party:)
Veri Waterman Associates
7 Central Street, Providence, RI 02907

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.

§ 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

§ 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:

§ 5.1 Claimants, who do not have a direct contract with the Contractor,

- .1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim: and
- .2 have sent a Claim to the Surety (at the address described in Section 13).

§ 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).

§ 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.

§ 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

§ 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

§ 7.2 Pay or arrange for payment of any undisputed amounts.

§ 7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

§ 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

§ 10 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

§ 11 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

§ 14 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

§ 16 Definitions

§ 16.1 Claim. A written statement by the Claimant including at a minimum:

- .1 the name of the Claimant;
- .2 the name of the person for whom the labor was done, or materials or equipment furnished;
- .3 a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- .4 a brief description of the labor, materials or equipment furnished;
- .5 the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- .6 the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- .7 the total amount of previous payments received by the Claimant; and
- .8 the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

§ 16.2 Claimant. An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

§ 16.3 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

§ 16.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 16.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

§ 17 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 18 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

SURETY

Company: _____ (Corporate Seal)

Company: _____ (Corporate Seal)

Signature: _____

Signature: _____

Name and Title: _____

Name and Title: _____

Address _____

Address _____



THE FACE AND REVERSE OF THIS DOCUMENT HAVE A COLORED FLAG ON WHITE PAPER

P.O. Box 712 • Des Moines, IA 50306-0712

No. B49681

CERTIFICATE OF AUTHORITY INDIVIDUAL ATTORNEY-IN-FACT

KNOW ALL MEN BY THESE PRESENTS, that:

- 1. Employers Mutual Casualty Company, an Iowa Corporation
2. EMCASCO Insurance Company, an Iowa Corporation
3. Union Insurance Company of Providence, an Iowa Corporation
4. Illinois EMCASCO Insurance Company, an Iowa Corporation
5. Dakota Fire Insurance Company, a North Dakota Corporation
6. EMC Property & Casualty Company, an Iowa Corporation
7. Hamilton Mutual Insurance Company, an Iowa Corporation

hereinafter referred to severally as "Company" and collectively as "Companies", each does, by these presents, make, constitute and appoint: MICHAEL T. DACEY, MARCIA S. DACEY

its true and lawful attorney-in-fact, with full power and authority conferred to sign, seal, and execute its lawful bonds, undertakings, and other obligatory instruments of a similar nature as follows:

In an amount not exceeding Two Million Five Hundred Thousand Dollars.....\$2,500,000.00

and to bind each Company thereby as fully and to the same extent as if such instruments were signed by the duly authorized officers of each such Company, and all of the acts of said attorney pursuant to the authority hereby given are hereby ratified and confirmed.

The authority hereby granted shall expire APRIL 1, 2019 unless sooner revoked.

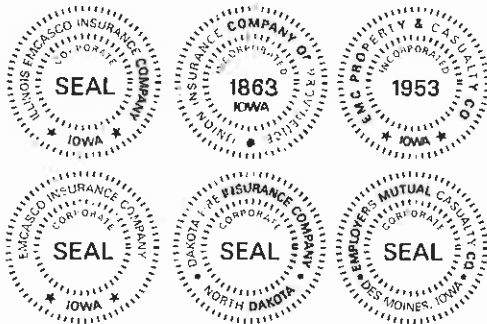
AUTHORITY FOR POWER OF ATTORNEY

This Power-of-Attorney is made and executed pursuant to and by the authority of the following resolution of the Boards of Directors of each of the Companies at a regularly scheduled meeting of each company duly called and held in 1999:

RESOLVED: The President and Chief Executive Officer, any Vice President, the Treasurer and the Secretary of Employers Mutual Casualty Company shall have power and authority to (1) appoint attorneys-in-fact and authorize them to execute on behalf of each Company and attach the seal of the Company thereto, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof; and (2) to remove any such attorney-in-fact at any time and revoke the power and authority given to him or her. Attorneys-in-fact shall have power and authority, subject to the terms and limitations of the power-of-attorney issued to them, to execute and deliver on behalf of the Company, and to attach the seal of the Company thereto, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof, and any such instrument executed by any such attorney-in-fact shall be fully and in all respects binding upon the Company. Certification as to the validity of any power-of-attorney authorized herein made by an officer of Employers Mutual Casualty Company shall be fully and in all respects binding upon this Company. The facsimile or mechanically reproduced signature of such officer, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power-of-attorney of the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN WITNESS THEREOF, the Companies have caused these presents to be signed for each by their officers as shown, and the Corporate seals to be hereto affixed this 11th day of MARCH, 2016.

Seals



Bruce G. Kelley, Chairman of Companies 2, 3, 4, 5 & 6; President of Company 1; Vice Chairman and CEO of Company 7

Michael Freel, Assistant Vice President

On this 11th day of MARCH AD 2016 before me a Notary Public in and for the State of Iowa, personally appeared Bruce G. Kelley and Michael Freel, who, being by me duly sworn, did say that they are, and are known to me to be the Chairman, President, Vice Chairman and CEO, and/or Assistant Vice President/Assistant Secretary, respectively, of each of The Companies above; that the seals affixed to this instrument are the seals of said corporations; that said instrument was signed and sealed on behalf of each of the Companies by authority of their respective Boards of Directors; and that the said Bruce G. Kelley and Michael Freel, as such officers, acknowledged the execution of said instrument to be the voluntary act and deed of each of the Companies. My Commission Expires October 10, 2016.

Kathy Lynn Loveridge, Notary Public in and for the State of Iowa

CERTIFICATE

I, James D. Clough, Vice President of the Companies, do hereby certify that the foregoing resolution of the Boards of Directors by each of the Companies, and this Power of Attorney issued pursuant thereto on MARCH 11, 2016 on behalf of: MICHAEL T. DACEY, MARCIA S. DACEY

are true and correct and are still in full force and effect.

In Testimony Whereof I have subscribed my name and affixed the facsimile seal of each Company this September 2016

[Signature] Vice President

CERTIFICATE OF LIABILITY INSURANCE

DATE (mm/dd/yyyy)
09/09/2016

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Dacey Insurance Agency, Inc. 631 Main Street East Greenwich RI 02818	CONTACT NAME: Dacey Insurance Agency, Inc. PHONE (A/C No. Ext): 401-398-8020 FAX (A/C No.): 401-398-8017 E-MAIL ADDRESS: _____ INSURER(S) AFFORDING COVERAGE NAIC # INSURER A: United Ohio Insurance Co. INSURER B: Beacon Mutual Insurance Co. INSURER C: INSURER D: INSURER E: INSURER F:
---	---

COVERAGES CERTIFICATE NUMBER: REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSTR. LTR.	TYPE OF INSURANCE	ADDITIONAL COVERAGES	POLICY NUMBER	POLICY EFF. (MM/DD/YYYY)	POLICY EXP. (MM/DD/YYYY)	LIMITS
A	GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input checked="" type="checkbox"/> LOC		CPP 0011993 05	04/08/16	04/08/17	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Per occurrence) \$ 100,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMPROP AGG \$ 2,000,000 \$
A	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input checked="" type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS		CPP 0011993 05	04/08/16	04/08/17	COMBINED SINGLE LIMIT (Per accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
A	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input checked="" type="checkbox"/> RETENTION \$ 10,000		CX 0001302 05	04/08/16	04/08/17	EACH OCCURRENCE \$ 1,000,000 AGGREGATE \$ 1,000,000 \$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N N	N/A	08/11/16	08/11/17	<input checked="" type="checkbox"/> WC STATUTORY LIMIT <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$ 100,000 E.L. DISEASE - BA EMPLOYEE \$ 100,000 E.L. DISEASE - POLICY LIMIT \$ 500,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

Project: Improvements to Crossman Street Park and Sacred Heart Park, Crossman Street and Sacred Heart Avenue, Central Falls, RI 02863

NOTE: City of Central Falls, RI, is included as "Additional Insured" with respect to the Commercial General Liability and Business Auto Liability as required per written contract. The Umbrella Liability coverage is written on a "following form" basis with respect to the Commercial General Liability.

Thirty (30) days notice of cancellation applies except Ten (10) day for non-payment of premium.

CERTIFICATE HOLDER CANCELLATION

City of Central Falls 380 Broad Street Central Falls, RI 02863	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE
--	---

USER NAME PASSWORD

[Forgot Username?](#) [Forgot Password?](#)

[Create an Account](#)

SAM.gov will be down for scheduled maintenance Saturday, 09/10/2016, from 8:00 AM to 02:00 PM (EDT).

Entity Dashboard

- Entity Overview
- Entity Registration
 - Core Data
 - Assertions
 - Reps & Certs
 - POCs
- Exclusions
 - Active Exclusions
 - Inactive Exclusions
 - Excluded Family Members

[RETURN TO SEARCH](#)

LUCENA BROS., INC.

DATA ID: 114652167 PAGE Code: 1M.K6
Status: Active

Expiration Date: 08/17/2017

Purpose of Registration: An Award

70 FOUNDERS DR
WORTHINGTON KEY, RI 02895-6154
UNITED STATES

Entity Overview

Entity Registration Summary

Name: LUCENA BROS., INC.
Business Type: Business or Organization
Last Updated By: David Lucena
Registration Status: Active
Activation Date: 08/17/2016
Expiration Date: 08/17/2017

Exclusion Summary

Active Exclusion Records? No



City of Central Falls
Office of Planning and Economic Development



Project Manual

Improvements to
Crossman Street Park and
Sacred Heart Park

Crossman Street and Sacred Heart Avenue
Central Falls, Rhode Island

Bid Number 20160005

Issue Date: June 21, 2016

Due Date: July 28, 2016 @ 4:00 PM

Design Consultant

VWA
VERI WATERMAN ASSOCIATES
7 Central Street
Providence, Rhode Island 02907
401.274.1360 | veriwatman.com

CROSSMAN STREET PARK AND SACRED HEART PARK
Central Falls, Rhode Island

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01 40 00	Quality Requirements
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26 56 00	Exterior Lighting
31 10 00	Site Clearing
31 20 00	Earthwork
31 25 00	Erosion and Sedimentation Control
32 12 16	Asphalt Paving
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Front End Specifications

CROSSMAN STREET PARK AND SACRED HEART PARK
Central Falls, Rhode Island

SECTION 00 11 00

INVITATION TO BID

NOTICE TO CONTRACTORS

Date: June 21, 2016

Project: **IMPROVEMENTS TO CROSSMAN STREET PARK AND SACRED HEART PARK
Bid Number 20160005
Crossman Street and Sacred Heart Avenue
Central Falls, Rhode Island**

Project Description: Installation of various park improvements at Crossman Street Park and Sacred Heart Park.

There will be a **MANDATORY** Pre-Bid Meeting held at Central Falls City Hall Council Chambers, 580 Broad Street, Central Falls, RI 02863 at 11:00 AM on Wednesday, June 29, 2016. All interested bidders will be required to attend.

1. Receipt and Opening of Proposals

Sealed bids will be accepted in the office of the Purchasing Agent, City Hall, Central Falls, Rhode Island, until the time indicated on the attached advertisement for bids, for the commodities, equipment or services listed in the specifications, and will be then publicly opened and read at 6:00 PM on Thursday, July 28, 2016 in the City Hall Council Chambers.

Bid must be submitted in a sealed envelope and addressed to:

City of Central Falls
Purchasing Department
580 Broad St.
Central Falls, RI 02863

The lower left corner of the envelope must contain the following identification: **SEALED BID, Improvements to Crossman Street Park and Sacred Heart Park, Bid Number 20160005.** All bids must be received by 4:00 P.M. in the Office of the Purchasing Agent on Thursday, July 28, 2016. **NO BIDS WILL BE ACCEPTED AFTER 4:00 P.M.**

2. Form of Bid

Bids shall be submitted with **One (1) Original and Four (4) Copies**, with supplemental information, drawings, warranties and other required documentation, literature and material to be provided, with the bid.

3. Submission of Bids

- a. Envelopes containing bids must be sealed and addressed to the Purchasing Agent, City Hall, 580 Broad Street, Central Falls, RI 02863 and must be marked with the name and address of the bidder, date and hour of opening, and name of bid item.
- b. The Purchasing Agent will indicate in the advertisement when the bids will be opened and no bid received thereafter will be considered.
- c. Any bidder may withdraw their bid by written request at any time prior to the advertised time for opening. Telephone bids, amendments, or withdrawals will not be accepted.

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- d. Unless otherwise specified, no bid may be withdrawn for a period of thirty (30) days from time of bid opening.
- e. Negligence on the part of the bidder in preparing the bid confers no rights for the withdrawal of the bid after it has been opened.
- f. Bids received prior to the time opening will be securely kept, unopened. No responsibility will be attached to an officer or person for the premature opening of a bid not properly addressed and identified.
- g. Any deviation from the specifications must be noted in writing and attached as a part of the bid. The bidder shall indicate the item or part with the deviation and indicate how the bid will deviate from specifications.
- h. A five percent (5%) bid bond is required to accompany all bids in the form of certified check, cashier's check, treasurer's check, or bid bond in the amount of five (5%) percent of the total bid. If the bidder is a partnership, the bond should be signed by each of the individuals who are partners. If the bidder is a corporation, the bond should be signed in its correct incorporated name by a duly authorized officer, agent, or attorney-in-fact and there should be attached to it a certified copy of their power of attorney to sign such bonds. There should be executed an appropriate number of counterparts of the bond corresponding to the number of counterparts of the contract. The surety, for value received, hereby stipulates and agrees that the obligations of said surety and its bond shall be in no way impaired or affected by any extension of the time within which the owner may accept such bid; and said surety does hereby waive notice of any such extension. Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.
- i. Specifications shall be made a part of any contract by and between the City of Central Falls and the bidder.
- j. If the estimated cost of the article or labor and materials is \$5,000.00 or more, the successful bidder must provide, within 7 days of notification of the successful bid, a performance bond of an approved surety company in a sum equal to the estimated contract price which bond shall be conditioned upon the full and faithful performance of the contract. It shall provide further, that in the event the bidder fails or neglects to execute the contract or deliver the bond, the contract shall be null and void and the bond shall be retained by the City as liquidated damages for the delay and expense caused by the abandonment of the contract.

4. Rhode Island Sales Tax

The City is exempt from the payment of the Rhode Island Sales Tax under the 1956 General Laws of the State of Rhode Island, 44-18-30, Paragraph 1, as amended.

5. Federal Excise Taxes

The City is exempt from the payment of any excise tax or federal transportation taxes. The price bid must be exclusive of taxes and will be so construed.

6. Qualifications of Bidders

The City may make such investigations as it deems necessary to determine the ability of the bidder to perform the work. The bidder shall furnish the City with all such information and data for the purpose as may be requested.

7. Addenda and Interpretations

No interpretation on the meaning of the plans, specifications or other contract document will be made to any bidder orally. Every request for such interpretations should be in writing addressed to the City of Central Falls, Office of the Purchasing Agent, 580 Broad Street, Central Falls, RI 02863 and to be given consideration must be received at least seven (7) days prior to the date fixed for the opening of the bids.

8. Indemnification and Hold Harmless

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The bidder shall protect defend and indemnify the City of Central Falls, including its officers, agents and employees, and hold them free and harmless from all liability, penalties, costs, losses, damages, expenses, causes of action, claims or judgments, including attorney's fees, resulting from injury to, or death of, any person or damage to property of any kind, which injury, death or damage arises out of, or is in any way connected with, the performance of the work under any contract made as part of this award. It shall apply to any acts or omissions of bidder's agents, employees, subcontractors or suppliers. The bidder also shall hold the City of Central Falls harmless from any and all claims or liens for labor, services, or materials furnished to the bidder in connection with the performance of the bidder's obligation under any contract between the bidder and City. This section shall not be applicable to injury, death or damage to property arising from the sole negligence or sole willful misconduct of the City of Central Falls, its officers, agents or employees.

9. Property lost, damaged or destroyed.

Any property or work to be provided by bidder will remain at the bidder's risk until written acceptance by the City of Central Falls and the bidder will replace, at bidder's expense, all property or work lost, damaged or destroyed by any cause whatsoever.

10. Evidence of Insurance

A policy of auto, general liability and property damage insurance shall be attached hereto, covering any and all work performed under a contract between the City and bidder, naming the City as an additional insured shall be made part of any contract between the City and bidder in an amount of not less than \$1,000,000 for projects in excess of \$500,000. A policy of professional liability or errors and omissions insurance covering any and all work performed under any contract between the City and bidder naming said bidder shall be attached hereto. A copy of workers compensation insurance policy shall be attached, if required by Rhode Island law for this bid and covering all work to be performed under any contract between the City and bidder naming the bidder as insured shall be attached hereto. The City, upon award of bid, will request verification from the insurance company to ensure that the agent has properly notified the company and that coverage has been bound.

11. MBE/WBE Requirement

The bidder shall include a plan for meeting the City's requirement that a minimum of 25% of the value of the bid will be completed by State-of-Rhode-Island-certified Minority Business Enterprises (MBE) and/or Women Business Enterprises (WBE). Additionally, preference shall be given to Central Falls based sub-contractors and the hiring of employees who reside in the city of Central Falls.

12. Other

Refer to Specification Sections 00 21 00 – Instructions to Bidders and 00 22 00 – Supplemental Instructions to Bidders for specific Bidding requirements. All bids must have the attachments listed in Article 9.4 – BID SUBMITTAL PACKAGE located in Specification Section 00 22 00 – Supplemental Instructions.

Each bidder must inform himself/herself fully of the conditions relating to the performance of the contract, the delivery of documents and material and the employment of labor thereon. Failure to do so will not relieve a successful bidder of his/her obligations to furnish all equipment, material and labor necessary to carry out the provisions of this contract at the accepted bid price.

The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the Owner that such bidder is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein within the specified time frame and for the price bid. Conditional Bids will not be accepted.

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This is a bonded project (Bid, Performance, and Payment) and subject to prevailing wages. See Specification Sections 00 43 00 – Bid Security Form and 00 61 00 – Performance Bond and Payment Bond).

END OF SECTION

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SECTION 00 22 00

SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

The following supplements modify Section 00 21 00 "INSTRUCTIONS TO BIDDERS", AIA A701, 1997 Edition. Where a portion of the "INSTRUCTIONS TO BIDDERS" is modified, added or deleted by these Supplementary Instructions to Bidders, the unaltered portions of the "INSTRUCTIONS TO BIDDERS" shall remain in effect.

Article 3 - Bidding Documents

Delete Subparagraph 3.2.2 and substitute the following:

- 3.2.2 Bidders and Sub-bidders requiring clarification or interpretation of the Bidding Documents shall make a written request which shall reach the Owner at least seven (7) days prior to the date for receipt of Bids. All questions dealing with the contents of the contract documents should be addressed in writing by email to:

Contact Name: Peter Friedrichs
Director
Office of Planning and Economic Development
City of Central Falls
580 Broad Street
Central Falls, RI 02863
Email: pfriedrichs@centralfallsri.us

Questions received by phone will not receive a response- questions must come in written form only.

Article 4 - Bidding Procedures

- 4.1.1 Add the following: One (1) Original and Four (4) Copies of the Bid Submittal Package shall be submitted by reproducing the forms provided with the Contract Documents. Do not submit the entire Project Manual.
- 4.4.1 Add the following: No bidder may withdraw a bid within thirty (30) days- Saturdays, Sundays, and Legal Holidays included- after the actual date of the bid opening.

Article 5 – Consideration of Bids

- 5.3.1 Add the following: The Owner may award this project to multiple contractors on a partial basis, if it is in its best interest to do so. In hiring additional employees or subcontractors for this project, preference is to be given to residents or business of Central Falls, respectively. Please provide a plan to meet the City of Central Falls Purchasing requirements that 25% of the value of this project be performed by Minority Business Enterprises (MBE) and/or Women Business Enterprises (WBE) as certified by the Minority Business Enterprise Compliance Office of the State of Rhode Island.

Article 7 - Performance Bond and Payment Bond

- 7.1.1 Replace with the following: A properly executed AIA Document A312 "Performance Bond and Payment Bond" is required (see Specification Section 00 61 00 – Performance Bond & Payment Bond). Bond amounts shall be 100% of the contract price. The party to whom the contract is

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awarded will be required to execute the Agreement and obtain the Performance Bond and Payment Bond within ten (10) calendar days from the date when Notice of Award is delivered to the Bidder. The Notice of Award shall be accompanied by the necessary Agreement and Bond Forms. In case of failure of the Bidder to execute the Agreement, the Owner may, at its option, consider the Bidder in default, in which case the Bid Bond accompanying the proposal shall become to property of the Owner.

7.1.3 Delete the entire paragraph.

Article 9 - Additional Instructions

Add Article 9 - Additional Instructions with the following paragraphs:

9.1 LIQUIDATED DAMAGES

9.1.1 The OWNER and CONTRACTOR recognize the delays, expense, and difficulties involved in proving through legal or arbitration procedures that the project has been completed on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay OWNER One Hundred Dollars (\$100.00) for each day that expires after the time specified in Article 9.2.1 for Substantial Completion until the work is substantially complete.

9.2 CONTRACT TIME

9.2.1 Crossman Street Park and Sacred Heart Park are both available for construction to commence within two (2) weeks of contract award. The work at both parks shall be substantially complete by **December 5, 2016**. "Substantially Complete" is as specified in Section 00 72 00 "General Conditions of the Contract for Construction, AIA Document A201", as well as Section 00 73 00 "Supplemental General Conditions" of this Project Manual. The work at both parks shall be complete by **December 15, 2016**, and be made in all respects acceptable to the Owner.

9.2.2 The Owner will provide the Contractor with the calendar dates once the bid is awarded.

9.3 BID SUBMITTAL PACKAGE

9.3.1 The Bid Submittal package shall include the following fully executed and complete items as required in this Project Manual:

1. 00 41 00 – Bid Form
2. 00 43 00 – Bid Security Form
3. 00 45 00 – Bidder's Qualification Form
4. 00 52 00 – Agreement Form
5. 00 61 00 – Performance Bond & Payment Bond
6. APPENDIX B – Anti Kickback Acknowledgement

9.4 OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA) OF APRIL 28, 1971

9.4.1 The Contractor will comply with all current OSHA regulations, latest edition revised.

9.5 EXISTING PERMITS

9.5.1 The Contractor will comply with any and all City, State and Federal permits governing the construction and improvements of this project.

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The following modify Section 00 41 00 "BID FORM". Any unaltered portions of the "BID FORM" shall remain in effect.

TOTAL BASE BID

In addition to providing the total base bid, in figures and in words, add the following: The bidding Contractor shall provide a Unit Price and Price for each work item at each location as outlined in the Itemized Scope of Work and Supporting Documents. The bidding Contractor shall provide this information in the corresponding columns of the "ITEMIZED BID PRICE" section of the Itemized Scope of Work Spreadsheet included as part of the Itemized Scope of Work and Supporting Documents. The bidding Contractor shall attach the completed spreadsheet to the BID FORM. This spreadsheet is hereby considered part of the BID FORM, thus any BID FORM submitted without this completed attachment will be considered incomplete.

END OF SECTION

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Central Falls, Rhode Island

SECTION 00 31 33

SOIL MATERIAL TESTING INFORMATION

PART 1 – GENERAL

1.1 SOIL MATERIAL TESTING INFORMATION

- A. This Document with its referenced attachment is part of the Procurement and Contracting Requirements for the Project. It provides Owner's information for Bidders' convenience and is intended to supplement rather than serve in lieu of the Bidders' own investigations. It is made available for the Bidders' convenience and information, but is not a warranty of existing conditions. This Document and its attachment are not part of the Contract Documents.
- B. A Soil Material Testing Information Report for Crossman Street Park, prepared by the UMass Extension Soil and Plant Tissue Testing Laboratory, Amherst, MA, report date 3/28/2015, is appended to this Document. Information contained herein is meant to assist the Bidder in developing a cost for soil amendments necessary for conformance with specification section 32 92 00 – Turf and Grasses.
- C. Related Requirements:
1. Document 00 21 00 "Instructions to Bidders" for the Bidder's responsibilities for examination of Project site and existing conditions.

END OF SECTION

Soil Test Report

Prepared For:

Lar Greene
 Waterman Design Associates
 31 E Main St
 Westborough, MA 01581

lcg@wdassoc.com
 508-366-6552

Sample Information:

Sample ID: RI 184 1

Order Number: 20286

Lab Number: S160316-220

Area Sampled: 38600 sq ft

Received: 3/16/2016





Reported: 3/28/2016

Results

<i>Analysis</i>	<i>Value Found</i>	<i>Optimum Range</i>	<i>Analysis</i>	<i>Value Found</i>	<i>Optimum Range</i>
Soil pH (1:1, H ₂ O)	5.8		Cation Exch. Capacity, meq/100g	8.8	
Modified Morgan extractable, ppm			Exch. Acidity, meq/100g	6.5	
<i>Macronutrients</i>			Base Saturation, %		
Phosphorus (P)	3.0	4-14	Calcium Base Saturation	23	50-80
Potassium (K)	49	100-160	Magnesium Base Saturation	3	10-30
Calcium (Ca)	400	1000-1500	Potassium Base Saturation	1	2.0-7.0
Magnesium (Mg)	29	50-120	Scoop Density, g/cc	1.41	
Sulfur (S)	5.8	>10	<i>Optional tests</i>		
<i>Micronutrients *</i>			Soil Organic Matter (LOI), %	3.0	
Boron (B)	0.1	0.1-0.5	Soluble Salts (1:2), dS/m	0.01	<0.6
Manganese (Mn)	1.0	1.1-6.3	Nitrate-N (NO ₃ -N), ppm	3	
Zinc (Zn)	4.7	1.0-7.6			
Copper (Cu)	0.5	0.3-0.6			
Iron (Fe)	8.8	2.7-9.4			
Aluminum (Al)	116	<75			
Lead (Pb)	10.7	<22			

* Micronutrient deficiencies rarely occur in New England soils; therefore, an Optimum Range has never been defined. Values provided represent the normal range found in soils and are for reference only.

Soil Test Interpretation

Nutrient	Very Low	Low	Optimum	Above Optimum
Phosphorus (P):				
Potassium (K):				
Calcium (Ca):				
Magnesium (Mg):				



Soil and Plant Tissue Testing Laboratory
 203 Paige Laboratory
 161 Holdsworth Way
 University of Massachusetts
 Amherst, MA 01003
 Phone: (413) 545-2311
 e-mail: soiltest@umass.edu
 website: soiltest.umass.edu

Recommendations for New Lawn Construction

Limestone (Target pH of 6.5)	Nitrogen, N	Phosphorus, P2O5	Potassium, K2O
125	2 - 4	1.5	3

Comments:

- For instructions on converting nutrient recommendations to fertilizer applications in home gardens, lawns and landscapes, see Reference "Step-by-Step Fertilizer Guide for Home Grounds and Gardening" (listed below).
- Incorporate limestone thoroughly into the top 6 inches of soil.
- Your magnesium level is low. Dolomitic limestone is recommended.
- Many fertilizer sources and rates may be combined to provide acceptable turfgrass fertility.
- For best results, split the N, P2O5, and K2O recommendations above into three to four applications over the course of the growing season at six to eight week intervals, beginning in mid- to late-April.

References:

Home Lawn and Garden Information <http://ag.umass.edu/interest-areas/home-lawn-garden>

Step-by-Step Fertilizer Guide for Home Grounds and Gardening <https://soiltest.umass.edu/fact-sheets/step-step-fertilizer-guide-home-grounds-and-gardening>

General References:

Interpreting Your Soil Test Results <http://soiltest.umass.edu/fact-sheets/interpreting-your-soil-test-results>

For current information and order forms, please visit <http://soiltest.umass.edu/>

UMass Extension Nutrient Management <http://ag.umass.edu/agriculture-resources/nutrient-management>

CROSSMAN STREET PARK AND SACRED HEART PARK
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SECTION 00 41 00

BID FORM

IMPROVEMENTS TO CROSSMAN STREET PARK AND SACRED HEART PARK
Crossman Street and Sacred Heart Avenue
Central Falls, RI

BIDDER

Name of Bidder

TO THE AWARDING AUTHORITY:

- A. The undersigned hereby declares that the only person or persons interested in this proposal or in the contract to be taken with the Owner is/are named hereinafter; that this proposal is made without any connection or collusion with any other person or persons making any proposals for the same work; and is in all respects fair and without collusion or fraud.
- B. The undersigned further declares that he/she has carefully examined both sites of the work described herein; has become thoroughly familiar with local conditions and the character and extent of the work; has carefully examined the Itemized Scope of Work and Supporting Documents, Project Manual and Contract Documents, including all Addenda, which are acknowledged to be a part of this proposal and thoroughly understands their stipulations, requirements, and provisions; and that he/she will contract, in the form of contract required, to furnish all equipment, materials, and labor (prevailing wages) necessary to carry out such contract in the manner and on the conditions set forth therein in accordance with the Itemized Scope of Work and Supporting Documents, Project Manual and Contract Documents; and to perform or observe all other contract requirements thereby, and to accept in full payment, therefore, the following total base bid.
- C. The Owner reserves the right to award the entire project, or delete portions of the work to funds available, whichever is in the best interest of the Owner.
- D. Time is of the essence. Contractor agrees that work at both parks shall be 100% complete and acceptable to the Owner by **December 15, 2016**.

TOTAL OF BASE BID:

In Figures

In Words

BID FORM
00 41 00 1

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E. COMPOSITE BID PRICES

The following shall be submitted as detailed portions of the Total of Base Bid. Costs for all equipment, materials, and labor (prevailing wages) necessary to provide the work complete in place. Include all associated costs.

1. **Mobilization and Site Preparation/Clearing (Both Parks):** including all work indicated on the plans and included in the specifications.
(In Words): _____ (In Figures): \$ _____
2. **Earthwork and Grading (Both Parks):** including utility trench excavation and backfill, rough and final grading, utility sleeves, mounding, disposal and stockpiling, and all other work indicated on the plans and included in the specifications.
(In Words): _____ (In Figures): \$ _____
3. **Erosion and Sedimentation Control (Both Parks):** including staked hay bales, inlet sediment control devices, all other appurtenances as required, and all other work indicated on the plans and included in the specifications.
(In Words): _____ (In Figures): \$ _____
4. **Stone Dust Walkways (Both Parks):** including new compacted gravel base, new 3" depth compacted stone dust paths at widths indicated, and all other work indicated on the plans and included in the specifications.
(In Words): _____ (In Figures): \$ _____
5. **Concrete Paving (Both Parks):** poured in place concrete paving for bases for benches, picnic tables, receptacles, etc., including all work indicated on the plans and included in the specifications.
(In Words): _____ (In Figures): \$ _____
6. **Chain Link Fences and Gates (Sacred Heart Park):** including all work indicated on the plans and included in the specifications.
(In Words): _____ (In Figures): \$ _____
7. **Site Furnishings (Crossman Park):** including benches, picnic tables, and all other work indicated on the plans and included in the specifications.
(In Words): _____ (In Figures): \$ _____
8. **Site Furnishings (Sacred Heart Park):** including benches, receptacles, dog waste station, and all other work indicated on the plans and included in the specifications.
(In Words): _____ (In Figures): \$ _____
9. **Turf and Grasses (Both Parks):** including all work indicated on the plans and included in the specifications.
(In Words): _____ (In Figures): \$ _____
10. **Electrical Utilities (Crossman Park):** including all new fixtures, lamps, foundations, conduit, electrical cable, connections, permits, fusing, switches, hand holes, and all other work indicated on the plans and included in the specifications.
(In Words): _____ (In Figures): \$ _____
11. **Water Utilities (Both Parks):** including all new bubbler fixtures, conduit, connections, permits, gates and valves, and all other work indicated on the plans and included in the specifications.
(In Words): _____ (In Figures): \$ _____

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F. UNIT PRICES

In addition to the Composite Bid Prices, the bidder shall state Unit Prices for the various items of work listed below. The Unit Prices as quoted are for computing adjustments to the Total Base Bid either prior to Contract Award or during the course of construction, based upon extra work ordered by the Owner, or for work countermanded, reduced, or omitted by the Owner.

Unit Prices are to be a complete price to be added or deducted on the basis of quantities of work involved, for each work item in place in the unit. The Owner reserves the right not to accept unit prices if, in the Owner's opinion, the unit prices are unreasonable.

The Value of Unit Prices shall include all work indicated on the plans and included in the specifications. Unit price items and installation shall be equal in all respects to the requirements specified and shown on the drawings of this contract for the same or similar item.

<u>Item #</u>	<u>Item with Unit Price (Words and Figures)</u>	<u>Unit</u>
1.	Benches (Crossman Park)	EA
	(In Words): _____	(In Figures): \$ _____
2.	Picnic Tables (Crossman Park)	EA
	(In Words): _____	(In Figures): \$ _____
3.	Site Furnishings (Sacred Heart Park)	LS
	(In Words): _____	(In Figures): \$ _____
4.	4' Height Chain Link Fence (Sacred Heart Park)	LF
	(In Words): _____	(In Figures): \$ _____
5.	Loam and Seed (Both Parks)	SF
	(In Words): _____	(In Figures): \$ _____
5.	Stone Dust Walkways (Both Parks)	CY
	(In Words): _____	(In Figures): \$ _____
6.	Light Fixtures (Crossman Park)	EA
	(In Words): _____	(In Figures): \$ _____
7.	Rock Excavation (Both Parks) (As defined in Section 31 20 00 Earthwork)	CY
	(In Words): _____	(In Figures): \$ _____

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G. BID ALTERNATES:

No Bid Alternates shall be accepted unless deemed in the best interest of the Owner.

H. The undersigned herewith acknowledges the receipt of the following Addenda:

<u>Addendum No.</u>	<u>Description</u>
_____	_____
_____	_____
_____	_____

I. The undersigned hereby certifies that he/she is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work.

J. The Contractor acknowledges that the TOTAL OF BASE BID is inclusive of all necessary equipment, materials, and labor (prevailing wages) as outlined in the Itemized Scope of Work and Supporting Documents and as indicated in the specifications and herein. Any equipment, materials, and labor (prevailing wages) not indicated herein but included in the plans or specifications will remain the sole responsibility of the Contractor to furnish.

CROSSMAN STREET PARK AND SACRED HEART PARK
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K. Representing the Bidder indicated above, I hereby certify that the TOTAL BASE BID offered meets all of the specifications of the Owner.

Date

Print Name of General Bidder

Signature of Authorized Principal

Print Name and Title of Principal

Business Address

City, State, Zip Code

Telephone Number

General Bidder Federal Tax Identification Number

General Bidder DUNS Number

CROSSMAN STREET PARK AND SACRED HEART PARK
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SECTION 00 43 00

BID SECURITY FORM

Know all men by these presents, that we _____
(insert name and address or legal title of Contractor)
as Principal, hereinafter called the Principal, and

(insert name and address or legal title of Surety)

a corporation duly organized under the laws of the State of _____ as
Surety, hereinafter called the Surety, are held and firmly bound unto the Owner as defined in the Contract
Documents for the **Improvements to Crossman Street Park and Sacred Heart Park** on Crossman
Street and Sacred Heart Avenue in Central Falls, RI as Obligee, hereinafter called the Obligee, in the
sum of

_____ (\$ _____) for the payment of
which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs,
executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

Whereas, the Principal has submitted a bid for

(insert full name, address and description of project)

Now, therefore, if the Obligee shall accept the bid of the Principal and the Principal shall enter into a
Contract with the Obligee in accordance with the terms of such bid, and give such bond or bonds as may
be specified in the bidding or Contract Documents with good and sufficient surety for the faithful
performance of such Contract and for the prompt payment of labor and material furnished in the
prosecution thereof, or in the event of the failure of the Principal to enter such Contract and give such
bond or bonds, if the Principal shall pay to the Obligee the difference not to exceed the penalty hereof
between the amount specified in said bid and such larger amount for which the Obligee may in good faith
contract with another party to perform the Work covered by said bid, then this obligation shall be null and
void, otherwise to remain in full force and effect.

Signed and sealed this _____ day of _____, 2016

Principal Title

Witness Title

Witness Title

END OF SECTION

CROSSMAN STREET PARK AND SACRED HEART PARK
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SECTION 00 45 00

BIDDERS QUALIFICATION FORM

Submit to the Owner the data required on this statement:

1. Name of Bidder:
2. Business Address:
3. Date Organized:
4. Where Incorporated:
5. How many years have you been engaged in the contracting business under the present name?
6. Contracts on hand (schedule these showing gross amount of each contract, name of project, location, phone number and name of project owner, architect/engineer).
7. Type of work performed by your company. Attach additional sheets as required to supply this information.
8. Have you ever failed to complete any work awarded to you? If so, where and why? Attach additional sheets as required to supply this information.
9. Have you ever defaulted on a contract? If so, where and why? Attach additional sheets as required to supply this information.
10. List all similar projects completed by your company including approximate cost, location, name and phone number of project owner, and architect/engineer.
11. List your major equipment.
12. List of subcontractors by company which you propose to retain for this project, approximate value of subcontract and previous working relationship with your company.
13. Background and experience of the principal members of your personnel, including the officers. Include additional sheets as required to supply this information.
14. Credit available. Furnish written evidence. Include additional sheets as required to supply this information.
15. Financial statement, recent and attested or certified. Include additional sheets as required to supply this information.

END OF SECTION

CROSSMAN STREET PARK AND SACRED HEART PARK
Central Falls, Rhode Island

SECTION 00 52 00

AGREEMENT FORM

Agreement made as of the date of issue of the Purchase Order for this Work.

Project Title:

Improvements to Crossman Street Park and Sacred Heart Park
Crossman Street and Sacred Heart Avenue
Central Falls, Rhode Island

Between the Owner:

City of Central Falls
580 Broad Street
Central Falls, RI 02863

Owner's Contact:

Peter Friedrichs, Director
Office of Planning & Economic Development
401.616.2425
pfriedrichs@centralfallsri.us

And the Contractor:

As defined in the Signed Agreement.

NOW, THEREFORE, in consideration of the mutual covenants hereinafter set forth, Contractor and Owner agree as follows:

ARTICLE 1 - THE CONTRACT DOCUMENTS

1.1 See Section 00 72 00 - GENERAL CONDITIONS, Article 1 as amended for enumeration of Contract Documents.

ARTICLE 2 - THE WORK OF THIS CONTRACT

2.1 The Contractor shall fully execute the Work described in the Contract Documents, except to the extent specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 - DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

3.1 The Date of Commencement of the Work shall be the issue date of the Signed Agreement from the Owner for this Work.

3.2 The Contract Time shall be measured from the Date of Commencement.

3.3 The Contractor shall achieve Substantial Completion of the entire project by **December 5, 2016**. This is the date at which liquidated damages shall begin, and this date may only be adjusted as provided for in the Contract Documents. Contractor shall be responsible for completing the submittals required for issue of a Signed Agreement in a timely manner. No extension will be granted for Purchasing delays.

3.4 Liquidated Damages: The amount payable by the Contractor to the Owner in liquidated damages shall be One Hundred Dollars (\$100.00) per day.

ARTICLE 4 - CONTRACT SUM

CROSSMAN STREET PARK AND SACRED HEART PARK
Central Falls, Rhode Island

4.1 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 as shown on the Signed Agreement, subject to additions and deductions as provided for in the Contract Documents.

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

As per Signed Agreement.

4.3 Unit prices, if any, are as follows:

As per Signed Agreement.

ARTICLE 5 – PAYMENTS

5.1 PROGRESS PAYMENTS

5.1.1 Based upon Applications for Payment submitted to the Owner's Contact by the Contractor and Certificates for Payment issued by the Owner's Contact, the Owner shall make progress payments on account of the Contract Sum to the Contractor as detailed in the General Conditions as amended, and elsewhere in the Contract Documents.

5.2 FINAL PAYMENT

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

5.2.1.1 The Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 12.2.2 of Section 00 72 00 - GENERAL CONDITIONS, and to satisfy other requirements, if any, which extend beyond final payment; and

5.2.1.2 A final Certificate of Payment has been issued by the Owner's Contact.

5.2.2 The Owner's final payment to the Contractor, less warranty retainage, shall be made no later than (1) when the Contractor has fully performed the Work of the Contract as provided in Subparagraph 5.2.1 above, and (2) 30 days after the issuance of the Owner's Contact final Certificate of Payment.

ARTICLE 6 - TERMINATION OR SUSPENSION

6.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of Section 00 72 00 - GENERAL CONDITIONS.

6.2 The Work may be suspended by the Owner as provided in Article 14 of Section 00 72 00 - GENERAL CONDITIONS.

ARTICLE 7 - MISCELLANEOUS PROVISIONS

7.1 Where reference is made in this Agreement to a provision of Section 00 72 00 - GENERAL CONDITIONS or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

7.2 The Contractor's representative shall be identified upon completion of the Signed Agreement.

7.3 In the absence of an emergency, neither the Owner's nor the Contractor's representative shall be changed without 10 days written notice to the other party.

CROSSMAN STREET PARK AND SACRED HEART PARK
Central Falls, Rhode Island

7.4 If the Contractor fails to achieve Final Completion of the Project by the time established herein due to inaction or negligence on the part of the Contractor or their agents, then the Owner reserves the right to complete the Work in accordance with Section 2.4 of Section 00 72 00 - GENERAL CONDITIONS, Owner's Right To Carry Out The Work.

This Agreement is entered into as of the date of the applicable Signed Agreement and is assumed as executed once the Signed Agreement is issued.

END OF SECTION

CROSSMAN STREET PARK AND SACRED HEART PARK
Central Falls, Rhode Island

SECTION 00 61 00

PERFORMANCE BOND; PAYMENT BOND

PERFORMANCE BOND

CONTRACTOR (Name and Address):

SURETY(Name and Address):

OWNER (Name and Address):

CONSTRUCTION CONTRACT:

Date:

Amount:

Description(Name and Location):

BOND

Date(Not earlier than Construction Contract Date):

Amount:

Modifications to this Bond('None' or 'See Last Page'):

CONTRACTOR AS PRINCIPAL

Company: (corporate seal)

SURETY

Company: (corporate seal)

Signature _____

Signature _____

Name and title:

Name and title:

(Any additional signatures appear on last page)

BELOW IS FOR INFORMATION ONLY – Name, address and telephone)

AGENT OR BROKER:

OWNER'S REPRESENTATIVE:

PERFORMANCE BOND; PAYMENT BOND
00 61 00 1

CROSSMAN STREET PARK AND SACRED HEART PARK
Central Falls, Rhode Island

1. The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except to participate in conferences as provided in Subparagraph 3.1.

3. If there is no Owner Default, the Surety's obligation under this Bond shall arise after:

3.1 The Owner has notified the Contractor and the Surety at its address described in Paragraph 10 that the Owner is considering declaring a Contractor Default and has requested and attempted to arrange a conference with the Contractor and the Surety to be held not later than fifteen days after receipt of such notice to discuss methods of performing the Construction Contract. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default; and

3.2 The Owner has declared a Contractor Default and formally terminated the Contractor's right to complete the contract. Such Contractor Default shall not be declared earlier than twenty days after the Contractor and the Surety have received notice as provided in Subparagraph 3.1; and

3.3 The Owner has agreed to pay the balance of the Contract Price to the Surety in accordance with the terms of the Construction Contract or to a contractor selected to perform the Construction Contract in accordance with the terms of the contract with the Owner.

4. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

4.1 Arrange for the Contractor, with consent of the Owner, to perform and complete the Construction Contract; or

4.2 Undertake to perform and complete the Construction Contract itself, through its agents or through independent contractors; or

4.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and the contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 6 in excess of the balance of the Contract Price incurred by the Owner resulting from the Contractor's default; or

4.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

4.5 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, tender payment therefore to the Owner; or

4.6 Deny liability in whole or in part and notify the Owner citing reasons therefore.

5. If the Surety does not proceed as provided in Paragraph 4 with reasonable promptness, the Surety shall be deemed to be in default on this Bond fifteen (15) days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner.

CROSSMAN STREET PARK AND SACRED HEART PARK
Central Falls, Rhode Island

If the Surety proceeds as provided in Subparagraph 4.4, and the Owner refuses the payment tendered or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

6. After the Owner has terminated the Contractor's right to complete the Construction Contract, and if the Surety elects to act under Subparagraph 4.1, 4.2, or 4.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. To the limit of the amount of this Bond, but subject to commitment by the Owner of the balance of the Contract Price to mitigation of costs and damages on the Construction Contract, the Surety is obligated without duplication for:

6.1 The responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

6.2 Additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 4;

6.3 Liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

7. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. Not right of action shall accrue on this Bond to any person or entity other than the Owner its heirs, executors, administrators or successors.

8. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

10. Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the signature page.

11. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted here from and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

12. DEFINITIONS

12.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

12.2 Construction Contract: The agreement between the Owner and the Contractor identified on the signature page, including all Contract Documents and changes thereto.

CROSSMAN STREET PARK AND SACRED HEART PARK
Central Falls, Rhode Island

12.3 Contractor Default: Failure of the Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Construction Contract.

12.4 Owner Default: Failure of the Owner, which has neither been remedied nor waived, to pay the Contractor as required by the Construction Contract or to perform and complete or comply with the other terms thereof.

MODIFICATIONS TO THIS BOND ARE AS FOLLOWS:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL
Company: (corporate seal)

SURETY
Company: (corporate seal)

Signature _____
Name and title:

Signature _____
Name and title:

CROSSMAN STREET PARK AND SACRED HEART PARK
Central Falls, Rhode Island

PAYMENT BOND

CONTRACTOR (Name and Address):

SURETY(Name and Address):

OWNER (Name and Address):

CONSTRUCTION CONTRACT:

Date:

Amount:

Description(Name and Location):

BOND

Date(Not earlier than Construction Contract Date):

Amount:

Modifications to this Bond('None' or 'See Last Page'):

CONTRACTOR AS PRINCIPAL

Company: (corporate seal)

SURETY

Company: (corporate seal)

Signature _____

Signature _____

Name and title:

Name and title:

(Any additional signatures appear on last page)

(BELOW IS FOR INFORMATION ONLY – Name, address and telephone)

AGENT OR BROKER:

OWNER'S REPRESENTATIVE:

CROSSMAN STREET PARK AND SACRED HEART PARK
Central Falls, Rhode Island

1. The Contractor and the Surety, jointly and severally bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference.

2. With respect to the Owner, this obligation shall be null and void if the Contractor:

2.1 Promptly makes payment, directly or indirectly, for all sums due Claimants, and

2.2 Defends, indemnifies and holds harmless the Owner from claims, demands, liens or suites by any person or entity whose claim, demand, lien or suit is for the payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, provided the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 12) of any claims, demands, liens or suits and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety, and provided there is no Owner Default.

3. With respect to Claimants, this obligation shall be null and void if the Contractor promptly makes payment, directly or indirectly, for all sums due.

4. The Surety shall have no obligation to Claimants under this Bond until:

4.1 Claimants who are employed by or have a direct contract with the Contractor have given notice to the Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to the Owner, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.

4.2 Claimants who do not have a direct contract with the Contractor:

- Have furnished written notice to the Contractor and sent a copy, or notice thereof, to the Owner, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials were furnished or supplied or for whom the labor was done or performed; and

- Have either received a rejection in whole or in part from the Contractor, or not received within 30 days of furnishing the above notice any communication from the Contractor by which the Contractor has indicated the claim will be paid directly or indirectly; and

- Not having been paid within the above 30 days, have sent a written notice to the Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to the Owner, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to the Contractor.

5. If a notice required by Paragraph 4 is given by the Owner to the Contractor or to the Surety, that is sufficient compliance.

6. When the Claimant has satisfied the conditions of Paragraph 4, the Surety shall promptly and at the Surety's expense take the following actions:

6.1 Send an answer to the Claimant, with a copy to the Owner, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.

6.2 Pay or arrange for payment of any undisputed amounts.

7. The Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

8. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any Construction Performance Bond. By the contractor furnishing and the Owner accepting this bond, they agree that all

CROSSMAN STREET PARK AND SACRED HEART PARK
Central Falls, Rhode Island

funds earned by the contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and the Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

9. The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction contract. The Owner shall not be liable for payment of any costs or expenses of any Claimant under this bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

10. The Surety hereby waives notice of any change, including changes of time, to the construction Contract or to related subcontracts, purchase orders and other obligations.

11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the work or part of the work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by Subparagraph 4.1 or Clause 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the signature page. Actual receipt of notice by Surety, the Owner or the Contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

14. Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made.

15. DEFINITIONS

15.1 Claimant: An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

15.2 Construction Contract: The agreement between the Owner and the Contractor identified on the signature page, including all Contract Documents and changes thereto.

15.3 Owner Default: Failure of the Owner, which has neither been remedied nor waived, to pay the Contractor as required by the Construction Contract or to perform and complete or comply with the other terms thereof.

CROSSMAN STREET PARK AND SACRED HEART PARK
Central Falls, Rhode Island

MODIFICATIONS TO THIS BOND ARE AS FOLLOWS:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL
Company: (corporate seal)

SURETY
Company: (corporate seal)

Signature _____
Name and title:

Signature _____
Name and title:

END OF SECTION

CROSSMAN STREET PARK AND SACRED HEART PARK
Central Falls, Rhode Island

SECTION 00 72 00

GENERAL CONDITIONS

Refer to AIA Document A201 - 2007
General Conditions of the Contract for Construction

The above listed document, as reference, is made part of these Specifications.

END OF SECTION

GENERAL CONDITIONS
00 72 00 1

CROSSMAN STREET PARK AND SACRED HEART PARK
Central Falls, Rhode Island

SECTION 00 73 00

SUPPLEMENTARY CONDITIONS

100.0 CLAIMS FOR EXTRA COST

100.1 If the Contractor claims that any instructions by the Itemized Scope of Work and Supporting Documents or otherwise involve extra cost or extension of time, they shall, within ten (10) days after the receipt of such instructions, and in any event before proceeding to execute the work, submit their protest thereto in writing to the Owner stating clearly and in detail the basis of his objections. No such claim will be considered unless so made.

100.2 Claims for additional compensation for extra work, due to alleged errors in ground elevations, contour lines, site location, or bench marks, will not be recognized unless accompanied by certified survey data, made prior to the time the original ground was disturbed, clearly showing that errors exist which resulted, or would result, in handling more material or performing more work than would be reasonably estimated from the Itemized Scope of Work and Supporting Documents and map issued.

100.3 Any discrepancies which may be discovered between actual conditions and those represented by the Itemized Scope of Work and Supporting Documents and maps shall at once be reported to the Owner and work shall not proceed except at the Contractor's risk, until written instructions have been received by them from the Owner.

100.4 If, on the basis of the available evidence, the Owner determines that an adjustment of the Contract Price and/or Time is justifiable, the procedure shall be as provided in Section 110 hereof.

101.0 TERMINATION, DELAYS, AND LIQUIDATED DAMAGES

101.1 Termination of Contract. If the Contractor 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 in these Contract Documents, the Owner by written notice to the Contractor, may terminate the Contractor's right to proceed with the work. Upon such termination, the Owner may take over the work and prosecute the same to completion of the work and the Contractor shall also be liable to the Owner in its completion of the work and the Contractor shall also be liable to the Owner 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 Owner may take possession of and utilize in completing the work, such materials, tools, equipment, and plant as may be on the site of the work and necessary therefore.

101.2 Liquidated Damages for Delays. If the work be not completed within the time stipulated in Section 402 hereof, including any extensions of time for excusable delays as herein provided, the Contractor shall pay to the Owner as fixed, agreed, and liquidated damages (it being impossible to determine the actual damages occasioned by the delay) for each calendar day of delay, until the work is completed, the amount as set forth in Section 403 hereof and the Contractor and his sureties shall be liable to the Owner for the amount thereof.

101.3 Excusable Delays. The right of the Contractor to proceed shall not be terminated nor shall the Contractor be charged with liquidated damages for any delays in the completion of the work due.

101.3.1 To any acts of the Government, including controls or restrictions upon or requisitioning of materials, equipment, tools, or labor by reason of war, National Defense, or any other national emergency.

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101.3.2 To any acts of the Owner.

101.3.3 To causes not reasonably foreseeable by the parties to this Contract at the time of the execution of the Contract which are beyond the control and without the fault or negligence of the Contractor, including, but not restricted to, acts of God or of the Public enemy, acts of another Contractor in the performance of some other contract with the Owner, fires, floods, epidemics, quarantine, restrictions, strikes, freight embargoes, and weather of unusual severity such as hurricane, tornadoes, cyclones and other extreme weather conditions; and

101.3.4 To any delay of any subcontractor occasioned by any of the causes specified in subparagraphs 1, 2 and 3 of this paragraph 101.3.

Provided, however, that the Contractor promptly notify the Owner within ten (10) days in writing of the cause of the delay. Upon receipt of such notification, the Owner shall ascertain the facts and the cause and extent of delay. If, upon the basis of the facts and the terms of this contract, the delay is properly excusable, the Owner shall extend the time for completing the work for a period of time commensurate with the period of excusable delay.

102.0 SAMPLES, CERTIFICATES AND TESTS

102.1 The Contractor shall submit all material or equipment samples, certificates, affidavits, etc. as called for in the contract documents or required by the Owner promptly after award of the Contract and acceptance of the Contractor's bond. No such material or equipment shall be manufactured or delivered to the site, except at the Contractor's own risk, until the required samples or certificates have been approved in writing by the Owner. Any delay in the work caused by late or improper submission of samples or certificates for approval shall not be considered just cause for an extension of the contract time.

Each sample submitted by the Contractor shall carry a label giving the name of the Contractor, the property for which it is intended, and the name of the producer. The accompanying certificate or letter from the Contractor shall state that the sample complies with contract requirements, shall give the name and brand of the products, its place or origin, the name and address of the producer and all specifications or other detailed information which will assist the Owner in passing upon the acceptability of the sample promptly. It shall also include the statement that all materials or equipment furnished for use in the project will comply with the samples and/or certified statements.

102.2 Approval of any materials shall be general only and shall not constitute a waiver of the Owner's right to demand full compliance with Contract requirements. After actual deliveries, the Owner will have such check tests made as they deem necessary in each instance and may reject materials and equipment and accessories for cause, even though such materials and articles have been given general approval. If materials, equipment or accessories, which fail to meet check tests have been incorporated in the work, the Owner will have the right to cause their removal and replacement by proper materials or to demand and secure such reparation by the Contractor as is equitable.

102.3 Except as otherwise specifically stated in the Contract, the costs of sampling and testing will be divided as follows:

102.3.1 The Contractor shall furnish without extra cost, including packing and delivery charges, all samples required for testing purposes except those samples taken on the project by the Owner;

102.3.2. The Contractor shall assume all costs of re-testing materials which fail to meet contract requirements;

102.3.3 The Contractor shall assure all cost of testing materials offered in substitution of those found deficient; and

CROSSMAN STREET PARK AND SACRED HEART PARK
Central Falls, Rhode Island

102.3.4 The Owner will pay all other expenses.

103.0 PERMITS AND CODES

103.1 The Contractor shall give all notices required by and comply with all applicable laws, ordinances, and codes of the Local Government. All construction work and/or utility installations shall comply with all applicable ordinances, and codes including all written waivers. Before installing any work, the Contractor shall examine the Itemized Scope of Work and Supporting Documents and Technical Specifications for compliance with applicable ordinances and codes and shall immediately report any discrepancy to the Owner. Where the requirements of the Itemized Scope of Work and Supporting Documents and Technical Specifications fail to comply with such applicable ordinances or codes, the

Owner will adjust the Contract by Change Order to conform to such ordinances or codes (unless waivers in writing covering the difference have been granted by the governing body or department) and make appropriate adjustment in the Contract Price or stipulated unit prices.

Should the Contractor fail to observe the foregoing provisions and proceed with the construction and/or install any utility at the variance with any applicable ordinance or code, including any written waivers (notwithstanding the fact that such installation is in compliance with the Itemized Scope of Work and Supporting Documents and Technical Specifications), the Contractor shall remove such work without cost to the Owner, but a Change Order will be issued to cover only the excess cost the Contractor would have been entitled to receive if the Change had been made before the Contractor commenced work on the items involved.

103.2 The Contractor shall at their own expense, secure and pay to the appropriate department of the Local Government the fees or charges for all permits for street pavement, sidewalks, sheds, removal of abandoned water taps, sealing of house connection drains, pavement cuts, buildings, electrical, plumbing, water, gas and sewer permits required by the local regulatory body or any of its agencies.

103.3 The Contractor shall comply with applicable local laws and ordinances governing excavations and the disposal of surplus excavation, materials, debris and rubbish on or off the Project Area and commit no trespass on any public or private property in any operation due to or connected with the Improvements embraced in this Contract.

104.0 CARE OF WORK

104.1 The Contractor shall be responsible for all damages to person or property that occur as a result of their fault or negligence in connection with the prosecution of the work and shall be responsible for the proper care and protection of all materials delivered and work performed until completion and final acceptance, whether or not the same has been covered in whole or in part by payments made by the Owner.

104.2 The Contractor shall provide, where necessary and as requested by the Owner, sufficient competent watchmen, both day and night, including Saturdays, Sundays, and holidays, from the time the work is commenced until final completion and acceptance.

104.3 In an emergency affecting and safety of life, limb or property, including adjoining property, the Contractor without special instructions or authorization from the Owner is authorized to act at their discretion to prevent such threatened loss or injury, and they shall so act. They shall likewise act if instructed to do so by the Owner. Any compensation claimed by the Contractor on account of such emergency work will be determined by the Owner as provided in Section 110 hereof.

104.4 The Contractor shall avoid damage as a result of their operations to existing sidewalks, streets, curbs, pavements, utilities, (except those which are to be replaced or removed), adjoining property, etc., and they shall at their own expense completely repair any damage thereto caused by their operations.

CROSSMAN STREET PARK AND SACRED HEART PARK
Central Falls, Rhode Island

104.5 The Contractor shall shore up, brace, underpin, secure, and protect as may be necessary, all foundations and other parts of existing structures adjacent to, adjoining, and in the vicinity of the site, which may be in any way affected by the excavations or other operations connected with the construction of the Improvements embraced in this Contract. The Contractor shall be responsible for the giving of any and all required notices to any adjoining or adjacent property Owner or other party before the commencement of any work. The Contractor shall indemnify and save harmless the Owner from any damages on account of settlements or the loss of lateral support of adjoining property and from all loss or expense and all damages for which the Owner may become liable in consequence of such injury of damage to adjoining and adjacent structures and their premises.

105.0 ACCIDENT PREVENTION

105.1 The Contractor shall exercise proper precaution at all times for the protection of persons and property and shall be responsible for all damages to persons or property, either on or off the site, which occur as a result of his prosecution of the work. The safety provisions of applicable laws and building and construction codes shall be observed and the Contractor shall take or cause to be taken such additional safety and health measures as the Owner may determine to be reasonably necessary. Machinery, equipment and all hazards shall be guarded in accordance with the safety provisions of the "Manual of Accident prevention in Construction" published by the Associates General Contractors of America, Inc., to the extent that such provisions are not in conflict with applicable local laws.

105.2 The Contractor shall maintain an accurate record of all cases of death, occupational disease, or injury requiring medical attention or causing loss of time from work, arising out of and in the course of employment on work under the Contract. The Contractor shall promptly furnish the Owner with reports concerning these matters.

105.3 The Contractor shall indemnify and save harmless the Owner from any claims for damages resulting from property damage, personal injury and/or death suffered or alleged to have been suffered by any person as a result of any work conducted under this Contract.

106.0 USE OF PREMISES

106.1 The Contractor shall confine their equipment, storage of materials and construction operations to the Contract limits as shown on the Itemized Scope of Work and Supporting Documents and as prescribed by ordinances or permits, or as may be desired by the Owner and shall not unreasonably encumber the site or public rights of way with his materials and construction equipment.

106.2 The Contractor shall comply with all reasonable instructions of the Owner and the ordinances and codes of the Local Government, regarding signs, advertising, traffic, fires, explosives, danger signals, barricades and fire prevention.

107.0 REMOVAL OF DEBRIS, CLEANING, ETC.

The Contractor shall, periodically or as directed during the progress of the work, remove and legally dispose of all surplus excavated material and debris, and keep the Project Area and public rights of way reasonably clear. Upon completion of the work, the Contractor shall remove all temporary construction facilities, debris and unused materials provided for the work, and put the work site of the work and public rights of way in a neat and clean condition. Trash burning on the site of the work will be subject to prior approval of the Owner and existing State and Local regulations.

108.0 INSPECTION

108.1 All materials and workmanship shall be subject to inspection, examination, or test by the Owner and the Engineer at any and all times during manufacture of construction and at any and all places where such manufacture or construction is carried on. The Owner shall have the right to reject defective material and workmanship or require its correction. Unacceptable workmanship shall be satisfactorily

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corrected. Rejected material shall be promptly segregated and removed from the Project Area and replaced with material of specified quality without charge therefore. If the Contractor fails to proceed at once with correction of rejected workmanship or defective material, the Owner may by Contract or otherwise have the defects remedied or rejected materials removed from the Project Area and charge the cost of the same against any monies which may be due the Contractor, without prejudice to any other rights or remedies of the Owner.

108.2 The Contractor shall furnish promptly all materials reasonably necessary for any tests, which may be required. (See Section 102 hereof). All tests by the Owner will be performed in such manner as not to delay the work unnecessarily and will be made in accordance with the provisions of the Technical Specifications.

108.3 The Contractor shall notify the Owner sufficiently in advance of backfilling or concealing any facilities to permit proper inspection. If any facilities are concealed without approval or consent of the Owner, the Contractor shall uncover for inspection and recover such facilities all at their own expense, when so requested by the Owner.

Should it be considered necessary or advisable by the Owner at any time before final acceptance of the entire work to make an examination of work already completed by uncovering the same, the Contractor shall on request promptly furnish all necessary facilities, labor, and material. If such work is found to be defective in any important or essential respect, due to fault of the Contractor or their subcontractors, the Contractor shall defray all the expenses of such examination and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the Contract, the actual cost of labor and material necessarily involved in the examination and replacement, plus 15 percent of such costs to cover superintendence, general expenses and profit, shall be allowed by the Contractor and they shall, in addition, if completion of the work of the entire Contract has been delayed thereby, be granted a suitable extension of time on account of the additional work involved.

108.4 Inspection of materials and appurtenances to be incorporated in the Improvements embraced in this Contract may be made at the place of production, manufacture or shipment, whatever the quantity justifies it, and such inspection and acceptance, unless otherwise stated in the Technical Specifications, shall be final, except as regards (1) latent defects, (2) departures from specific requirements of the Contract, (3) damage or loss in transit, or (4) fraud or such gross mistakes as amount to fraud. Subject to the requirements contained in the preceding sentence, the inspection of materials as a whole or in part will be made at the Project Site.

108.5 Neither inspection, testing, approval nor acceptance of the work in whole or in part, by the Owner or its agents shall relieve the Contractor of their sureties of full responsibility for materials furnished or work performed not in strict accordance with the Contract.

109.0 REVIEW BY THE OWNER

The Owner, its authorized representatives and agents and the Representative for the Secretary (as defined under GENERAL CONDITIONS, PART II) shall, at all times, have access to, and be permitted to observe and review all work, materials, equipment, payrolls, personnel records, employment conditions, material invoices, and other relevant data and records pertaining to this Contract, provided, however, that all instructions and approval with respect to the work will be given to the Contractor only by the Owner through its authorized representatives or agents.

110.0 FINAL INSPECTION

110.1 When the Improvements embraced in this Contract are substantially completed, the Contractor shall notify the Owner in writing that the work will be ready for final inspection on a definite date, which shall be stated in the notice. The notice will be given at least ten (10) days prior to the date stated for final inspection, and bear the signed concurrence of the representative of the Owner having charge of inspection. If the Owner determines that the status of the Improvements is as represented, it will make

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the arrangements necessary to have final inspection commenced on the date stated in the notice, or as soon thereafter as is practicable. The inspection party will include representatives of each department of the Local Government having in charge Improvements of like character when such Improvements are later to be accepted by the Local Government.

111.0 DEDUCTION FOR UNCORRECTED WORK

If the Owner deems it not expedient to require the Contractor to correct work not done in accordance with the Contract Documents, an equitable deduction from the Contract Price will be made by agreement between the Contractor and the Owner and subject to settlement, in case of dispute, as herein provided.

112.0 INSURANCE

See Section 5.0 Insurance for information.

113.0 PATENTS

The Contractor shall hold and save the Owner its officers, and employees, harmless from liability of any nature of kind, including costs and expenses, for, or on account of, any patented or unpatented invention, process, article, or appliance manufactured or used in the performance of the Contract, including its use by the Owner unless otherwise specifically stipulated in the Technical Specifications.

114.0 WARRANTY OF TITLE

No material, supplies, or equipment to be installed or furnished under this Contract shall be purchased subject to any chattel mortgage or under a conditioned sale, lease-purchase or other agreement by which an interest therein or in any part thereof is retained by the seller or supplier. The Contractor shall warrant good title to all materials, supplies, and equipment installed or incorporated in the work and upon completion of all work, shall deliver the same together with all improvements and appurtenances constructed or placed thereon by them to the Owner free from any claims, liens, or charges. Neither the Contractor nor any person, firm or corporation furnishing any material or labor for any work covered by this Contract shall have any right to a lien upon any improvement or appurtenance thereon. Nothing contained in this paragraph, however, shall defeat or impair the right of persons furnishing materials or labor to recover under any bond given by the Contractor for their protection or any rights under any law permitting such persons to look to funds due the Contractor in the hands of the Owner. The provisions of this paragraph shall be inserted in all subcontracts and materials contracts and notice of its provisions shall be given to all persons furnishing materials for the work when no formal Contract is entered into for such materials.

115.0 GENERAL GUARANTY

Neither the final certificate of payment nor any provision in the Contract nor partial or entire use of the Improvements embraced in this Contract by the Owner or the public shall constitute an acceptance of work not done in accordance with the Contract or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty materials or workmanship. The Contractor shall promptly remedy any defects in the work and pay for any damage to other work resulting therefrom, which shall appear within a period of twelve (12) months from the date of final acceptance of the work. The Owner will give notice of defective materials and work with reasonable promptness.

116.0 CONTRACTOR TO MAKE OWN EXAMINATION

Plans, calculations, estimates of quantities, and any statements made in the Instructions to Bidders or otherwise as to the conditions under which the work is to be performed are not guaranteed by the Owner to be correct or to be a complete representation of all existing data on conditions affecting work, and the Contractor agrees that they have made their examination and will make no claim for damages on account of any errors, inaccuracies or omissions that may be found.

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The Contractor shall not take any advantage or have any claim for damages on account of any discrepancy, error or omission in any plans, calculations, estimates of quantities, or any statement made in the Instructions to Bidders or otherwise as to the conditions under which the work is to be performed, and they shall report such discrepancy, error or omission to the Owner in writing as soon as it comes to their knowledge, and before proceeding with work related to such discrepancy, error or omission. Any correction or modification of the plans or specifications may be made by the Owner when necessary, in their opinion, for the proper fulfillment of their purpose or for their proper interpretation.

END OF SECTION

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SECTION 00 74 00

SPECIAL CONDITIONS

402.0 TIME FOR COMPLETION

The work which the Contractor is required to perform under this Contract shall be commenced at the time stipulated by the Owner in the Notice to Proceed to the Contractor.

The rate of progress shall be such that the whole work shall be performed in accordance with the terms of this contract within the number of calendar days after the date of execution of the contract as herein stipulated, unless the expected as any part may be delayed under the provisions of this contract. The work shall be pursued in a continuous, diligent, and uniform manner throughout the project until completion.

It is agreed that the rates of progress herein required has been purposely made low enough to allow for the ordinary delays incident to construction work of this character. No extension of time will be made for ordinary delays, inclement weather and accidents, and the occurrence of such will not relieve the Contractor from the necessity of maintaining this rate of progress.

If delays are caused by acts of God, acts of Government or State, strikes extra work, floods or other contingencies clearly beyond the control or responsibility of the Contractor, the Contractor shall be entitled to so much additional time wherein to perform and complete this contract on his part as the Landscape Architect shall certify in writing to be just.

403.0 LIQUIDATED DAMAGES

In case the Contractor fails satisfactorily to complete the entire work contemplated and provided for under this contract on or before the date of completion determined as described above, the Owner shall deduct from the payments due to the Contractor each month the sum of One Hundred Dollars (\$100.00) for each calendar day (Sundays and legal holidays excluded) of delay, which sum is agreed upon not as a penalty, but as fixed and liquidated damages, said damages shall be deducted from any other moneys due or to become due the Contractor, and in case such damages exceed the amount of all moneys due or to become due, the Contractor then the Contractor or his Surety shall pay the balance to the Owner.

404.0 RESPONSIBILITIES OF CONTRACTOR

404.1 Except as otherwise specifically stated in the Contract Documents, and Technical Specifications, the Contract shall provide and pay for all materials, tools, labor, equipment, water, light, heat, power, transportation, superintendence, temporary construction of every nature, charges, levies, fee or other expenses, and all other services and facilities of every nature whatsoever necessary for the performance of the Contract and to deliver all improvements embraced in this Contract complete in every respect within the specified time.

404.2 All materials, workmanship, methods and practices shall conform to the current Standards of the American Water Works Association, the Rhode Island Standard Specifications for Road and Bridge Construction, latest edition, including all corrections, all issued compilation of approved specifications, and addendum to date and all general requirements and special requirements contained in this project specifications. All work zone traffic control shall be in accordance with the manual on uniform traffic control devices, latest edition.

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404.3 The Contractor shall be responsible for detailed layout, all stakeout and grade control, and shall employ a registered engineer or a registered land surveyor for this purpose as may be necessary. The Owner will provide engineering and inspection.

404.4 The Contractor shall verify dimensions shown on the Itemized Scope of Work and Supporting Documents and if any inconsistencies or discrepancies should be noted on the Itemized Scope of Work and Supporting Documents and the Specifications, he/she shall immediately notify the Owner. The Contractor will be held responsible for any errors resulting from his/her failure to exercise the aforementioned precaution.

404.5 As soon as the Contract is executed, the Contractor shall order any materials necessary and not supplied by the Owner, submit construction schedules as hereinafter specified, and otherwise anticipate the Notice to Proceed. When the Owner gives the Notice to Proceed, the work of construction shall begin at the time stipulated therein and shall be completed within the Time for Completion specified.

404.6 It is the Contractor's responsibility to make his/her own investigation and related assumptions and to satisfy himself as to subsurface conditions and to insure that these are reflected in the prices bid. No change or extra to the price will be accepted due to subsurface conditions or utility locations.

The determination of location and subsequent maintenance and protection of existing subsurface and above ground utilities are the sole responsibility of the Contractor; claims resulting from damage to such by the Contractor will be settled by the Contractor at his/her expense in accordance with the Contract.

404.7 The Contractor shall, at his/her own expense, take out all necessary permits from the county, municipal, or other public authorities; shall give all notices required by law or ordinances; and shall post all bonds and pay all fees and charges incident to the due and lawful prosecution of the work covered by this Contract.

404.8 RESPONSIBILITY FOR MATERIAL FURNISHED BY OWNER: The Contractor's responsibility for material furnished by the Owner shall begin upon Contractor's acceptance at the point of delivery to him. All such material shall be examined, and material defective in manufacture and/or otherwise damaged shall be rejected by the Contractor at the time and place of delivery to him and replaced by the Owner. Material furnished by the Owner which is accepted by the Contractor, but is discovered prior to final acceptance of the work, (1) to be defective in manufacture, shall be replaced by the Owner; (2) to have been damaged before or after acceptance by the Contractor, shall be replaced by the Contractor. Once accepted by the Contractor at the point of delivery to him, all defective and/or damaged material discovered prior to final acceptance of the work shall be removed by the Contractor and he shall install, at his own expense, the material replaced, in its stead, by the Owner or Contractor. In such case, the Contractor shall furnish all labor, equipment, and material incidental to replacement and necessary for the completion of the work to the satisfaction of the Landscape Architect.

404.9 RESPONSIBILITY FOR SAFE STORAGE: The Contractor shall be responsible for the safe storage of all material furnished to or by him and accepted by him until it has been incorporated in the completed project.

405.0 COMMUNICATIONS

405.1 All notices, demands, requests, instructions, approvals, proposals and claims must be in writing.

405.2 Any notice to or demand upon the Contractor shall be sufficiently given if delivered at the office of the Contractor stated on the signature page of the Agreement (or at such other offices as the Contractor may from time to time designate in writing to the Owner), or if deposited in the United States mail in a sealed, postage-prepaid envelope, or delivered with charges prepaid to any telegraph company for translation, in each case addressed to such office.

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405.3 All papers; required to be delivered to the Owner shall, unless otherwise specified in writing to the Contractor, be delivered to the CITY OF CENTRAL FALLS, DEPARTMENT OF PUBLIC WORKS; any notice to or demands upon the Owner shall be sufficiently given if so delivered, or if deposited in the United States mail in a sealed, postage-prepaid envelope, or delivered with charges prepaid to any telegraph company for transmission to said Owner at such address, or to such other representative of the Owner or to such other address, as the Owner may subsequently specify in writing to the Contractor for such purpose.

405.4 Any such notice shall be deemed to have been given as of the time of actual delivery or (in the case of mailing when the same should have been received in due course of post, or in the case of telegram) at the time of actual receipt, as the case may be.

406.0 PARTIAL USE OF SITE IMPROVEMENTS

The Owner, at its elections may give notice to the Contractor and place in use those sections of the improvements which have been completed, inspected, and can be accepted as complying with the Technical Specifications and if in its opinion, each such section is reasonably safe, fit and convenient, for the use and accommodation for which it was intended, provided;

406.1 The use of such sections of the Improvements shall in no way impede the completion of the remainder of the work by the Contractor.

406.2 The Contractor shall not be responsible for any damages or maintenance costs due directly to the use of such sections.

406.3 The use of such sections shall in no way relieve the Contractor or his liability due to having used defective materials or to poor workmanship.

406.4 The period of guarantee shall not begin to run until the date of the final acceptance of all work which the Contractor is required to construct under this Contract.

407.0 CONTRACT DOCUMENTS

The Owner will furnish the Contractor without charge 1 copy of the Contract Documents, including Technical Specifications and Drawings. Additional copies requested by the Contractor will be furnished at a cost.

408.0 NIGHT, SATURDAY AND SUNDAY WORK

No work shall be done at night or on any Sunday or holiday except: (1) usual protective work, such as pumping and the tending of lights and fires, (2) work done in case of emergency threatening injury to persons or property, or (3) if all of the conditions set forth in the next paragraph below are met.

(a) in the opinion of the Owner, the work will be of advantage to the Owner and can be performed satisfactorily at night, (b) the work will be done by a gang organized for regular and continuous night work, and (c) the Owner has given written permission for such night work.

409.0 EMPLOY SUFFICIENT LABOR AND EQUIPMENT

If, in the opinion of the Landscape Architect, the Contractor is not employing sufficient labor or equipment to complete this contract within the time specified the Owner may, after giving written notice, require said Contractor to employ such additional labor and equipment as may be necessary to enable said work to progress properly.

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410.0 INTOXICATING LIQUORS

The Contractor shall not sell and shall neither permit nor suffer the introduction or use of intoxicating liquors upon or about the work embraced in this contract.

411.0 ACCESS TO WORK

The Owner and the Landscape Architect, and their agents and employees may, for purposes already specified and for any other purpose, enter upon the work and the premises used by the Contractor, and the Contractor shall provide safe and proper facilities therefor.

412.0 TIME OF BEGINNING WORK

412.1 Except as herein provided, the Contractor shall commence work at such points as the Landscape Architect may approve, within ten (10) days after the execution of this contract by the Owner.

412.2 Such time of starting may be postponed by written agreement between the Owner and the Contractor because of expected delays in receipt of materials and equipment, or if the season be unsuitable for commencement of the work, or because of other contingency clearly beyond the control or responsibility of the Contractor. Unless stipulated otherwise in said agreement, the Contractor shall commence work at such points as the Landscape Architect may direct or approve, within 10 days after the receipt of a written order from the Owner to start work.

413.0 PROVISIONS FOR TRAFFIC

413.1 The Contractor shall not close or obstruct any portion of a street without obtaining permits for from the proper municipal authorities. If any street or private way shall be rendered unsafe by the Contractor's operations, he shall make such repairs or provide such temporary ways or guards as shall be acceptable to the Owner.

413.2 Streets, roads, private ways, and walks shall be maintained passable by the Contractor at his expense, and the Contractor shall assume full responsibility for the adequacy and safety of provisions made. He shall conduct his construction operations such that interference with the flow of traffic will be held to a minimum.

413.3 The Contractor shall cooperate in every way possible with the municipal authorities maintaining a flow of traffic through the site. The Contractor shall notify the Central Falls and Fire Departments when any street is to be closed regardless of the length of time or time of day.

413.4 All detours shall be signed and lighted as directed by the City of Central Falls.

414.0 COORDINATION WITH OUTSIDE PARTIES

414.1 The Contractor shall conduct his work so as to interfere as little as possible with private business and public travel. He shall at his own expense, wherever necessary or required, maintain fences, furnish watchmen, maintain lights and take such other precautions as may be necessary to protect life and property.

414.2 The Contractor shall take all responsibility for the protection of the work and for preventing injuries to persons and damage to property and utilities on or about the work. He shall not be relieved of his responsibility by any right of the City to give permission or issue orders relating to any part of the work, or by any such permission given or orders issued, or by failure of the Landscape Architect to give such permission or issue such orders. The Contractor shall bear all losses resulting to him or to the Owner on account of the amount of character of the work, or because nature of the land in or on which the work is done is different from what was estimated or expected, or on account of the weather, elements or other causes. The Contractor shall assume the defense of all claims or whatsoever character against the

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Contractor of the Owner, and indemnify, save harmless and insure the Owner, its officers or agents, against all claims arising out of injury or damage to persons, corporation, or property, whether said claims are for unavoidable damage or not, and from all claims relating to labor and materials furnished for the work. The Contractor shall not be required to indemnify the Owner against damage or claims occasioned by acts of the Owner, except otherwise provided in the articles relative to patents and responsibilities.

415.0 DELAY BY OWNER

The Owner may delay the beginning of the work or any part thereof, if the necessary lands or rights-of-way, or materials for such work shall not have been obtained. The Contractor shall have no claim for damages on account of such delay, but shall be entitled to so much additional time wherein to perform and complete this contract on his part as the City shall certify in writing to be just.

416.0 REGISTRATION OF MOTOR VEHICLES

All motor vehicles used in connection with this contract shall be registered in the State of Rhode Island, in accordance with the laws, rules, and regulations thereof, within forty-eight (48) hours of starting work on the contract.

417.0 PROVISIONS REQUIRED BY LAW DEEMED INSERTED

Each and every provision of law and clause required by law to be inserted in this contract shall be deemed to be inserted herein and the contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party, the contract shall forthwith be physically amended to make such insertion.

418.0 SAFETY AND HEALTH REGULATIONS

These construction documents, and the joint and several phases of construction hereby contemplated are to be governed, at all times by applicable provisions of the Federal law(s), including but not limited to, the latest amendments of the following:

- (1) Williams-Steiger Occupational Safety and Health Act of 1970, Public Law 91-596;
- (2) Part 1910 - Occupation Safety and Health Standards, Chapter XVII of Title 29, Code of Federal Regulations;
- (3) Part 1518 - Safety and Health Regulations for Construction, Chapter XIII of Title 29, Code of Federal Regulations.

In the event of any inconsistencies between the above laws and regulations and the provisions of these documents, the laws and regulations shall prevail.

419.0 NOTIFICATION OF EXCAVATION TO UTILITIES

The Contractor shall provide a minimum of two working days notice to "Dig Safe" (1-800-225-4977) and any other appropriate utility before the Contractor begins excavation.

END OF SECTION

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SECTION 00 91 00

ADDENDA AND MODIFICATIONS

PART 1 – GENERAL

- 1.1 As of the time of publication of this Project Manual, no Addenda had been issued.
- 1.2 Should Addenda be issued during the Bid Period, they will augment this Document and become a part of the Project Manual.
- 1.3 Such Addenda and Modifications when issued, with reference to the Project Manual, the General Conditions, Supplemental General Conditions, the Itemized Scope of Work and Supporting Documents or Specifications, shall be inserted following this page and become integral parts of the Contract Documents.

END OF SECTION

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SECTION 01 11 00

SUMMARY OF WORK

PART 1 – GENERAL

1.01 PROJECT

A. See 00 72 00 - General Conditions and 00 73 00 - Supplemental General Conditions for official Project Information.

1.02 CONTRACT DESCRIPTION

A. Contract Type: A single prime contract based on a Stipulated Price as described in 00 52 00 – Agreement Form.

1.03 DESCRIPTION OF WORK

A. Scope of demolition and removal work is described in the Itemized Scope of Work and Supporting Documents and/or as specified herein.

B. Scope of alteration work is described in the Itemized Scope of Work and Supporting Documents and/or as specified herein.

C. Scope of improvement work is described in the Itemized Scope of Work and Supporting Documents and/or as specified herein.

1.04 OWNER OCCUPANCY/SCHEDULE

A. Owner does not intend to continuously occupy the facilities during construction. Work areas will be made available as mutually agreed to during project scheduling.

B. Work to begin within seven (7) days of receipt of Signed Agreement.

C. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.

1.05 CONTRACTOR USE OF SITE AND PREMISES

A. Construction Operations: Limited to areas noted on the Itemized Scope of Work and Supporting Documents. Include all costs of this coordination, including all premium time wages that may be required to meet these requirements, in the Base bid.

B. Arrange use of site and premises to allow:

1. Adjacent projects to progress as planned for the Owner.

2. Use of street and adjacent properties by the Public.

C. Provide access to and from site as required by law and by Owner:

1. Maintain appropriate egress for workforce.

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2. Do not obstruct roadways, sidewalks, or other public ways without permit. Provide necessary signage and barriers to direct pedestrians around work areas.

D. Time Restrictions:

1. Limit conduct of especially noisy work when events are in process. Night and weekend work is allowed.

E. Utility Outages and Shutdown:

1. Do not disrupt or shut down life safety systems, including but not limited to fire sprinklers and fire alarm system, without seven (7) days' notice to Owner and authorities having jurisdiction.
2. Prevent accidental disruption of utility services to other facilities.

PART 2 - PRODUCTS

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PART 3 - EXECUTION

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END OF SECTION

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SECTION 01 33 00

SUBMITTALS

PART 1 GENERAL

1.01 RELATED SECTIONS

- A. Bidding Requirements, Contract Requirements and Division 1—General Requirements all apply to this Section.
- B. Refer to other Divisions of these Specifications, other Sections in this Division, and the Itemized Scope of Work and Supporting Documents for related work which may affect the work of this Section.
- C. The Itemized Scope of Work and Supporting Documents indicate and show limits of construction for this project. These Specifications (refer to Table of Contents) specify materials and work requirements for this project. Both are complementary to each other, and both shall be followed to properly complete the work.

1.02 REQUIREMENTS

- A. Shop Drawings, products data, and samples.

1.03 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

A. General:

- 1. Review and submit, to the Owner, shop drawings, project data and samples required by Specification Sections, and hereunder.

B. Shop Drawings:

- 1. Original drawings shall be prepared by General Contractor, Subcontractor, Supplier or Distributor, which illustrate some portion of the Work, showing fabrication, layout, setting or erection details.
 - a. Shop drawings shall be prepared by a qualified detailer.
 - b. Details shall be identified by reference to sheet and detail numbers indicated on Contract Drawings.
 - c. Maximum sheet size shall be 24" × 36".
 - d. Reproductions for submittals shall be reproducible transparencies with the required number of prints specified herein.

C. Product Data:

- 1. Manufacturer's standard schematic drawings.
- 2. Manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations, and other standard descriptive data.

SUBMITTALS

CROSSMAN STREET PARK AND SACRED HEART PARK
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D. Samples:

1. Office Samples—of sufficient size and quantity to clearly illustrate:
 - a. Functional characteristics of product or material, with integrally related parts and attachment devices.
 - b. Full range of manufacturer's standard or custom color samples.
2. Mock-Ups.
 - a. Erect at Project site at location acceptable to Owner, each complete mock-up, including work of all trades required in finish work.

E. General Contractor's Responsibilities:

1. To coordinate each submittal with requirements of Contract Documents.
2. To be aware that the responsibility for errors and omissions in submittals is not relieved by the Owner's review and approval of submittals.
3. To notify the Owner in writing at time of submission, of deviations in submittals from requirements of Contract Documents or previous submissions.
4. To be aware that work that requires submittals shall not commence unless submittals with Owner's initials or signature indicating review and approval.
5. To distribute copies after Owner's review and approval.

F. Submission Requirements:

1. Make submittals promptly in accordance with approved schedules, and in such sequence as to cause no delay in the work.
2. Submit one reproducible transparency and four opaque prints of shop drawings, and number of copies of Product Data which the General Contractor requires for distribution, plus two copies which shall be retained by the Owner.
3. Submit number of samples specified in each Section of the Specifications.
4. Forward submittals with transmittal letter, in duplicate.
5. Submittals shall include:
 - a. Date and revision dates.
 - b. Project title and number.
 - c. The names of:
 - i. Designer
 - ii. General Contractor
 - iii. Subcontractor
 - iv. Supplier
 - v. Manufacturer
 - vi. Separate detailer when pertinent
 - d. Identification of product or material.
 - e. Relation to adjacent structure or materials.
 - f. Field dimensions, clearly identified as such.
 - g. Specification Section number.
 - h. Applicable standards, such as ASTM number.
 - i. A blank space, five-inch by four-inch, for the approval stamp.

SUBMITTALS

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CROSSMAN STREET PARK AND SACRED HEART PARK
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- j. Identification of deviations from Contract Documents.
- k. General Contractor's stamp, initialed or signed certifying review and approval of submittal

G. Resubmission Requirements

- 1. Shop Drawings:
 - a. Revise drawings as required and resubmit as specified for previous submittal.
 - b. Indicate on drawings any changes which may have been made other than those requested by the Owner.
- 2. Product Data and samples: Submit new data and samples as required from previous submittal.

H. Distribution of Submittals After Review and Approval

- 1. Distribute copies of shop drawings and product data that display the Owner's Approval to appropriate Subcontractors.
- 2. Distribute one approved copy of shop drawings and product data to the Project Manager.
- 3. Distribute Samples as directed by the Owner.

PART 2 PRODUCTS

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PART 3 EXECUTION

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END OF SECTION

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SECTION 01 40 00

QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 RELATED SECTIONS

- A. Bidding Requirements, Contract Requirements and Division 1—General Requirements all apply to this Section.
- B. Refer to other Divisions of these Specifications, other Sections in this Division, and the Itemized Scope of Work and Supporting Documents for related work which may affect the work of this Section.
- C. The Itemized Scope of Work and Supporting Documents indicate and show limits of construction for this project. These Specifications (refer to Table of Contents) specify materials and work requirements for this project. Both are complementary to each other, and both shall be followed to properly complete the work.

1.02 REQUIREMENTS

- A. General Quality Control.
- B. Mock-ups.
- C. Manufacturers' Field Services.
- D. Field Engineering.

1.03 RELATED REQUIREMENTS

- A. CONTRACT AND GENERAL CONDITIONS:
 - 1. Independent Testing Laboratory Services.
- B. Maintain quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality

1.04 RELATED REQUIREMENTS

- A. General: Provide and coordinate mock-up assemblies at Project site for Owner's review and acceptance, in accordance with requirements of the Contract Documents. Refer to individual Specification Sections for mock-up requirements. Generally, without limitation, mock-ups on site include the following:
 - 1. Mock-ups of individual pieces of the work, as specified within individual Specification Section.
- B. It shall be the responsibility of the General Contractor to coordinate the work of the related Specification Sections so that each mock-up meets the specified requirements.
- C. Shop Drawings of Mock-Ups: Provide large scale shop drawings for fabrication, installation and erection of all parts of each mock-up. Provide plans, elevations, and details of anchorages, connections and accessory items.
- D. Photographs of Mock-Ups: Submit photographs of mock-ups after completion of installation and acceptance of each mock-up.

QUALITY REQUIREMENTS

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- E. Samples: Refer to individual Specification Sections for submittal requirements of mock-up components and coordinate accordingly.
- F. Design Modifications: Make design modifications to work only as required to meet performance requirements and to coordinate the work. Indicate proposed design modifications on shop drawings. Maintain original design concept without altering profiles and alignments indicated.

1.05 MANUFACTURERS' FIELD SERVICES

- A. When specified in respective Specification Sections, require each supplier and manufacturer to provide qualified personnel to observe field conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment, and operating instructions, as applicable, and to make appropriate recommendations.
- B. Representative shall submit written report to the Owner listing observations and recommendations.

1.06 FIELD ENGINEERING

- A. The Contractor shall employ a competent Land Surveyor, registered in the State of Rhode Island, who shall:
 - 1. Lay out all lines and grade work not presently established at the site in accordance with the Itemized Scope of Work and Supporting Documents and Specifications. Establish permanent bench marks. Maintain all established bounds and bench marks and replace as directed any which are destroyed or disturbed
 - 2. Establish all lines and grades for the work, and verify all locations, property lines, work lines and other dimensioned points indicated in the Itemized Scope of Work and Supporting Documents for the existing site.
 - 3. Submit, to the Owner, a written confirmation of locations of all lines, and any discrepancies between conditions and locations as they actually exist and those indicated on the Itemized Scope of Work and Supporting Documents.
 - 4. The Contractor shall not commence any excavation or construction work until the Contractor's Engineer's verification has been received and approved by the Owner.

PART 2 PRODUCTS

This Section Left Intentionally Blank.

PART 3 EXECUTION

3.01 GENERAL

- A. Refer to Part 3, Execution portions of the various Specification Sections for specific requirements regarding condition of surfaces, erection, and erection tolerances.

3.03 MOCK UPS

- A. Provide mock-ups of types and sizes required by individual Specification Sections to evaluate and set the standard of quality for that work. Obtain Owner's acceptance of visual qualities prior to commencing work that individual mock-up is intended to represent. Protect

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and maintain approved mock-ups throughout the work of the Contract. Locate mock-ups at the Project site as directed by Owner.

1. Provide as many mock-ups as required until Owner's approval has been received.
2. When indicated in individual Specification Sections, approved mock-ups may be incorporated into the finish work.

3.04 REMOVAL AND DISPOSAL

- A. Demolish and remove mock-ups from the site at the completion of the Project. Legally dispose of demolished mock-up materials.

END OF SECTION

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SECTION 01 70 00

CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 RELATED SECTIONS

- A. Bidding Requirements, Contract Requirements and Division 1—General Requirements all apply to this Section.
- B. Refer to other Divisions of these Specifications, other Sections in this Division, and the Itemized Scope of Work and Supporting Documents for related work which may affect the work of this Section.
- C. The Itemized Scope of Work and Supporting Documents indicate and show limits of construction for this project. These Specifications (refer to Table of Contents) specify materials and work requirements for this project. Both are complementary to each other, and both shall be followed to properly complete the work.

1.02 REQUIREMENTS INCLUDED

- A. Final Cleaning
- B. Project Record
- C. Operation and Maintenance Data
- D. Instructions
- E. Closeout Requirements and Submittals
- F. Warranties and Bonds

1.03 RELATED REQUIREMENTS

- A. Contract and General Conditions:
 - 1. Fiscal provisions, legal submittals, and other administrative requirements.
 - 2. Change Orders.

1.04 FINAL CLEANING

- A. General:
 - 1. Execute prior to final inspection.
 - 2. Unless otherwise specified under the various trade Sections of the Specifications, the General Contractor shall perform final cleaning operations as herein specified.
 - 3. Maintain project site free from accumulation of waste, debris, and rubbish, caused by operations. At completion of work, remove waste materials, rubbish, tools, equipment,

CLOSEOUT REQUIREMENTS

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machinery and surplus materials, and clean all sight-exposed surfaces; leave Project clean and ready for occupancy.

4. Cleaning shall include all surfaces, interior and exterior in which or to which the Contractor has had access.
5. Refer to Sections of the Specifications for cleaning of specific products or work.

B. Materials:

1. Use only those materials which will not create hazards to health or property and which will not damage surfaces.
2. Use only those cleaning materials and methods recommended by manufacturer of surface material to be cleaned.

C. Execution:

1. Employ experienced workmen, or professional cleaners, for final cleaning operations.
2. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials from site-exposed interior and exterior surfaces including surfaces of lighting fixtures.
3. Repair, patch and touch up marred surfaces to specified finish, to match adjacent surfaces.
4. Prior to final completion, or Owner use and occupancy, Contractor shall conduct an inspection of sight-exposed surfaces, and all work areas, to verify that the entire Work is clean.
5. Broom clean exterior paved surfaces and rake clean other surfaces of the grounds.

1.05 PROJECT RECORD

A. The Owner will provide two sets of the Itemized Scope of Work and Supporting Documents to the General Contractor and each listed Trade Section, each of whom shall be required to maintain one set of record documents at the site on which, at all times during construction, the General Contractor and Subcontractors shall promptly, accurately, clearly, and completely record the actual field installation of all project components.

B. All of the following information shall be indicated on the Record Documents:

1. Record all changes, including change order work, in the location of all elements of the Project which deviate from those indicated in all the Itemized Scope of Work and Supporting Documents.
2. The tolerance for the actual location of utilities and appurtenances to be marked on the Record Documents shall be plus or minus two (2) inches.
3. The location of all underground utilities and appurtenances shall be plotted and referenced to permanent surface improvements, at ten (10) ft. intervals and at all changes of direction.

C. The General Contractor shall keep the Record Documents in a clean, dry condition and they shall not be used for construction purposes. The General Contractor shall make the record set available at all times for inspection by the Owner. Deficiencies noted by the Owner shall be promptly corrected by the responsible party.

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- D. At the completion of the Contract, each listed subcontractor shall submit to the General Contractor a complete set of Record Documents of their work showing all field corrections. After checking the above documents, the General Contractor shall certify that they are complete and correct and shall submit the Record Documents to the Owner. The Owner will review the Record Documents and verify that the installations shown thereon are complete and accurate. After making written verification on each of the documents, the Contractor will transcribe the changes shown on the Record Documents, onto original reproducible documents. The Contractor will submit to the Owner the complete set of revised, original documents together with two sets of prints of each in time to be used for the final inspection of the Project.
- E. Availability of Record Documents shall be a prerequisite to scheduling a final inspection of this Contract and said Documents and original Contract Documents will be used in checking completion of the work. Non-availability of record documents or inaccuracies therein may be grounds for cancellation and postponement of any scheduled final inspection by the Owner until such time as the discrepancy has been corrected. The General Contractor shall submit the Record Documents to the Owner before the final inspection in time to allow for Owner actions, and prior to his requisition for final payment.
- F. The Record Documents required to be furnished by the General Contractor under the terms of this Contract shall include all documents included in the Itemized Scope of Work and Supporting Documents.

1.06 OPERATION AND MAINTENANCE DATA

- A. At least 30 days prior to the time of turning over this Project to the Owner for Use and Occupancy or final acceptance, the General Contractor shall secure and deliver to the Owner two complete indexed files containing approved operating and maintenance manuals, shop drawings, and other data as follows:
1. Catalog sheets, maintenance manuals, and approved shop drawings of tactile warning surfaces.
 2. Catalog sheets, maintenance manuals, and approved shop drawings of tree grates.

1.07 INSTRUCTIONS

- A. The General Contractor shall arrange for a reasonable amount of instruction for the Owner's employees, to insure proper operation of the equipment furnished. It is the intent of this paragraph to require the General Contractor and the applicable Subcontractors to furnish as much detailed instruction as is necessary to educate reasonably intelligent personnel in the proper use of the equipment. This instruction shall be provided by the manufacturer's representative for each item of equipment. In some cases, this may require several visits to the Project by those responsible for the instruction.

1.08 CLOSEOUT REQUIREMENTS AND SUBMITTALS

- A. General: Refer to the Contract and General Conditions for requirements and procedures pertaining to final inspection and submittals, and the additional requirements and procedures stated in this paragraph.
- B. Punch List:
1. During the finishing stages of the Project, the Contractor shall make frequent inspections with subcontractors and the Owner so as to progressively check for and correct faulty work. Unsatisfactory work shall be corrected promptly.

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2. When the Contractor determines that he is substantially complete, having less than one percent of his Contract work remaining to be completed, he shall prepare for submission to the Owner a list of items to be completed or corrected. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all work in accordance with the Contract Documents.
3. Upon receipt of the Contractor's list of items to be completed or corrected, the Owner will promptly make a thorough inspection and prepare a "punch list," setting forth in accurate detail any items on the Contractor's list and additional items of work that are not acceptable.
4. When the "punch list" has been prepared, the Owner will arrange a meeting with the Contractor and subcontractors to identify and explain all "punch list" items and answer questions on the Work which must be done before final acceptance.
5. If the Contractor gives notice that a filed subcontractor has completed his "punch list" items, the Owner will inspect that portion of the Work and, if the items are found to be satisfactorily completed, advise the Contractor accordingly.
6. The General Contractor shall correct all punch list items or shall cause the correction of the punch list items within a time frame to be established when the punch list is made. The time frame for the completion of the punch list shall not exceed the completion date of the Contract.

C. Final Inspection:

1. The General Contractor shall submit written certification that:
 - a. Contract Documents have been reviewed.
 - b. Project has been inspected for compliance with Contract Documents.
 - c. Work has been completed in accordance with Contract Documents.
 - d. Equipment and systems have been tested in presence of Owner's Representative and are operational.
 - e. Project is completed, and ready for final inspection.
2. Owner will begin final inspection within seven (7) days after receipt of certification.
3. Should the Owner consider the Work is finally complete in accordance with requirements of Contract Documents, he shall request the General Contractor to make Project Closeout submittals.
4. Should the Owner consider that the Work is not finally complete:
 - a. He shall notify the General Contractor, in writing, stating reasons.
 - b. The General Contractor shall take immediate steps to remedy the stated deficiencies, and send second written notice to the Owner certifying that the Work is complete, upon completion of the work at issue.
 - c. Owner will re-inspect the Work.

D. Closeout Submittals:

1. Project Record Documents.
2. Operating and Maintenance Data and Materials.
3. Extended Guarantees and Warranties.

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- 4.
5. Deliver evidence of compliance with requirements of governing authorities, including without limitations, the following:
 - a. Certificates of Inspection.
 - i. Inspection by local Building Department.
 - ii. Inspection by local Tree Warden
 - b.
6. Deliver Certificate of Insurance for Products and Completed Operations.

E. Instructions: Instruct Owner's personnel in the operation of all systems and other equipment.

1.09 WARRANTIES AND BONDS

A. General

1. Compile specified warranties and bonds, review to verify compliance with Contract Documents, and submit to Owner.
2. Submit material prior to final application for payment. For equipment put into use with Owner's permission during construction, submit within ten (10) days after first operation. For items of work delayed materially beyond Date of Use and Occupancy, provide updated submittal within ten (10) days after acceptance, listing date of acceptance as start of warranty period.

B. Submittal Requirements:

1. Assemble two (2) notarized original signed copies of warranties, bonds and service and maintenance contracts, executed by Officers of each of the respective manufacturers, suppliers, and subcontractors.
2. Table of Contents: Neatly typed, in orderly sequence. Provide complete information for each item.
 - a. Product or work item.
 - b. Firm, with name of principal, address and telephone number.
 - c. Scope.
 - d. Date of beginning of warranty, bond or service and maintenance contract will commence upon date of Substantial Completion as established by the Owner.
 - e. Duration of warranty, bond or service and maintenance contract.
 - f. Provide information for Owner's personnel:
 - i. Proper procedure in case of failure.
 - ii. Instances which might affect validity of warranty or bond.
 - g. General Contractor or subcontractor identification, as applicable, including name of responsible principal, address and telephone number.

C. Form of Submittals: Prepare in duplicate packets, and in the following format:

1. Size 8½" × 11"; punch sheets for 3-ring binder. Fold larger sheets to fit into binders.
2. Cover: Identify each packet with typed or printed title "Warranties and Bonds." List Title of Project and Name of General Contractor or subcontractor.

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- D. Time of Submittals:
1. For equipment or component parts of equipment put into service during progress of construction, submit documents within ten (10) days after inspection and acceptance. Otherwise, make submittals within ten (10) days after Date of Substantial Completion, prior to final request for payment.
 2. For items of work where acceptance is delayed materially beyond the Date of Substantial Completion, provide updated submittal within ten (10) days after acceptance, listing the date of acceptance as the start of the warranty period.
- E. Submittals Required: Submit warranties, bonds, service and maintenance contracts as specified in the respective Sections of the Specifications.

END OF SECTION

Technical Specifications

CROSSMAN STREET PARK AND SACRED HEART PARK
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SECTION 12 93 00
SITE FURNISHINGS

PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include GENERAL CONDITIONS and SUPPLEMENTARY CONDITIONS as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with trades affecting, or affected by, work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

1.02 WORK INCLUDED

- A. Perform all work required to complete the work of the Section, as indicated. Site Furnishings work includes, but is not limited to, the following:
 - 1. Benches (Crossman Park)
 - 2. Picnic Tables (Crossman Park)
 - 3. Benches (Sacred Heart Park)
 - 4. Waste Receptacle (Sacred Heart Park)
 - 5. Dog Waste Station (Sacred Heart Park)

1.03 RELATED WORK UNDER OTHER SECTIONS

- A. Earthwork
- B. Asphalt Paving
- C. Concrete Paving
- D. Chain Link Fences and Gates

1.04 REFERENCES

- A. ASTM - American Society for Testing and Materials:

1.05 QUALITY ASSURANCE

- A. Source: For each type of product required for the work of this Section, provide products of one manufacturer and source for consistency.
- B. Codes and Standards: Perform site furnishings work in compliance with applicable requirements of governing authorities having jurisdiction. Workmanship and finish shall be equal to the best practice of modern shops for each item of work.
- C. Qualifications of Workers: Use adequate numbers of skilled workers who are trained in the necessary crafts and who are completely familiar with the specified requirements and methods needed for proper performance of the work of this Section.
- D. The work of this Section shall be completely coordinated with the work of other Sections. Verify dimensions and work of other trades which adjoin materials of this Section before installing items specified.

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- E. Protect site furnishings from paint spatter, splashed concrete, and other construction damage by wrapping and taping in place plastic sheeting or heavy kraft paper until adjacent work is completed. Repair any damage to finish in a manner consistent with manufacturer's recommendations.

1.06 SUBMITTALS

- A. Shop Drawings: Supply shop drawings at an approved scale for location, installation and erection of each site furnishing item under this Section.
- B. Product Data: Provide manufacturer's product data showing installation and limitations in use of each site furnishing item. Supply Certificates of Compliance for all materials required for fabrication and installation.
- C. Material Selection and Samples: Submit samples showing the complete range of colors, textures and finishes available for all components required for construction. Work includes but is not limited to the following:
 - 1. Provide one sample, 6 in. x 6 in. minimum, of shop-applied finish for each site furnishings item.

PART 2 - PRODUCTS

2.01 GENERAL

- A. General Specifications: The Contractor shall utilize the following descriptions of the various Site Furnishings as a basis of design for quality and durability desired by the Owner. The various Site Furnishings shall include, minimally, all of the functions and accessories noted herein. It is the Contractor's responsibility to provide all necessary plans, details, elevations, and specifications documenting that their equipment is "equal".

2.02 FASTENERS AND HARDWARE

- A. Fasteners and metal components shall be cadmium-plated steel or steel hot-dipped galvanized in accordance with ASTM A 153.

2.03 BENCHES (CROSSMAN PARK)

- A. Benches at Crossman Park shall be 'Global Industrial Premium Metal Mesh Bench with Back', Item # T9F277154, as manufactured by Global Industrial, (www.globalindustrial.com), or equal. Length: 72". Color: To be selected by Landscape Architect from standard color choices. Mounting: Surface Mount. Refer to Drawings for locations.
- B. Bench Quantity: 5

2.04 PICNIC TABLES (CROSSMAN PARK)

- A. Standard Picnic Tables at Crossman Park shall be 'Global Industrial Premium Metal Mesh Rectangular Picnic Table', Item # T9F277152, as manufactured by Global Industrial, (www.globalindustrial.com), or equal. Length: 72". Color: To be selected by Landscape Architect from standard color choices. Mounting: Surface Mount. Refer to Drawings for locations.
- B. Standard Picnic Table Quantity: 2

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C. ADA Compliant Picnic Tables at Crossman Park shall be 'Global Industrial ADA Expanded Metal Picnic Table', Item # T9F695289, as manufactured by Global Industrial, (www.globalindustrial.com), or equal. Length: 96". Color: To be selected by Landscape Architect from standard color choices. Mounting: Surface Mount. Refer to Drawings for location.

D. ADA Compliant Picnic Table Quantity: 1

2.05 BENCHES (SACRED HEART PARK)

A. Benches at Sacred Heart Park shall be the 'Basic Dog Paw Bench', Item #7202, as manufactured by Dog On It Parks, (www.dog-on-it-parks.com), or equal. Length: 72". Color: Green with Black Frame. Mounting: Direct Burial (Inground). Refer to Drawings for locations.

B. Bench Quantity: 2

2.06 WASTE RECEPTACLE (SACRED HEART PARK)

A. Waste Receptacles at Sacred Heart Park shall be the 'Standard Waste Receptacle', Item #7502, as manufactured by Dog On It Parks, (www.dog-on-it-parks.com), or equal. Size: 32 gallon. Color: Green/Black. Mounting: Surface Mount. Refer to Drawings for location.

B. Waste Receptacle Quantity: 1

2.07 DOG WASTE STATION (SACRED HEART PARK)

A. The Dog Waste Station at Sacred Heart Park shall be the 'Complete Dog Waste Station - ONEPul®', Item #7408S, as manufactured by Dog On It Parks, (www.dog-on-it-parks.com), or equal. Station includes dispenser, post, sign, 400 single pull bags, waste receptacle, 50 can liners, and 2 keys. Size: 74" ht. x 14" w. Color: Green. Mounting: Direct Burial (Inground). Refer to Drawings for location.

B. Dog Waste Station Quantity: 1

PART 3 - EXECUTION

3.01 GENERAL

A. All Site Furnishings shall be erected level and plumb at the locations indicated on the Drawings and in accordance with approved shop drawings and as recommended by the manufacturer. Provide concrete footings where indicated.

END OF SECTION

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SECTION 22 11 00
WATER SERVICE TAP AND DRINKING FOUNTAIN

PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include GENERAL CONDITIONS and SUPPLEMENTARY CONDITIONS as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with trades affecting, or affected by, work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.
- D. All work required in this section shall comply with applicable local (Central Falls Plumbing Inspector), state (Rhode Island State Building Code SBC-3, effective 2010), and national plumbing codes (International Plumbing Code 2015). Conflicting code requirements shall be resolved by implementing more restrictive installation.
- E. All work required in this section shall be performed and overseen by personnel with active plumbing license(s) in the State of Rhode Island.

1.02 WORK INCLUDED

- A. Perform all work required to complete the work of the Section, as indicated. Work includes, but is not limited to, the following:
 - 1. Reconnaissance and location of water main within Earle Street (Crossman Park)
 - 2. Reconnaissance and location of water main within High Street (Sacred Heart Park)
 - 3. Excavation and repair of streets to access mains
 - 4. Installation of direct taps and corporation stops in streets
 - 5. Installation of main tubes and caps over corporation stops
 - 6. Installation of stop and waste valves below frost to drain systems
 - 7. Installation of sidewalk curb stop tubes and boxes
 - 8. Installation of meters and backflow preventers in above-grade enclosures
 - 9. Installation of all copper service pipes from street mains to drinking fountains
 - 10. Installation of concrete pads and sleeves for drinking fountains and backflow enclosures
 - 11. Installation of drinking fountains and connection(s) to copper service
 - 12. Guarantee of all work for one (1) year after acceptance by Owner, including first year spring startup and winterization

1.03 RELATED WORK UNDER OTHER SECTIONS

- A. Earthwork
- B. Asphalt Paving
- C. Concrete Paving
- D. Stone Dust Walkways
- E. Chain Link Fences and Gates

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1.04 REFERENCES

- A. ASTM - American Society for Testing and Materials
- B. AWWA – American Water Works Association
- C. NSF – National Sanitary Foundation

1.05 QUALITY ASSURANCE

- A. Codes and Standards: Perform work in compliance with applicable requirements of governing authorities having jurisdiction. Workmanship and finish shall be equal to best practice of modern shops for each item of work.
- B. Qualifications of Workers: Use adequate numbers of skilled workers who are trained in the necessary crafts and who are completely familiar with the specified requirements and methods needed for proper performance of the work of this Section.
- C. Work shall be completely coordinated with other trades. Verify dimensions and work of other trades which adjoin materials of this Section before installing items specified.

1.06 SUBMITTALS

- A. Provide electronic copies of product sheets and catalog cuts for all product specified to Owner's Representative for approval as per Division 01.
- B. Work shall not commence until all products specified are submitted and approved by Owner's Representative. Work shall commence only after written notification from Owner's Representative.
- C. Product submittals shall be concise (no extraneous pages or sections) and clearly marked to show submitted product model, type, size, etc. Submittals with extraneous pages and not marked clearly are subject to rejection by Owner's Representative.
- D. Substitute Product Submittals
 - 1. Provide specified product submittals "or approved equal", in which case, submit substitution product submittal to Owner's Representative for approval.
 - 2. Certain manufacturer names and model numbers are used throughout Specifications, denoting minimum standard.
 - 3. Alternate products are acceptable when products of equal or better quality and performance are submitted and approved in the procedure outlined below.
 - 4. Substitute product submittals constitute representation that:
 - a. Substitute products have been thoroughly investigated and have been determined to be equal or superior in all respects to that specified
 - b. Substitute products shall provide same warranties as specified products
 - c. Substitute products are compatible with interfacing items
 - d. Responsibility has transferred to system installer to coordinate substitute product and to make all subsequent changes required in other elements of work
- E. All product installed shall be new, without defects, and of quality and performance as specified and meeting requirements of system.

1.07 ON-SITE MATERIALS MANAGEMENT

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- A. Store and handle all products and materials in compliance with manufacturer instructions and recommendations.
- B. Protect from all possible damage while on-site from other trades, while staged for installation, and during installation.
- C. Minimize on-site storage where possible. Coordinate with site supervisor for storage options.
- D. All material overages at installation completion shall be removed from site.

PART 2 - PRODUCTS

2.01 GENERAL

- A. General Specifications: Contractor shall use following descriptions of various Water Service Tap and Drinking Fountain materials as a basis of design for quality and durability desired by Owner.
- B. Various equipment shall include, minimally, all functions and accessories noted herein. Provide all necessary plans, details, elevations, and specifications documenting submitted equipment is an "approved equal".

2.02 TAPPING SADDLE

- A. Size: TBD after Reconnaissance and Excavation of Earle Street (Crossman Park) and High Street (Sacred Heart Park)
- B. Construction: Saddle, Brass; Gasket, Buna-N Rubber
- C. Ratings: NSF-61, AWWA Class D Flange Pressure Rating
- D. Features: Made specifically for Tapping Ductile Iron Pipe
- E. Manufacturer: Mueller, Ford, or approved manufacturer

2.03 CORPORATION STOP

- A. Size: 1-inch
- B. Construction: Brass
- C. Ratings: 300 psi Maximum, for use with appropriate Drilling Machine
- D. Features: No Lead Alloy, Key/Plug Style
- E. Manufacturer: Mueller, Ford, or approved manufacturer

2.04 CURB STOP AND WASTE VALVE

- A. Size: 1-inch, Flared Ends with Curb Stop Key
- B. Construction: Brass
- C. Ratings: 175 psi Maximum

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- D. Features: Stop and Waste Feature for Winterization near Backflow Enclosure
 - E. Manufacturer: Mueller, Ford, or approved manufacturer
- 2.05 CURB BOXES AND LIDS
- A. Size: 1-inch Upper Section, 2-inch Lower Section, Length to Match Finish Grade
 - B. Construction: Cast Iron Base and Lid per ASTM A48, Brass Plug per AWWA C800, Steel Upper Section
 - C. Ratings: 300 psi Maximum
 - D. Features: Arch Pattern, Phosphor Bronze Spring Friction Ring, Plug Style Lid
 - E. Manufacturer: Ford, EA2-xx-40 style or approved manufacturer
- 2.06 BACKFLOW PREVENTER
- A. Size: ¾-inch
 - B. Construction: Bronze with Quarter Turn Ball Valve with Strainer
 - C. Ratings: 175 psi Maximum
 - D. Manufacturer: Watts, Model 009M2-QT-S, or approved equal
- 2.07 WATER METER
- A. Size: ¾-inch
 - B. Construction: Bronze
 - C. Features: Magnetic Drive with Automatic Meter Reading Option, Threaded Inlet and Outlet
 - D. Manufacturer: Neptune, Model T-10, or approved equal
- 2.08 BACKFLOW AND METER ENCLOSURE
- A. Size: 30" Long x 16" Wide x 30.5" High (Concrete Pad 42" Long x 28" Wide x 6" Thick, 1" Chamfer on Top Edge)
 - B. Construction: Marine-Grade Aluminum
 - C. Features: Lockable
 - D. Ratings: Insulated
 - E. Manufacturer: VIT Strongbox, Model SBBC-30ALI, or approved equal
- 2.09 COPPER PIPE
- A. Size: 1-inch and ¾-inch
 - B. Construction: Type K Copper

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- C. Standards: ASTM B-88
- D. Fittings: Wrought Copper, Silver Solder Joint (per ASTM B-828), Non-Corrosive Flux
- 2.10 PVC SLEEVES
 - A. Size: 3-inch
 - B. Locations: Underneath all walkways for copper pipe routing
 - C. Dimensions: Width of walkways plus 18 inches on each side
 - D. Cover: Minimum 24 inches below grade
 - E. Construction: SDR35 Class 160 PVC
- 2.11 DRINKING FOUNTAIN
 - A. Size: 42" Tall, 3/8" OD Tubing Inlet, 1/4" Drain Outlet
 - B. Construction: Steel
 - C. Ratings: 20 – 105 psi incoming pressure, Vandal-Resistant, NSF/ANSI 61
 - D. Features: Dual Function Pedestal Fountain and Pet Fountain, Lockable Hose-Bib Option, Push Button Activation, 140 Micron In-Line Strainer Filter
 - E. Manufacturer: Halsey Taylor, model 4400 DB, Endura II Tubular, or approved equal
- 2.12 CRUSHED STONE
 - A. Size: 3/4-Inch Minimum Crushed Stone
- 2.13 SAND BEDDING MATERIAL
 - A. Size: Minimum 80% Passing #4 Sieve, Maximum 5% Passing #200 Sieve
- 2.14 CONCRETE
 - A. Ratings: 3,000 psi Compressive Strength at 28 Days
 - B. Standards: ASTM C-33, ASTM C-94, ASTM C-150

PART 3 – EXECUTION

3.01 GENERAL

- A. Verify dimensions and grades at job site prior to work.
- B. Suspend installation when obstructions or grade discrepancies exist or if conflicts in construction documents and actual conditions exist. Resolve with Owner's Representative immediately.

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- C. Make field measurements as necessary noting relationship of work to other trades. Coordinate with other trades (landscaping and other site work trades).
- D. Project shall be laid out essentially as indicated on Drawings, making minor adjustments for variations or field conditions. Major changes shall be reviewed with Owner's Representative before continuing.
- E. Pipe layout on Drawings are diagrammatic only. Location of equipment contingent upon and subject to integration with all other underground utilities, tree roots, and hardscape design elements. Employ all data contained in Contract Documents and verify this information at construction site.
- F. Competent superintendents and assistants shall be on site at all times. Superintendent shall represent firm as directions given shall be binding.
- G. At all times, protect landscaping, paving, structures, walls, footings, etc. from damage. Damage to work of another trade shall be reported at once. Replace, or repair to satisfaction of Owner, all existing paving disturbed during course of work with same type, strength, texture, and finish as original paving.
- H. Ordinances, Permits, and Permit Fees
 - 1. Comply with all ordinances and regulations of authorities having jurisdiction.
 - 2. Obtain and pay for any and all permits, tests and certifications required.
 - 3. Furnish copies of Permits, Certifications and Approval Notices to Owner's Representative prior to requesting payment.
 - 4. Bid shall include any charges by local water department, utility company, or other imposed and necessary fees.

3.02 ON-SITE INSTALLATION COORDINATION

- A. Coordinate work closely with Owner's Representative to expeditiously install system.
- B. Written (electronic form is acceptable) notifications shall be given to Owner's Representative prior to work commencement, regularly for progress report, proposed changes to proposed system design, and upon system installation completion.
- C. Coordinate with and inform all hired subcontractors of site parameters and design intentions.
- D. Adhere to all security and check-in procedures with on-site project supervisor.
- E. Assume responsibility and compensate Owner for all damage to other work caused by system work, workers, or subcontractors. Repairing of such damage shall be done by personnel as directed by Owner's Representative.
- F. Where applicable, notify all municipal departments and utilities as to time and location of any work affecting those entities. Cooperate and coordinate in protecting or repairing such infrastructure.
- G. Provide and install temporary support, adequate protection, and maintenance of all structures, drains, sewers, and other obstructions encountered. Where grade or alignment is obstructed, obstruction shall be permanently supported, relocated, removed or reconstructed as directed by Owner's Representative.

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- H. All questions of design intent, proposed design changes, field notifications, and product substitution after installation commences shall be in writing to Owner's Representative as a Request for Information (RFI).

3.03 STREET MAIN DIRECT TAP

- A. Coordinate work closely with Owner to locate and identify existing water main location(s) within Earle Street (Crossman Park) and High Street (Sacred Heart Park). Current location is known: exploratory methods shall be required. Call 811, Dig Safe, or other utility service prior to starting work.
- B. Presumption is made that existing water mains are 4" – 10"; thus, requiring corporation stop and saddle. Discovery of main sizes less than or greater than sizes presumed shall be brought to attention of Owner immediately.
- C. Presumption is made that existing water mains are ductile iron. Do not provide direct tap to asbestos or transite pipe; notify Owner at once.
- D. Prior to excavation, coordinate with Owner to provide proper police detail work as required by law.
- E. Use proper tapping saddle and drilling machines to install taps. Ensure proper drill bits and threads used for tap match corporation stop inlets.
- F. At all times as recommended by drilling machine manufacturer, bleed off and equalize pressure for proper installation of corporation stop.
- G. Provide cap and box over corporation stop. Box shall be brought to within 12 inches of finish grade.
- H. Backfill carefully and compact in 12 inch lifts. Provide asphalt and sub-base to meet or exceed existing pavement. Ensure final replacement asphalt matches existing asphalt grades without ruts or depressions.

3.04 UNDERGROUND PIPE INSTALLATION

- A. With trencher, excavate straight and true trench 2 inches below pipe invert.
- B. Trench Base
 - 1. Pipe shall be laid on undisturbed trench bottom provided suitable base is available:
 - a. No rocks larger than 1 inch or with sharp edges
 - b. Otherwise, excavate to 2-inch below pipe invert, install on sand base
- C. Backfilling
 - 1. First 10 inches
 - a. No foreign material or debris
 - b. No rocks larger than 1-inch in diameter
 - c. No frozen material
 - d. Use Clean Sand (see specification above)
 - e. Carefully place material around pipe and wire and tamp in place
 - 2. Remaining Backfill
 - a. Placed in maximum 6-inch lifts
 - b. Tamped to compaction with mechanical equipment
 - c. Compact backfill in trenches to dry density equal to undisturbed soil

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- d. Match adjacent grades without hills or depressions and repair settling (as required by 1-Year Guarantee)
- e. Compaction by truck tires is prohibited
- f. Avoid backfilling of pipe in hot weather

3.05 DRINKING FOUNTAIN INSTALLATION

A. Concrete Pad (4' x 4' x 6" Thick)

- 1. Locate and mark corners of proposed concrete pad
- 2. Locate and mark sleeve openings for vertical risers and drains into drinking fountain on ground
- 3. Install sleeves from pipe invert elevation 18 inches horizontally outside of concrete pad and vertically through pad for using long sweep elbows
- 4. Install minimum 12 inches thick crushed stone base as pad support and drain sump for drinking fountain
- 5. Install and level form for pad to dimensions specified and shown on Drawings.
- 6. Pour and trowel concrete inside form for smooth finish; ensure pad is level and true
- 7. Chamfer all sides 1 inch
- 8. Compact and repair all ground surrounding concrete pad

B. Drinking Fountain

- 1. Install drinking fountain centered on pad openings as directed by manufacturer instructions.
- 2. Anchor fountain to concrete pad as directed by manufacturer instructions
- 3. Plumb system to water service provided
- 4. Flush entire system
- 5. Test fountain for pressure, stream, clarity, and safety

3.06 BACKFLOW PREVENTER ENCLOSURE

- A. Install enclosure on concrete pad as indicated on detail, generally where indicated on drawings. Final location of enclosures shall be coordinated with Owner as to best screen enclosure and deter vandalism. Final location shall also be coordinated with utility department to ensure proper placement of water supply line.
- B. Concrete pad for backflow enclosure shall be 42" long x 28" wide x 6" thick.
- C. Install meter with a minimum of 10 pipe diameters upstream and 5 pipe diameters downstream of straight pipe. Install meter with union fittings for ease of removal in winter.
- D. Install backflow preventer and strainer with 18 inches minimum over concrete pad as highest point in water service system.
- E. Install ball valves and nipples as necessary for winterization blow out port upstream of backflow preventer.
- F. Install pipe supports within enclosure for backflow preventer and meter support.

3.07 POST-CONSTRUCTION ADJUSTMENTS

- A. Include all testing and adjustments in submitted bid price.
- B. Open valves and flush out system under full head of water.

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- C. Flush entire system after complete installation. Clogged valves and pipes shall be remedied after completion.
- D. Test all pipe and valves for leaks at operating pressure. Repair all leaks and retest until leaks are remedied.
- E. Perform test with Owner's Representative present. Readjust outlets and locations to attain proper operation. Replace any equipment that does not meet specified standards.
- F. After testing, clean all equipment of debris during installation.
- G. Throughout guarantee period, continually adjust system due to settlement, operations, and normal use.

3.08 RECORD DRAWINGS

- A. Maintain and update record drawings with red lines markings as project progresses.
- B. Record drawings shall document every change from original design Drawings.
- C. Record drawings shall note exact locations and description of all equipment.
- D. Record drawings shall reference each piece of equipment by two permanent locations (swing ties).
- E. Record drawings shall denote all equipment installed with distinct symbols.
- F. Record drawings shall be on-site at all times. Note following as project progresses:
 - 1. Plumbing Permits (state whether or not required)
 - 2. Materials Approved and approval date
 - 3. Pressure Test results, testing personnel and testing date.
 - 4. Materials Delivered, Accepted, and Installed by whom and date.
- G. Record drawings shall be used as basis of payment for work completed. Provide copies of red-lined set to Owner's Representative along with payment request.
- H. Make all notes legible as work progresses. Any new equipment added shall use distinct symbols denoting location. Record location of new equipment via swing ties (GPS is acceptable).
- I. Prior to final punchlist, provide complete electronic and hard copy files of Record Drawings to Owner's Representative as part of contract completion. All information must be complete and shall be added to submitted documents prior to acceptance.

3.09 OPERATION AND MAINTENANCE OVERVIEW AND MANUAL

- A. Bid price shall include up to one (1) hour of system overview and instruction with Owner and/or Owner's designated manager.
- B. Prior to application for acceptance and final payment, three (3) hard cover binders titled "Operation and Maintenance for Crossman Street Park and Sacred Heart Park Drinking Fountain Systems" shall be provided to Owner's Representative for review.
- C. Operation and Maintenance Manual shall include, but not be limited to:

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1. Title Page and Table of Contents
2. One-Paragraph Written Description of System
3. Manufacturers Data and Cut Sheets of Equipment, including:
 - a. Copies of all approved submittals
 - b. Recommended operating settings
 - c. Recommended maintenance schedule
 - d. Name, address, and telephone number of installer (for repairs, spring startup, and winterization during 1-year guarantee period)
 - e. Name, address, and telephone number of recommended repair and service companies (beyond 1-year guarantee period)
4. Winterization and Spring Startup Instructions (after 1st Year Guarantee)
5. Guarantee Data
6. Pockets with Folded Plans of:
 - a. Original Design Drawings of Each Park
 - b. Final Record Drawings of Each Park

3.10 SITE CLEANUP

- A. Remove all unused materials and equipment from project site safely and efficiently. Dispose of all unused materials legally including construction debris and trash.
- B. Adjust ground, compact, and re-plant around concrete pads as necessary for proper angle and elevation.
- C. Fill all depressions, erosion rills, tire tracks, etc. with proper planting soil mix to ensure proper site drainage.

3.11 FINAL OWNER ACCEPTANCE

- A. Final Owner Acceptance of Drinking Fountain System is predicated on:
 1. Complete system installation, adjustment, testing, and instructional overview
 2. Submission of Operation and Maintenance Manuals to Owner's Representative
 3. Punchlist items are completed and approved by Owner's Representative
- B. Owner and/or Owner's Representative shall provide written notice (hard copy and/or electronic) for Final Acceptance. Date of Final Acceptance notice shall serve as start of 1-Year Guarantee as described above

END OF SECTION

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SECTION 26 05 00

GENERAL ELECTRICAL

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- A. Include GENERAL CONDITIONS and SUPPLEMENTARY CONDITIONS as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with 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 WORK INCLUDED

- A. This Section includes the following:
 - 1. Work that applies to all sections of DIVISION 26
 - 2. Temporary electrical wiring
 - 3. Electrical service
 - 4. Removals (demolition) and relocations

1.3 RELATED DOCUMENTS

- A. The General Conditions, Supplementary Conditions, and applicable portions of Division 01 of the specification are part of Division 26 which shall consist of all labor, equipment, materials and other costs necessary to complete all ELECTRICAL MATERIALS AND METHODS work indicated on the drawings, herein specified or both.

1.4 RELATED WORK SPECIFIED UNDER OTHER SECTIONS: (Read these DIVISIONS carefully. For purposes of bidding, assume that all work of the DIVISION referenced is to be performed under that DIVISION unless specifically indicated therein to be performed under the ELECTRICAL DIVISION.)

- A. Earthwork
- B. All applicable Division 26 Sections
- C. Turf and Grasses

1.5 DEFINITIONS

- A. Provide: Furnish and install.
- B. Wiring: Wire, raceways, boxes and fittings.

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1.6 PERMITS AND FEES

- A. Obtain all permits for the work of this section
- B. Pay all fees, including FINAL INSPECTION FEES.

1.7 SUBMITTALS

- A. Product Data: For each product indicated
- B. Shop Drawings: Wiring and connection diagrams
- C. Limitations of approval: The Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Engineer's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Engineer in writing of such deviation, in a separate cover letter on Contractor's letterhead, at the time of submittal and the Engineer has given written approval to the specific deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Engineer's approval thereof.
- D. Contractor's responsibility: It is the responsibility of the Contractor to check all dimensions and details on shop drawings, before submission to the Engineer, reject same if necessary and only forward to the Engineer shop drawings which he is reasonably certain fulfill the requirements of the contract documents and the work. The approval of shop drawings by the Engineer shall be general only in character and not mean dimensions on drawings have been checked, and will in no way relieve the Contractor of the responsibility for proper fitting and construction of the work, nor from the necessity of furnishing materials or doing the work required by the drawings and/or specifications, which may not be indicated on the shop drawings when approved. All shop drawings shall be checked by the Contractor, and must bear the Contractor's stamp of approval; drawings submitted without this stamp of approval will not be considered.
- E. Samples: Provide all samples requested by the Engineer.
- F. Tests: Test the complete installation to prove it free from shorts, grounds, opens and faulty connections. Make any corrections necessary before acceptance.
 - 1. Test each function of each system including each device.
- G. Certification: Upon request, provide "Certification" (by a recognized testing agency or a Professional Engineer registered in the state where the project is located) that submitted items of equipment are suitable for their intended use.
- H. Record of Addenda and Change Orders: To avoid overlooking addenda and change order modifications, mark all changes on all copies of drawings and specifications, in a manner acceptable to the Engineer. One method of accomplishing this is to make copies and tape them on the back of the preceding page (tape all edges). Also, circle the changed area and note: see addenda #1, etc. If whole pages or sheets change, either remove the superseded document or put a bold "X" through it.
- I. Record Drawings: Owner's record drawings shall be updated as the project progresses. Maintain documents in a safe, dry location. Indicate clearly and accurately any changes necessitated by field conditions and dimension all raceways built into or under concrete slabs or buried under ground.

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- J. Operating Instructions and Manuals: Provide the Owner or his representative with complete operating instructions by qualified personnel of all electrical systems. Provide three (3) bound sets (indexed and bound in three sturdy three-ring binders) of operating and maintenance instructions of all electrical systems employed and all shop drawings.
- K. Manuals: Provide one (1) extra bound set of all shop drawings. Bind in a sturdy 3-ring binder.
- L. Letter of Confirmation: Include in the above manuals a letter confirming that the following items have been completed. Provide written receipt signed by the Owner or his representative indicating that the first 4 items listed below have been received.
 - 1. The number of circuit breaker locks called for have been provided.
 - 2. Keys have been provided for all locked electrical equipment.
 - 3. The provisions of the "Operating Instructions and Manuals" paragraph of these specifications have been met.
 - 4. Spare fuses have been provided.
 - 5. Identification is complete and in accordance with these specifications.
 - 6. As-built electrical drawings have been completed and submitted.
 - 7. All tests are complete and in accordance with these specifications.
 - 8. All required shop drawings have been submitted and approved.
 - 9. The entire installation has been accepted by all authorities.

1.8 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Do all wiring and provide all equipment in accordance with the prevailing issue of the National Electrical Code, State Building Code, State Fire Code, OSHA and any additional local rules or requirements.
- C. Obtain and pay for all necessary permits, certificates, reviews, etc. Present satisfactory proof of final inspection and approval by all inspection authorities.
- D. Consider the most current edition (as of the date of this specification) of the following Industry Standards as minimum requirements for all materials, equipment and systems where such standards are established for materials in question:
 - 1. National Board of Fire Underwriters
 - 2. National Electrical Manufacturers Association
 - 3. National Fire Protection Association
 - 4. Institute of Electrical and Electronic Engineers

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5. Local Electric Utility Company
 6. Local Telephone Company
 7. A nationally recognized testing laboratory (UL, ETL, etc.)
 8. Factory Mutual
 9. Americans with Disabilities Act
 10. American National Standards Institute
 11. TIA/EIA
 12. BICSI TDDM
- E. Where applicable, this installation shall comply with the most recent edition of the following NECA (National Electrical Contractors Association) "National Electrical Installation Standards." Except, if there is a conflict between this specification and these standards, the requirements of this specification shall prevail.
1. NECA 1 Standard Practices for Good Workmanship in Electrical Contracting
 2. NECA 101 Standard for Installing Steel Conduit (Rigid, EMT)
 3. NECA/AA 104 Recommended Practice for Installing Aluminum Building Wire and Cable
 4. NECA 400 Recommended Practice for Installing and Maintaining Switchboards
 5. NECA/IESNA 500 Recommended Practice for Installing Indoor Commercial Lighting Systems
 6. NECA/IESNA 501 Recommended Practice for Installing Exterior Lighting Systems

1.9 COORDINATION

- A. Coordinate slots, inserts, sleeves, and openings for electrical supports, raceways, and cable with general construction work.
- B. Sequence, coordinate, and integrate installing electrical materials and equipment for efficient flow of the Work. Coordinate installing large equipment that requires positioning before closing in the building.
- C. Coordinate electrical service connections to components furnished by utility companies.
- D. Electrical Contractor shall review that portion of submittals from other Divisions which effects the electrical equipment and adjust the sizing of conductors, conduits and over current protection devices according to substitutions made. Monetary settlement for such substitutions shall be between Electrical Contractor and the party making the substitution.

1.10 SCHEDULING AND SHUTDOWNS:

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- A. All work must be scheduled to allow the least interference with the normal operation of the existing facility. Schedule must be arranged to meet the approval of the Owner. All shutdowns of services (power, fire alarm, telephone, etc.) must be approved in writing by the Owner.
 - B. All "shutdowns" must be done at other than normal working hours without additional compensation.
 - C. Pay all power company charges related to "shutdowns", if any.
- 1.11 CHANGE ORDERS/PROPOSAL REQUESTS:
- A. Refer to DIVISION 01 of these specifications and add the following:
 - B. During the course of construction, changes in the work may occur. When a significant change is to be made, a Proposal Request will be issued.
 - C. Provide a complete cost breakdown when responding to each Proposal Request.
 - D. Each item of work to be priced separately.
 - E. Each line item to be broken down including quantities and listing separately labor and material.
 - F. Both credits and extras shall be separately and clearly quantified.
 - G. Allowances for overhead and profit shall be as listed in the supplementary conditions.
 - H. If you become aware of a field condition, code requirement, error, or omission that you feel should result in a change to the work, please contact the Engineer for discussion. The Engineer may be able to clarify the situation and avoid unnecessary paperwork.
- 1.12 INSPECTIONS/SITE OBSERVATIONS
- A. The authority having jurisdiction (usually the Municipal Electrical Inspector) shall be notified at periodic intervals that an inspection is requested. Inspections shall be requested at points of progress, meeting the approval of the inspector and as a minimum include the following:
 - 1. Prior to backfilling trenches.
 - B. Do not cover the work before the Engineer has had a chance to observe it in completed form. The electrical foreman shall request a meeting with the Engineer within 10 days after the start of electrical construction to assure that there is agreement on the scope of work and to answer questions.
 - C. The electrical foreman shall provide assistance to the Engineer during site observations:
 - 1. Describe the progress of the electrical work in detail.
 - 2. Accompany the Engineer on his tour of the site, upon request.
 - 3. Provide use of a suitable ladder, scaffolding or bucket truck to observe the work, upon request.
 - 4. Remove ceiling tiles, panel trims, junction box covers, etc. for observation of the work, upon request.

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5. Provide use of project drawings, specifications and shop drawings.
- 1.13 GUARANTEES/WARRANTIES:
- A. Refer to Division 01 of these specifications and add the following:
 - B. A minimum warrantee time of one year from date of acceptance by the Engineer.
 - C. The Owner reserves the right to make appropriate modifications or extensions of systems and equipment furnished under this contract during the guarantee/warranty period without "voiding" or modifying the guarantee/warranty of equipment and wiring installed under this contract. If manufacturer voids guarantee, it shall not relieve this contractor of his responsibilities for guarantee/warranty period.
- 1.14 MISCELLANEOUS
- A. Provide all systems complete. Drawings and Specifications form complementary requirements; provide work specified and not shown, and work shown and not specified as though explicitly required by both.
 - B. Although work is not specifically shown or specified, provide supplementary or miscellaneous items, appurtenances, devices and materials obviously necessary for a sound, secure and complete installation.
 - C. All wiring and connections to be done with associated circuit de-energized.

PART 2 - PRODUCTS

- 2.1 MATERIALS - General:
- A. All materials and equipment to be new unless specifically stated otherwise.
 - B. Materials and equipment shall be suitable for their intended use and for the environment in which they are installed. For example, equipment located outside shall be weatherproof and constructed of materials that will not rust. This includes brackets, screws, etc.
 - C. Coordinate all dimensions to make sure that boxes, raceways, equipment, fixtures, etc., fit properly in the finished construction. If special provisions, such as shallow boxes, are required, they shall be provided at no increase in contract price, regardless of catalog numbers listed in contract documents or on shop drawings.
 - D. As it is not practical to enumerate in these specifications (or show on the drawings) all details of fittings and accessory equipment required for proper operation of the various electrical systems herein described, it is understood that they will be supplied without extra compensation. Provide all fittings, terminations, relays, components of panels and equipment, etc., needed for the best performance possible at the present state-of-the-art.
- 2.2 EQUIPMENT FOR UTILITY COMPANY'S ELECTRICITY METERING
- A. Comply with requirements of electrical power utility company for current transformer cabinets, meter sockets, and modular meter centers.

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- B. For existing services where utility company current transformers are removed, provide bus extensions as necessary.

PART 3 - EXECUTION

3.1 ELECTRICAL EQUIPMENT INSTALLATION

- A. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components so as to allow for safe personnel movement and maintenance access.
- B. Materials and Components: Install level, plumb, and parallel and perpendicular to other building systems and components, unless otherwise indicated.
- C. Equipment: Install to facilitate service, maintenance, and repair or replacement of components. Connect for ease of disconnecting, with minimum interference with other installations.
- D. Right of Way: Give to raceways and piping systems installed at a required slope.

3.2 LAYOUTS

- A. The electrical system layouts indicated are generally diagrammatic and locations of outlets and equipment are approximate only. Exact routing of wiring and locations of outlets and equipment shall be governed by structural conditions and obstructions. This is not to be construed to permit redesigning systems. Interconnect as shown.
- B. Locate all equipment requiring maintenance and operation so that it will be readily accessible. The right is reserved to make any reasonable change in location of outlets and equipment prior to roughing-in without involving additional expense. This may involve slightly longer wiring runs, longer stems, additional mounting provisions, etc. Allow for this in your bid because additional compensation will not be provided. Items not specifically located on the plans shall (for the purposes of bidding) be assumed to be in the farthest, most difficult location. Exact location to be as directed in the field.

3.3 ELECTRICAL SERVICE:

- A. Provide complete electrical service conforming to all requirements of the local electrical utility company, municipality and state.
- B. Service to be as indicated on the drawings.
- C. Provide connectors for secondary terminations and torque as directed by electric utility company.
- D. Owner to pay all power company charges related to providing service.
- E. Prior to start of construction, coordinate service with the appropriate electric utility company.

3.4 ELECTRICAL SUPPORTING DEVICE APPLICATION

- A. Damp Locations and Outdoors: Hot-dip galvanized materials, slotted channel system components.
- B. Strength of Supports: Adequate to carry present and future loads, times a safety factor of at least four with, 200-lb (90-kg) minimum design load for each support element.

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3.5 SEQUENCE AND BALANCE:

- A. Maintain correct phase sequence of all feeders and circuits by establishing phase identification and maintaining correct relationship throughout the system. Provide line balance within 10% of normal loads.

3.6 CONCRETE BASES

- A. Construct concrete bases of dimensions indicated, but not less than 4 inches (100 mm) larger, in both directions, than supported unit. Follow supported equipment manufacturer's anchorage recommendations and setting templates for anchor-bolt and tie locations, unless otherwise indicated.

3.7 WORK INTERFERING WITH EXISTING WIRING:

- A. Make any necessary re-circuiting, extensions of existing circuits and relocations required to properly re-energize remaining existing devices or equipment that may be interfered with by new construction or removals.

3.8 REMOVALS (DEMOLITION) AND RELOCATIONS:

- A. Coordinate with DIVISION 01 section "Selective Demolition."
- B. Do all removal work in a neat and orderly manner so as not to endanger lives nor cause damage. Removal work to include all associated hangers, couplings, supports, raceway and wiring, etc., and shall be complete in every way.
- C. Remove and dispose of, off-site in a legal manner, all raceways and wire indicated to be removed.
- D. Carefully remove and store on-site, where directed by the Owner, all electrical equipment indicated to be REMOVED. After the Owner has examined this equipment, remove and dispose of, off-site in a legal manner, all of this equipment that the Owner does not want. All remaining equipment shall remain the property of the Owner. Relocate the remaining equipment to a permanent storage location on site where directed by the Owner.
- E. The electrical removal (demolition) drawings show the general extent of removals. However it is impractical to show every item; some of which may be concealed. Therefore, assume that you will be required to perform an additional 10% of removal work, without additional compensation. Items not shown to be removed or to remain shall remain or be removed, as directed.
- F. Prior to removing any electrical equipment, properly de-energize all associated wiring. Remove wires from terminals of supply switches or circuit breakers. Properly tape supply and load end conductors of all wiring remaining and not re-used. Properly tag both ends.
- G. Protect existing electrical equipment and installations indicated to remain. If damaged or disturbed in the course of the Work, remove damaged portions and install new products of equal capacity, quality, and functionality.
- H. Accessible Work: Remove exposed electrical equipment and installations, indicated to be demolished, in their entirety.
- I. Abandoned Work: Cut and remove buried raceway and wiring, indicated to be abandoned in place, 2 inches (50 mm) below the surface of adjacent construction. Cap raceways and patch surface to match existing finish.

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- J. Remove, store, clean, reinstall, reconnect, and make operational components indicated for relocation. Extend existing circuits to the new location for items to be relocated, unless otherwise noted.

3.9 CUTTING AND PATCHING

- A. Refer to Division 01 of these specifications and add the following:
- B. This trade (specification section) is responsible for its respective cutting and patching.
- C. Do not endanger any work by cutting or altering work or any part of it.
- D. Do not cut or alter work of another Contractor without written consent of the Engineer.
- E. Prior to cutting which affects structural safety of project, or work of another Contractor, submit written notice to the Engineer, requesting consent to proceed with cutting.
- F. Perform all work of fitting, adjustment, cutting, patching, finishing and restoration to perfectly match the quality as specified throughout these specifications. Painting shall match and be feathered into adjacent surfaces.

3.10 CLEANING, PAINTING AND REFINISHING:

- A. Refer to Division 01 of these specifications and add the following:
- B. Thoroughly clean all new electrical equipment, devices and enclosures upon completion of all work.
- C. Refinish any new electrical equipment whose finish is damaged or rusted, as determined by the Engineer.

END OF SECTION

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SECTION 26 05 13

CONDUCTORS AND CABLES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- A. Include GENERAL CONDITIONS and SUPPLEMENTARY CONDITIONS as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with 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 WORK INCLUDED

- A. This Section includes the following:
 - 1. Building wires and cables rated 600 V and less.
 - 2. Connectors, splices, and terminations rated 600 V and less.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Field quality-control test reports.

1.4 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 CONDUCTORS AND CABLES

- A. Copper Conductors: Comply with NEMA WC 70.
- B. Conductor Insulation: Comply with NEMA WC 70 for Types THHN-THWN.

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2.2 CONNECTORS AND SPLICES

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. AFC Cable Systems, Inc.
 - 2. Hubbell Power Systems, Inc.
 - 3. O-Z/Gedney; EGS Electrical Group LLC.
 - 4. 3M; Electrical Products Division.
 - 5. Tyco Electronics Corp.
 - 6. Thomas & Betts
- C. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

- A. Feeders: Copper
- B. Branch Circuits: Copper.
- C. At terminations of devices, provide solid conductor in sizes #10 and smaller; stranded wire may be used with fork type crimp connectors or with clamp type termination on the device. Do not wrap stranded wire under screw heads. Do not use back wired devices with spring type connection.

3.2 CONDUCTOR INSULATION APPLICATIONS AND WIRING METHODS

- A. Service Entrance: Type THHN-THWN, single conductors in raceway.
- B. Feeders: Type THHN-THWN, single conductors in raceway.
- C. Branch Circuits: Type THHN-THWN, single conductors in raceway.

3.3 INSTALLATION OF CONDUCTORS AND CABLES

- A. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
- B. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.

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- C. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.
- D. Identify and color-code conductors and cables according to Division 26 Section "Identification for Electrical Systems"
- E. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.
- F. Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.
 - 1. Use oxide inhibitor in each splice and tap conductor for aluminum conductors.

3.4 FIELD QUALITY CONTROL

- A. Perform tests and inspections and prepare test reports.
- B. Tests and Inspections:
 - 1. After installing conductors and cables and before electrical circuitry has been energized, test service entrance and feeder conductors for compliance with requirements.
 - 2. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
- C. Test Reports: Prepare a written report to record the following:
 - 1. Test procedures used.
 - 2. Test results that comply with requirements.
 - 3. Test results that do not comply with requirements and corrective action taken to achieve compliance with requirements.
- D. Remove and replace malfunctioning units and retest as specified above.

END OF SECTION

CROSSMAN STREET PARK AND SACRED HEART PARK
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SECTION 26 05 26

GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- A. Include GENERAL CONDITIONS and SUPPLEMENTARY CONDITIONS as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with 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 WORK INCLUDED

- A. This Section includes methods and materials for grounding systems and equipment.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Field quality-control test reports.

1.4 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with UL 467 for grounding and bonding materials and equipment.

PART 2 - PRODUCTS

2.1 CONDUCTORS

- A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.
- B. Bare Copper Conductors shall conform to ASTM B3 and B8 as applicable.

2.2 CONNECTORS

- A. Listed and labeled by a nationally recognized testing laboratory acceptable to authorities having jurisdiction for applications in which used, and for specific types, sizes, and combinations of conductors and other items connected.
- B. Bolted Connectors for Conductors and Pipes: Copper or copper alloy, bolted pressure-type, listed for use.

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1. Pipe Connectors: Clamp type, sized for pipe.
 - C. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.
- 2.3 GROUNDING ELECTRODES
- A. Ground Rods: Copper-clad; 3/4 inch by 10 feet.

PART 3 - EXECUTION

3.1 APPLICATIONS

- A. Conductors: Install solid conductor for No.10 AWG and smaller, and stranded conductors for No. 8 AWG and larger, unless otherwise indicated.
- B. Conductor Terminations and Connections:
 1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
 2. Underground Connections: Welded connectors, except at test wells and as otherwise indicated.

3.2 EQUIPMENT GROUNDING

- A. Install insulated equipment grounding conductors in all circuits.
- B. Poles Supporting Outdoor Lighting Fixtures: Install grounding electrode and a separate insulated equipment grounding conductor in addition to grounding conductor installed with branch-circuit conductors.

3.3 INSTALLATION

- A. Grounding Conductors: Route along shortest and straightest paths possible, unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.
- B. Ground Rods: Drive rods until tops are 2 inches (50 mm) below finished floor or final grade, unless otherwise indicated.
 1. Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating, if any.
 2. For grounding electrode system, install at least three rods spaced at least one-rod length from each other and located at least the same distance from other grounding electrodes, and connect to the service grounding electrode conductor.
- C. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance, except where routed through short lengths of conduit.
 1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.

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2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install so vibration is not transmitted to rigidly mounted equipment.
3. Use exothermic-welded connectors for outdoor locations, but if a disconnect-type connection is required, use a bolted clamp.

3.4 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections and prepare test reports:
 1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
 2. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal, and at ground test wells.
 - a. Measure ground resistance not less than two full days after last trace of precipitation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.
 - b. Perform tests by fall-of-potential method according to IEEE 81.
- B. Report measured ground resistances that exceed the following values:
 1. Power and Lighting Equipment or System with Capacity 500 kVA and Less: 10 ohms.
 2. Power Distribution Units or Panelboards Serving Electronic Equipment: 3 ohm(s).
- C. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Architect promptly and include recommendations to reduce ground resistance.

END OF SECTION

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SECTION 26 05 33

RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- A. Include GENERAL CONDITIONS and SUPPLEMENTARY CONDITIONS as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with 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 WORK INCLUDED

- A. This Section includes raceways, fittings, boxes, enclosures, and cabinets for electrical wiring.
- B. See Division 33 Section "Underground Ducts and Utility Structures" for exterior ductbanks and manholes, and underground handholes, boxes, and utility construction.

1.3 SUBMITTALS

- A. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.
- B. Shop Drawings: For custom enclosures and cabinets. Include plans, elevations, sections, details, and attachments to other work.

1.4 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 NONMETALLIC CONDUIT AND TUBING

- A. ENT: NEMA TC 13.
- B. RNC: NEMA TC 2, Type EPC-40-PVC unless otherwise indicated.
- C. Fittings for ENT and RNC: NEMA TC 3; match to conduit or tubing type and material.
- D. Fittings for LFNC: UL 514B.

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2.2 BOXES, ENCLOSURES, AND CABINETS

- A. Hinged-Cover Enclosures: NEMA 250, Type 1, with continuous-hinge cover with flush latch, unless otherwise indicated.
 - 1. Nonmetallic Enclosures: Plastic.

PART 3 - EXECUTION

3.1 RACEWAY APPLICATION

- A. Outdoors: Apply raceway products as specified below, unless otherwise indicated:
 - 1. Exposed Conduit: RNC, Type EPC-40-PVC.
 - 2. Concealed Conduit, Aboveground: RNC, Type EPC-40-PVC.
 - 3. Underground Conduit: RNC, Type EPC-40-PVC, direct buried.
 - 4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFNC.
 - 5. Boxes and Enclosures, Aboveground: NEMA 250, Type 3R.
- B. Comply with the following indoor applications, unless otherwise indicated:
 - 1. Exposed Conduit: RNC.
 - 2. Concealed in Ceilings and Interior Walls and Partitions: RNC, Type EPC-40-PVC.
 - 3. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFNC.
 - 4. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 3R.
- C. Minimum Raceway Size: 1-inch (25-mm) trade size.
- D. Raceway Fittings: Compatible with raceways and suitable for use and location.

3.2 INSTALLATION

- A. Comply with NECA 1 for installation requirements applicable to products specified in Part 2 except where requirements on Drawings or in this Article are stricter.
- B. Keep raceways at least 6 inches (150 mm) away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.
- C. Complete raceway installation before starting conductor installation.
- D. Support raceways as specified in Division 26 Section "Electrical Supports and Seismic Restraints."
- E. Arrange stub-ups so curved portions of bends are not visible above the finished slab.

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- F. Install no more than the equivalent of three 90-degree bends in any conduit run.
- G. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors, including conductors smaller than No. 4 AWG.
- H. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb (90-kg) tensile strength. Leave at least 12 inches (300 mm) of slack at each end of pull wire.
- I.

3.3 INSTALLATION OF UNDERGROUND CONDUIT

- A. Direct-Buried Conduit:
 - 1. Excavate trench bottom to provide firm and uniform support for conduit. Prepare trench bottom as specified in Division 32 Section "Earthwork" for pipe less than 6 inches (150 mm) in nominal diameter.
 - 2. Install backfill as specified in Division 32 Section "Earthwork."
 - 3. After installing conduit, backfill and compact. Start at tie-in point, and work toward end of conduit run, leaving conduit at end of run free to move with expansion and contraction as temperature changes during this process. Firmly hand tamp backfill around conduit to provide maximum supporting strength. After placing controlled backfill to within 12 inches (300 mm) of finished grade, make final conduit connection at end of run and complete backfilling with normal compaction as specified in Division 32 Section "Earthwork."
 - 4. Install manufactured duct elbows for stub-ups at poles and equipment and at building entrances through the floor, unless otherwise indicated. Encase elbows for stub-up ducts throughout the length of the elbow.
 - 5. Warning Tape: Bury warning tape approximately 12 inches (300 mm) above direct-buried conduits. Align tape along the width and along the centerline of conduit.

3.4 FIRESTOPPING

- A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly. Firestopping materials and installation requirements are specified in Division 07 Section "Through-Penetration Firestop Systems."

END OF SECTIONS

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SECTION 26 05 53

IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- A. Include GENERAL CONDITIONS and SUPPLEMENTARY CONDITIONS as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with 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 WORK INCLUDED

- A. Section Includes:
 - 1. Identification for raceways.
 - 2. Identification of power and control cables.
 - 3. Identification for conductors.
 - 4. Underground-line warning tape.
 - 5. Equipment identification labels.

1.3 SUBMITTALS

- A. Product Data: For each electrical identification product indicated.

1.4 QUALITY ASSURANCE

- A. Comply with ANSI A13.1.
- B. Comply with NFPA 70.
- C. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.
- D. Comply with ANSI Z535.4 for safety signs and labels.
- E. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

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PART 2 - PRODUCTS

2.1 CONDUCTOR IDENTIFICATION MATERIALS

- A. Color-Coding Conductor Tape: Colored, self-adhesive vinyl tape not less than 3 mils (0.08 mm) thick by 1 to 2 inches (25 to 50 mm) wide.

2.2 UNDERGROUND-LINE WARNING TAPE

A. Tape:

1. Recommended by manufacturer for the method of installation and suitable to identify and locate underground electrical and communications utility lines.
2. Printing on tape shall be permanent and shall not be damaged by burial operations.
3. Tape material and ink shall be chemically inert, and not subject to degrading when exposed to acids, alkalis, and other destructive substances commonly found in soils.
4. Detectable three-layer laminate, consisting of a printed pigmented polyolefin film, a solid aluminum-foil core, and a clear protective film that allows inspection of the continuity of the conductive core, bright-colored, continuous-printed on one side with the inscription of the utility, compounded for direct-burial service.
5. Overall Thickness: 5 mils (0.125 mm).
6. Foil Core Thickness: 0.35 mil (0.00889 mm).
7. Weight: 28 lb/1000 sq. ft. (13.7 kg/100 sq. m).
8. 3-Inch (75-mm) Tensile According to ASTM D 882: 70 lbf (311.3 N), and 4600 psi (31.7 MPa).

B. Color and Printing:

1. Comply with ANSI Z535.1 through ANSI Z535.5.
2. For Power Cables, use yellow colored tape inscribed: BURIED ELECTRIC LINE, HIGH VOLTAGE

2.3 EQUIPMENT IDENTIFICATION LABELS

- A. Adhesive Film Label with Clear Protective Overlay: Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch (10 mm). Overlay shall provide a weatherproof and UV-resistant seal for label.
- B. Self-Adhesive, Engraved, Laminated Acrylic or Melamine Label: Adhesive backed, with white letters on a black background. Minimum letter height shall be 3/8 inch (10 mm).
- C. Stenciled Legend: In non-fading, waterproof, black ink or paint. Minimum letter height shall be 1 inch (25 mm).

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PART 3 - EXECUTION

3.1 INSTALLATION

- A. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.
- B. Apply identification devices to surfaces that require finish after completing finish work.
- C. Self-Adhesive Identification Products: Clean surfaces before application, using materials and methods recommended by manufacturer of identification device.
- D. Attach signs and plastic labels that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.
- E. System Identification Color-Coding Bands for Raceways and Cables: Each color-coding band shall completely encircle cable or conduit. Place adjacent bands of two-color markings in contact, side by side. Locate bands at changes in direction, at penetrations of walls and floors, at 50-foot (15-m) maximum intervals in straight runs, and at 25-foot (7.6-m) maximum intervals in congested areas.
- F. Underground-Line Warning Tape: During backfilling of trenches install continuous underground-line warning tape directly above line at 12 inches (300 mm) below finished grade. Use multiple tapes where width of multiple lines installed in a common trench exceeds 16 inches (400 mm) overall.

3.2 IDENTIFICATION SCHEDULE

- A. Accessible Raceways and Cables within Buildings: Identify the covers of each junction and pull box of the following systems with self-adhesive vinyl labels with the wiring system legend and system voltage. System legends shall be as follows:
 - 1. Power.
- B. Power-Circuit Conductor Identification, 600 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use color-coding conductor tape to identify the phase.
 - 1. Color-Coding for Phase and Voltage Level Identification, 600 V or Less: Use colors listed below for all conductors.
 - a. Color shall be factory applied or field applied for sizes larger than No. 10 AWG.
 - b. Colors for 208/120-V Circuits:
 - 1) Phase A: Black.
 - 2) Phase B: Red.
 - 3) Phase C: Blue.
 - 4) Neutral: White

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- 5) Ground: Green
 - 6) Isolated Ground: Green with trace ID
 - c. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches (150 mm) from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Locate bands to avoid obscuring factory cable markings.
- C. Locations of Underground Lines: Identify with underground-line warning tape for power and control wiring.
- 1. Install underground-line warning tape for both direct-buried cables and cables in raceway.
- D. Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and the Operation and Maintenance Manual. Apply labels to disconnect switches and protection equipment, central or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power, lighting, control, communication, signal, monitoring, and alarm systems unless equipment is provided with its own identification.
- 1. Labeling Instructions:
 - a. Indoor Equipment: Self-adhesive, engraved, laminated acrylic or melamine label. Unless otherwise indicated, provide a single line of text with 1/2-inch- (13-mm-) high letters on 1-1/2-inch- (38-mm-) high label; where two lines of text are required, use labels 2 inches (50 mm) high.
 - b. Outdoor Equipment: Engraved, laminated acrylic or melamine label stenciled legend 2 inches (100 mm) high.
 - c. Unless provided with self-adhesive means of attachment, fasten labels with appropriate mechanical fasteners that do not change the NEMA or NRTL rating of the enclosure.

END OF SECTION

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SECTION 26 24 00

SWITCHBOARDS AND PANELBOARDS

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- A. Include GENERAL CONDITIONS and SUPPLEMENTARY CONDITIONS as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with 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 WORK INCLUDED

- A. Section includes distribution panelboards and lighting and appliance branch-circuit panelboards.

1.3 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Panelboards shall withstand the effects of earthquake motions determined according to SEI/ASCE 7.
 - 1. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified and the unit will be fully operational after the seismic event."

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For each panelboard and related equipment.
 - 1. Include dimensioned plans, elevations, sections, and details. Show tabulations of installed devices, equipment features, and ratings.
 - 2. Detail enclosure types and details.
 - 3. Detail bus configuration, current, and voltage ratings.
 - 4. Short-circuit current rating of panelboards and overcurrent protective devices.
 - 5. Include evidence of NRTL listing for series rating of installed devices.
 - 6. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.
 - 7. Include wiring diagrams for power, signal, and control wiring.

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- 8. Include time-current coordination curves for each type and rating of overcurrent protective device included in panelboards.
- C. Seismic Qualification Certificates: Submit certification that panelboards, overcurrent protective devices, accessories, and components will withstand seismic forces defined in Division 26 Section "Vibration and Seismic Controls for Electrical Systems."
- D. Field quality-control reports.
- E. Panelboard schedules for installation in panelboards.
- F. Operation and maintenance data.

1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with NEMA PB 1.
- C. Comply with NFPA 70.

1.6 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace transient voltage suppression devices that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR PANELBOARDS

- A. Fabricate and test panelboards according to IEEE 344 to withstand seismic forces defined in Division 26 Section "Vibration and Seismic Controls for Electrical Systems."
- B. Enclosures: Surface mounted cabinets.
 - 1. Rated for environmental conditions at installed location.
 - a. Indoor Locations: NEMA 250, Type 3R.
 - 2. Front: Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions.
 - 3. Hinged Front Cover: Entire front trim hinged to box and with standard door within hinged trim cover.
 - 4. Directory Card: Inside panelboard door, mounted in transparent card holder.
- C. Incoming Mains Location: Top.
- D. Phase, Neutral, and Ground Buses: Hard-drawn copper, 98 percent conductivity.

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- E. Conductor Connectors: Suitable for use with conductor material and sizes.
 - 1. Material: Hard-drawn copper, 98 percent conductivity.
 - 2. Main and Neutral Lugs: Mechanical type.
 - 3. Ground Lugs and Bus Configured Terminators: Mechanical type.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Service Equipment Label: NRTL labeled for use as service equipment for panelboards with one or more main service disconnecting and overcurrent protective devices.
- B. Future Devices: Mounting brackets, bus connections, filler plates, and necessary appurtenances required for future installation of devices.
- C. Panelboard Short-Circuit Current Rating: Fully rated to interrupt symmetrical short-circuit current available at terminals.

3.2 LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Eaton Electrical Inc.; Cutler-Hammer
 - 2. General Electric Company
 - 3. Siemens
 - 4. Square D
- B. Panelboards: NEMA PB 1, lighting and appliance branch-circuit type.
- C. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.
- D. Doors: Concealed hinges; secured with flush latch with tumbler lock; keyed alike; door in door hinged trim.

3.3 DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Eaton Electrical Inc.; Cutler-Hammer
 - 2. General Electric Company
 - 3. Siemens
 - 4. Square D

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- B. Molded-Case Circuit Breaker (MCCB): Comply with UL 489, with interrupting capacity to meet available fault currents.
 - 1. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads, and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.

PART 4 - EXECUTION

4.1 INSTALLATION

- A. Receive, inspect, handle, store and install panelboards and accessories according to NECA 407.
- B. Comply with mounting and anchoring requirements specified in Division 26 Section "Vibration and Seismic Controls for Electrical Systems."
- C. Mount panelboard cabinet plumb and rigid without distortion of box.
- D. Install overcurrent protective devices and controllers not already factory installed.
 - 1. Set field-adjustable, circuit-breaker trip ranges.
- E. Install filler plates in unused spaces.
- F. Stub four 1-inch empty conduits from panelboard into accessible ceiling space or space designated to be ceiling space in the future. Stub four 1-inch empty conduits into raised floor space or below slab not on grade.
- G. Arrange conductors in gutters into groups and bundle with tie wraps.
- H. Comply with NECA 1.

4.2 IDENTIFICATION

- A. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs complying with Division 26 Section "Identification for Electrical Systems"
- B. Create a directory to indicate installed circuit loads and incorporating Owner's final room designations. Obtain approval before installing. Use a computer or typewriter to create directory; handwritten directories are not acceptable.
- C. Panelboard Nameplates: Label each panelboard with a nameplate complying with requirements for identification specified in Division 26 Section "Identification for Electrical Systems"
- D. Device Nameplates: Label each branch circuit device in distribution panelboards with a nameplate complying with requirements for identification specified in Division 26 Section "Identification for Electrical Systems"

4.3 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
- B. Acceptance Testing Preparation:

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1. Test each panelboard bus, component, connecting supply, feeder, and control circuit for shorts and grounds.
- C. Tests and Inspections:
1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
 2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
- D. Panelboards will be considered defective if they do not pass tests and inspections.
- E. Report any unsatisfactory results to engineer.

END OF SECTION

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SECTION 26 27 26

WIRING DEVICES

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- A. Include GENERAL CONDITIONS and SUPPLEMENTARY CONDITIONS as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with 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 WORK INCLUDED

- A. This Section includes the following:
 - 1. Receptacles, receptacles with integral GFCI, and associated device plates.
 - 2. Snap switches.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: List of legends and description of materials and process used for premarking wall plates.
- C. Operation and Maintenance Data: For wiring devices to include in all manufacturers' packing label warnings and instruction manuals that include labeling conditions.

1.4 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Device Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Cooper Wiring Devices; a division of Cooper Industries, Inc.
 - 2. Hubbell Incorporated; Wiring Device-Kellems.

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3. Leviton Mfg. Company Inc.
 4. Pass & Seymour/Legrand; Wiring Devices & Accessories
- B. Switch Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Cooper Wiring Devices; a division of Cooper Industries, Inc.
 2. Hubbell Incorporated; Wiring Device-Kellems
 3. Leviton Mfg. Company Inc.
 4. Pass & Seymour/Legrand; Wiring Devices & Accessories

2.2 SPECIAL APPLICATION

- A. Weather Resistant – All outdoor receptacles shall be listed weather resistant types.

2.3 GFCI RECEPTACLES

- A. General Description: Straight blade type. Comply with NEMA WD 1, NEMA WD 6, UL 498, and UL 943, Class A, 125 V, 20 A and include indicator light that is lighted when device is tripped. Heavy Duty Commercial Specification grade.

2.4 SNAP SWITCHES

- A. Heavy Duty Commercial Specification grade.
- B. Comply with NEMA WD 1 and UL 20.
- C. Switches, 120/277 V, 20 A:

2.5 WALL PLATES

- A. Wet-Location, Weatherproof Cover Plates: NEMA 250, complying with type 3R weather-resistant thermoplastic with lockable cover.

2.6 FINISHES

- A. Color: Wiring device catalog numbers in Section Text do not designate device color.
1. Wiring Devices Connected to Normal Power System: White, unless otherwise indicated or required by NFPA 70 or device listing.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with NECA 1, including the mounting heights listed in that standard, unless otherwise noted.
- B. Coordination with Other Trades:

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1. Take steps to insure that devices and their boxes are protected. Do not place wall finish materials over device boxes and do not cut holes for boxes with routers that are guided by riding against outside of the boxes.

C. Conductors:

1. Do not strip insulation from conductors until just before they are spliced or terminated on devices.
2. Strip insulation evenly around the conductor using tools designed for the purpose. Avoid scoring or nicking of solid wire or cutting strands from stranded wire.
3. The length of free conductors at outlets for devices shall meet provisions of NFPA 70, Article 300, without pigtails.
4. Existing Conductors:
 - a. Cut back and pigtail, or replace all damaged conductors.
 - b. Straighten conductors that remain and remove corrosion and foreign matter.
 - c. Pigtailing existing conductors is permitted provided the outlet box is large enough.

D. Device Installation:

1. Replace all devices that have been in temporary use during construction or that show signs that they were installed before building finishing operations were complete.
2. Keep each wiring device in its package or otherwise protected until it is time to connect conductors.
3. Do not remove surface protection, such as plastic film and smudge covers, until the last possible moment.
4. Connect devices to branch circuits using pigtails that are not less than 6 inches (152 mm) in length.
5. When there is a choice, use side wiring with binding-head screw terminals. Wrap solid conductor tightly clockwise, 2/3 to 3/4 of the way around terminal screw.
6. Use a torque screwdriver when a torque is recommended or required by the manufacturer.
7. When conductors larger than No. 12 AWG are installed on 15- or 20-A circuits, splice No. 12 AWG pigtails for device connections.
8. Tighten unused terminal screws on the device.
9. Device must be securely fastened against box / wall. Cover plate to tightly mate with wall without gap.

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3.2 IDENTIFICATION

- A. Comply with Division 26 Section "Identification for Electrical Systems"
1. Receptacles: Identify panelboard and circuit number from which served. Use hot, stamped or engraved machine printing with [black] [white] [red]-filled lettering on face of plate, and durable wire markers or tags inside outlet boxes.

3.3 FIELD QUALITY CONTROL

- A. Perform tests and inspections and prepare test reports.
1. Test Instruments: Use instruments that comply with UL 1436.
 2. Test Instrument for Convenience Receptacles: Digital wiring analyzer with digital readout or illuminated LED indicators of measurement.
- B. Tests for Convenience Receptacles:
1. Line Voltage: Acceptable range is 105 to 132 V.
 2. Percent Voltage Drop under full Load: A value of higher than 5 percent is not acceptable.
 3. Ground Impedance: Values of up to 2 ohms are acceptable.
 4. GFCI Trip: Test for tripping values specified in UL 1436 and UL 943.
 5. Using the test plug, verify that the device and its outlet box are securely mounted.
 6. The tests shall be diagnostic, indicating damaged conductors, high resistance at the circuit breaker, poor connections, inadequate fault current path, defective devices, or similar problems. Correct circuit conditions, remove malfunctioning units and replace with new, and retest as specified above.
 7. Report any testing deficiencies to engineer.

END OF SECTION

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SECTION 26 56 00
EXTERIOR LIGHTING

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

- A. Include GENERAL CONDITIONS and SUPPLEMENTARY CONDITIONS as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with 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 WORK INCLUDED

- A. This Section includes the following:
 - 1. Exterior luminaires and accessories
 - 2. Poles
 - 3. Pole foundations
 - 4. Grounding
 - 5. Conduit and wiring
 - 6. Lighting controls

1.3 QUALITY ASSURANCE

- A. Comply with the following codes and standards:
 - 1. *National Electrical Code (NEC)* for components and installation.
 - 2. International Building Code
 - 3. ASCE-7, Minimum Design Loads for Buildings and Other Structures
 - 4. The national Energy Policy Act and Energy Star requirements for lighting products.
- B. Provide luminaires listed and labeled by a nationally recognized testing laboratory (NRTL) for the application, installation condition, and the environments in which installed.

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- C. Use manufacturers that are experienced in manufacturing poles, luminaires, lamps and ballasts similar to those indicated for this Project and have a record of successful in-service performance.

1.4 SERVICE CONDITIONS

- A. Elevation: 7500 feet above sea level.
- B. International Building Code and ASCE 7 design wind conditions:
 - 1. Basic Wind Speed: 130 mph (3-second gust at 30 ft above ground, mean recurrence interval of 50 years)
 - 2. Importance Factor: 1.00.
- C. Ambient temperatures, deg C (deg F):
 - 1. Annual averages: 2.1 (35.8) minimum, 15.6 (60.0) maximum, 8.8 (47.9) average
 - 2. Annual nighttime average: 5.4 (41.7)
 - 3. Annual extremes: -15.0 (5.0) minimum, 31.7 (89.0) maximum
 - 4. Annual warmest day 24-hour average: 20.7 (69.3)
 - 5. Annual warmest day nighttime average: 16.4 (61.6).
- D. Maximum solar heat gain: 110 W/sq ft.
- E. Lightning flash density: 8 flashes to ground per square km per year.

1.5 DEFINITIONS

- A. Unless otherwise specified or indicated, terms used in this Section are as defined in the National Electrical Code or the IESNA Lighting Handbook.

1.6 SUBMITTALS

- A. Submit the following in accordance with Project submittal procedures.
 - 1. Catalog Data: Submit catalog data describing poles, luminaires, lamps, ballasts, and pole and luminaire finishes. Include data substantiating that materials comply with specified requirements. Arrange data for luminaires in the order of luminaire designation.
 - 2. Performance Curves/Data: Submit certified photometric data for each type of luminaire.
 - 3. Shop Drawings: Submit manufacturer's drawings for non-standard luminaires.
 - 4. Maintenance Data: Submit maintenance instructions for inclusion in the operations and maintenance manuals.

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1.7 EXTRA MATERIALS

- A. Furnish the following extra materials matching products installed. Package with protective covering for storage and identify with labels describing contents.
1. LED Luminaires: 10 percent of quantity of LED luminaires of each type, but no fewer than two of each type.
 2. Driver: 10 percent of quantity of ballasts of each type, but not less than one of each type.
 3. Lenses, Diffusers, Covers, Globes, and Guards: 10 percent of quantity of each type, but not less than one of each type.
 4. Fuses: 10 percent of quantity of fuse of each type, but not less than two of each type.

1.8 RECEIVING, STORING AND PROTECTING

- A. Receive, inspect, handle, and store products according to the manufacturer's written instructions and NECA/IESNA 501, *Recommended Practice for Installing Exterior Lighting Systems*.

PART 2 PRODUCTS

2.1 PRODUCT OPTIONS AND SUBSTITUTIONS

- A. Alternate products may be accepted; follow Section 01 2500 *Substitution Procedures*.

2.2 FINISHES

- A. Furnish luminaires, poles, and accessories with finishes as scheduled that are resistant to fading, chalking, and other changes due to aging and exposure to heat and ultraviolet light. Acceptable finishes for metals are:
1. Hot-dipped galvanized steel: ASTM A 123/A 123M.
 2. Brushed natural aluminum
 3. Anodized aluminum: AAMA 611, *Anodized Architectural Aluminum, Class I*.
 4. Powder coated aluminum: Fluorocarbon polymer powder coating per AAMA 2605, *Superior Performing Organic Coatings* over chrome phosphate conversion coated aluminum.
- B. Reject luminaires, poles, and accessories with finish having runs, streaks, stains, holidays and defects.
- C. Replace luminaires, poles, and accessories showing evidence of yellowing, fading, chalking, and other changes indicating failure during warranty period.
- D. Use stainless steel for exposed hardware.

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2.3 EXTERIOR LUMINAIRES - GENERAL

- A. Furnish exterior luminaires that comply with requirements specified in this Section and in the luminaire schedule on the Drawings.
- B. Luminaires shall be NRTL-listed as conforming to UL 1598 - *Luminaires*.
- C. Luminaire photometric characteristics shall be based on IESNA approved methods for photometric measurements performed by a recognized photometric laboratory.
- D. Luminaire housing shall be primarily metal.
 - 1. Metal parts shall be free from burrs and sharp corners and edges.
 - 2. Sheet metal components shall be fabricated from corrosion-resistant aluminum, formed and supported to prevent sagging and warping.
 - 3. Exposed fasteners shall be stainless steel.
- E. Doors and frames shall be smooth operating and free from light leakage under operating conditions.
 - 1. Relamping shall be possible without the use of special tools.
 - 2. Doors, frames, lenses and diffusers shall be designed to prevent accidental falling during relamping and when secured in the operating position.
 - 3. Door shall be removable for cleaning or replacing lens.
- F. Luminaires shall have minimum reflecting surface reflectance as follows unless scheduled otherwise:
 - 1. White surfaces: 85 percent
 - 2. Specular surfaces: 83 percent
 - 3. Diffusing specular surfaces: 75 percent
- G. Provide lenses, diffusers, covers and globes as scheduled on the Drawings fabricated from materials that are UV stabilized to be resistant to yellowing and other changes due to aging or exposure to heat and ultraviolet radiation.
- H. Doors shall have resilient gaskets that are heat-resistant and aging-resistant to seal and cushion lens and refractor.

2.4 LED LUMINAIRES

- A. LED luminaires shall conform to UL 1598 and to UL 8250 – *Safety Standard for Light-Emitting Diode (LED) Light Sources for Use in Lighting Products*.
- B. Products shall be lead and mercury free.
- C. Photometric characteristics shall be established using IESNA LM-79-08, *IESNA Approved Method for the Electrical and Photometric Measurement of Solid-State Lighting Products*.

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- D. Ingress protection for optical assembly shall be IP65 or better in accordance with ANSI/IEC 60529 - *Degrees of Protection Provided by Enclosures*.
- E. Color characteristics of LED luminaires shall be as follows in accordance with ANSI C78.377 – *Specifications for the Chromaticity of Solid State Lighting Products*:
 - 1. Color temperature (deg K): 3500
 - 2. Color rendering index: not less than 70
- F. LED and driver cooling system shall be passive and shall resist the buildup of debris.
- G. LED luminaire output after 50,000 hours of operation shall be not less than 70 percent of the initial lumen output when determined in accordance with IESNA LM-80-08 – *IESNA approved Method for Measuring Lumen Maintenance of LED Lighting Sources*.
- H. LED luminaire electrical characteristics:
 - 1. Supply voltage: 120 V, 208 V, 240 V, 277 V, or 480 V as indicated on the Drawings. Provide step-down transformers if required to match driver input voltage rating.
 - 2. Total harmonic distortion (current): Not more than 10 percent
 - 3. Power factor: Not less than 90%
 - 4. RF interference: Meet FCC 47 CFR Part 15/18
 - 5. Transient protection: IEEE C62.41 Class A.
- I. Warranty:
 - 1. Manufacturer shall replace any luminaires that fail to operate properly within 60 months of the date of LANL acceptance of the installation. Lens yellowing or hazing will be considered a failure.
 - 2. Manufacturer shall replace any luminaires that experience housing or finish failure within 5 years of the date of LANL acceptance of the installation.
- J. Manufacturers: Subject to compliance with requirements, provide products as scheduled or specified on the Drawings.

2.5 POLES AND ACCESSORIES

- A. Furnish poles and accessories that comply with requirements specified in this Section and the luminaire schedule on the Drawings.
- B. Pole, base, and anchorage shall carry the luminaires, supports, and appurtenances at the indicated height above grade without deflection or whipping.
- C. Mountings, fastenings and other appurtenances shall be fabricated from corrosion-resistant materials that are compatible with poles and luminaires and

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will not cause galvanic action at contact points. Mountings shall correctly position luminaires to provide scheduled light distribution.

- D. A reinforced access handhole shall be located in the wall of each metal pole.
- E. A welded 1/2 inch grounding lug shall be accessible through the handhole of each metal pole. Grounding connection shall be designed to prevent electrolysis when used with copper ground wire.
- F. Metal poles shall have anchor type bases and galvanized steel anchor bolts and leveling nuts.
- G. Metal poles shall have a metal base cover that covers the entire base plate and anchorage.
- H. Protect painted, anodized, or brushed pole finishes during shipment and installation. Minimum protection shall consist of spirally wrapping each pole shaft with protective paper secured with tape, and shipping small parts in boxes.
- I. Aluminum poles shall be fabricated from corrosion resistant aluminum Alloy 6063-T6 or Alloy 6005-T5 for wrought alloys or Alloy 356-T4 for cast alloys.
 - 1. Poles shall be square or round, tapered or straight as indicated on the Drawings.
 - 2. Aluminum poles over 30 feet tall shall include factory-installed vibration dampers.
 - 3. Poles shall be seamless extruded or spun seamless type with minimum 0.188 inch wall thickness.
 - 4. Tops of shafts shall be fitted with a round or tapered cover.
 - 5. Base shall be anchor bolt mounted, made of cast 356-T6 aluminum alloy in accordance with ASTM B 108/B 108M, *Standard Specification for Aluminum-Alloy Permanent Mold Castings* and shall be machined to receive the lower end of shaft. Joint between shaft and base shall be welded.
 - 6. Hardware, except anchor bolts, shall be either 2024-T4 anodized aluminum alloy or stainless steel.
- J. Anchor bolts shall be steel rod having minimum yield strength of 50,000 psi. The top 12 inches of the anchor bolt shall be galvanized in accordance with ASTM A153/A153M.
- K. Manufacturers: Subject to compliance with requirements, provide products as scheduled or specified on the Drawings.

2.6 LIGHTING CONTROL EQUIPMENT

- A. Furnish photoelectric relays to control exterior lighting as indicated on the Drawings.
- B. Furnish one or more time switches to control exterior lighting as indicated on the Drawings.

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PART 3 EXECUTION

3.1 EXISTING WORK

- A. Disconnect and remove abandoned exterior luminaires as indicated on the Drawings.
- B. Disconnect and remove abandoned luminaire poles and associated foundations as indicated on the Drawings
- C. Maintain electrical circuit to existing exterior luminaires that are to remain active.
- D. Clean and repair existing exterior luminaires that are to remain or be reinstalled.

3.2 EXAMINATION

- A. Examine areas, spaces, and surfaces to receive exterior luminaire (s) or poles for compliance with installation tolerances and other conditions affecting performance of the product. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.3 INSTALLATION

- A. Install products in accordance with manufacturer's instructions, NECA/IESNA 501, and approved shop drawings.
- B. Locations of luminaires and poles shown on the Drawings are diagrammatic. Coordinate luminaire locations with building finishes, building structure, paving and striping, utility piping, security fences, and existing trees. Obtain approval for location changes through LANL Subcontract Technical Representative (STR).
- C. Set poles and luminaires plumb, square, level and secure.
- D. Install surface mounted luminaires directly to an outlet box which is supported from structure.
- E. Install in-grade luminaires flush with surrounding surface. Coordinate pitch or grading of surface with General Contractor to allow drainage away from fixture.
- F. Install lamps in luminaires in accordance with manufacturer's instructions.

3.4 CONCRETE FOUNDATIONS

- A. Construct concrete foundations with exterior 4000 psi concrete and reinforcing conforming to Section 03 3001, *Reinforced Concrete*.
- B. Comply with details on the Drawings and manufacturer's recommendations for foundation dimensions, reinforcing, anchor bolts, nuts and washers.
- C. Position power conduits and ground rod to terminate within the pole shaft area and one inch above the top of the foundation.
- D. Cure concrete foundations for 7 full curing days before erecting poles.

3.5 POLE ERECTION

- A. Do not install poles without luminaires.
- B. Use fabric web slings to raise and set poles.
- C. Use leveling nuts or shims to make poles plumb. When leveling nuts are used, set the lower nuts not more than 1 inch from the concrete foundation.

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- D. Tighten anchor bolt nuts and other pole hardware to torque recommended by manufacturer.
- E. After pole is leveled, pack non-shrink grout between anchor base and concrete foundation to provide a full bearing surface. Use a short piece of 1/2-inch diameter pipe to make a drain hole through grout; arrange to drain condensation from interior of pole.
- F. Set embedded poles to depth indicated on the Drawings, but not less than 1/6 of pole length below finish grade.
 - 1. Auger holes large enough to permit the use of tampers the full depth of the hole.
 - 2. Backfill in 6 inch layers and thoroughly tamp each layer so compaction of backfill is equal to or greater than that of the undisturbed earth.

3.6 GROUNDING

- A. Install grounding for exterior lighting using materials and methods specified in Section 26 0526, *Grounding and Bonding for Electrical Systems*.
- B. Connect ground lug of metal pole to circuit equipment grounding conductor.

3.7 LIGHTING CONTROL SYSTEM

- A. Install exterior lighting control system components in accordance with the manufacturers' instructions. Have installation instructions available at the construction site.
- B. Provide separate control of exterior lighting system as follows:
 - 1. Pedestrian walkway, and roadway lighting: "ON" at dusk, "OFF" at dawn.

3.8 FUSES AND FUSE HOLDERS.

- A. Install fuse(s) and fuse holders in pole hand hole or transformer base for each luminaire.
 - 1. Install fuse holder and fuse in each phase conductor.
 - 2. Install fuse holder with permanently mounted dummy fuse in neutral conductor.
- B. Orient breakaway fuse holders so no energized conductors will be exposed in the event of a pole knockdown.
- C. Install insulator boots over fuse holders and tape wrap where conductor enters boot.

3.9 RACEWAYS AND BOXES

- A. Install conduit system for exterior lighting using materials and methods specified in Section 26 0533, *Raceways and Boxes for Electrical Systems*.

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3.10 BUILDING WIRE

- A. Install wiring for exterior lighting using materials and methods specified in Section 26 0519, *Low Voltage Electrical Power Conductors and Cables*.

3.11 FIELD QUALITY CONTROL

- A. Inspect each installed lighting unit for damage. Replace damaged luminaires, poles, and components.
- B. Test installed luminaires for proper operation.
 - 1. Provide instruments to make and record test results.
 - 2. Replace or repair malfunctioning luminaires and components then re-test.
 - 3. Repeat procedure until all luminaires operate properly.
- C. Replace inoperative lamps.
- D. Check poles for signs of vibration induced by 10 to 30 mph wind: visible swaying, loosened anchor bolt nuts, vibration perceptible by touch, or wires rattling inside pole. Notify the Engineer or Architect and the pole manufacturer – vibration mitigation devices may be required.

3.12 ADJUSTING AND CLEANING

- A. Clean each luminaire inside and out, including plastics and glassware. Use methods and materials recommended by manufacturer.

END OF SECTION

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SECTION 31 10 00
SITE CLEARING

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include GENERAL CONDITIONS and SUPPLEMENTARY CONDITIONS as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with trades affecting, or affected by, work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

1.02 WORK INCLUDED

- A. Perform all work required to complete the work of the Section, as indicated. Such work includes, but is not limited to, the following:
- B. Clearing, grubbing, and disposing of vegetation, including bushes, brush, trees, stumps, roots, rubbish, refuse, trash and debris within the indicated limits.
- C. Protection from injury to or defacement of trees and other vegetation and objects indicated or designated by the Landscape Architect to be preserved.
- D. Removal, salvage, or other disposition of slabs and footings, existing pavement, curbs, sidewalks, walls, steps, structures, backstops, tot lot play equipment swing sets, jungle gym system, sand play area, signage and posts, fencing, and all other site improvements which interfere with construction as indicated, or as required, by the Landscape Architect.
- E. Coordination of disconnection and capping of utilities and/or removal or relocation of utilities and utility poles, as needed.
- F. Saw cutting new openings and saw cutting demolition limits into existing construction.
- G. Stripping and stockpiling topsoil.
- H. Installation of construction fencing.

1.03 RELATED WORK UNDER OTHER SECTIONS

- A. Earthwork
- B. Erosion and Sedimentation Control
- C. Turf and Grasses.

1.04 JOB CONDITIONS

- A. General: The Contractor shall visit and accept the site as he finds it, and shall inform himself of the character and the type of site items to be removed. The Contractor shall walk the site with the Landscape Architect prior to commencing work to review the full scope of demolition and items to remain. The Owner assumes no responsibility for the actual condition or structural

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adequacy of any existing construction to be demolished.

- B. Damage or loss to site improvements shall be at the risk of the Contractor from and after the date of Contract execution, and no such damage or loss shall relieve the Contractor from any obligation under the Contract.
- C. Disposal: Dispose of cleared, grubbed, and removed material off the site. Burning of materials on the job site will not be permitted. off location, designated by the Owner and Landscape Architect.
- D. Traffic: Conduct operations and removal of debris to ensure minimum interference with the normal use of corridors, public ways and other adjacent facilities. Do not close or obstruct traffic ways, corridors, streets, walks or other used facilities without the written permission of the Owner and authorities having jurisdiction.
- E. Protection: Prevent injury to persons and damage to property. Immediately repair damaged property to its condition before being damaged.
- F. Shoring and Bracing: Provide adequate shoring and bracing to prevent uncontrolled collapse or damage to existing structures or utilities.
- G. Dust and Noise Control: Take effective measures to prevent windblown dust and to control noise to avoid creating a nuisance. Avoid creating ice hazards in freezing weather.
- H. Utilities: Maintain all utilities except those requiring removal or relocation. Keep utilities in service and protect from damage. Do not interrupt utilities serving used areas without first obtaining permission from the utility company and the Owner. Provide temporary services as required.

PART 2 – PRODUCTS

2.01 CONSTRUCTION FENCING

- A. Reference drawings for construction fencing materials and details.

2.02 STOCKPILE COVER

- A. Reinforced polypropylene tarps, resistant to ultraviolet radiation.
- B. Secured with ropes and anchors, as required and approved by the Landscape Architect.

PART 3 – EXECUTION

3.01 DEMOLITION

- A. General: Demolish completely and legally remove from site and dispose of properly. Proceed with demolition systematically.
- B. Demolish all existing above and below grade improvements except those indicated to remain. Wherever areas of new construction are shown to go over or encompass existing constructions or improvements, the existing construction and improvements shall be completely removed in their entirety, unless specifically indicated to remain.

3.02 CLEARING AND GRUBBING

- A. Clear materials specified herein to the limits shown and remove from the site.

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- B. Remove stumps and roots completely in all proposed paved or built areas and to 18" minimum below grade where lawn is to be installed; 3'-0" minimum in areas designated for shrubs, 4'-0" minimum for trees.

3.03 SALVAGE

- A. Salvage indicated material or materials determined to be suitable and required for reuse, including: grates, frames or other metal castings and miscellaneous parts of inlets and manholes; hydrants in functional condition; light poles; wood and metal fences; signs; curbing; play equipment; and other miscellaneous site items as indicated on the Drawings. Stockpile items to be salvaged in off-site location, as designated by Owner and Landscape Architect.
- B. Protect (metallic) coatings on salvaged items. Remove adhering concrete from salvaged items.
- C. Fences removed in part during construction shall be repaired to a reasonable level of finish.

3.04 STRIPPING AND STOCKPILING TOPSOIL

- A. Prior to starting general excavation, strip all topsoil within areas to be occupied by structures, pavements, steps, lawns, planting and trenches, as well as all areas to be regraded, or used for construction operations for later use in topsoiling and finish grading. Stockpile areas for topsoil shall be as indicated on Drawings, or as directed by the Landscape Architect. Should the topsoil be stockpiled in any area without prior approval of the Landscape Architect, the Landscape Architect may direct the Contractor to relocate such stockpile to another portion of the site, and the Contractor shall do so at no additional cost to the Owner.
- B. Do no stripping without clear understanding of existing soil, planting and site conditions to be preserved.
- C. All loam encountered during the stripping operation, regardless of depth, shall be excavated, stockpiled and covered on the site, where directed. Areas having greater depths of loam than reasonably anticipated shall be stripped of all loam and ordinary fill shall be used to bring such areas to the rough grade level. All other stripped material which can be classified as fill under other Sections shall be used or stockpiled for re-use in rough grading or backfill.
- D. Surplus topsoil and fill not required to fulfill the requirements of the Contract shall become the property of the Contractor and shall be removed from the site and legally disposed of.

3.05 BACKFILL

- A. Backfill trenches and excavations resulting from work under this Section in accordance with Section 31 20 00 EARTHWORK.

END OF SECTION

SITE CLEARING
31 10 00-3

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SECTION 31 20 00
EARTHWORK

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include GENERAL CONDITIONS and SUPPLEMENTARY CONDITIONS as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. The following classifications of excavation will apply in this Section:
 - 1. General Excavation: Consists of the removal and disposal of pavements, topsoil and other obstructions visible on ground surface; underground structures and utilities indicated to be demolished and removed; removal of any overburden soil; and removal of all other materials encountered that are not classified as rock excavation.
 - 2. Rock Excavation: Consists of the removal of materials encountered that cannot be excavated or ripped with conventional excavation equipment (i.e., hydraulic backhoe or excavator). Material classified as rock excavation shall be as follows:
 - a) Rock or stone in original ledge.
 - b) Boulders on site, outside trench limits exceeding two cubic yards.
 - c) Boulders within trench limits exceeding one cubic yard in volume.Only when it is demonstrated to the satisfaction of the Owner or Owner's Representative that this material cannot be removed with a hydraulic backhoe and requires hoe ramming or other means of excavation shall the material be classified as Rock Excavation.

1.02 WORK INCLUDED

- A. Without limiting the generality thereof, furnish all labor and materials to complete all earthwork within the limits of work as shown on the contract plans and/or herein specified including, but not necessarily limited to:
 - 1. Excavation and backfilling to provide access to all work areas.
 - 2. Excavation and stockpiling of materials suitable for reuse at an approved on-site location.
 - 3. Excavation and legal off-site disposal of unsuitable or excess materials, including existing fill materials, boulders, excess topsoil, blasted rock material and overburden soils.
 - 4. Soil and rock excavation, fill, backfill, refill and subgrade preparation as indicated or required, using specified materials.
 - 5. Soil and rock structure excavation, placement of bedding and backfilling of utility trenches.
 - 6. Finishing and placing specified materials as required to balance site cuts and fills.
 - 7. Excavation and backfilling all footings and foundations including retaining walls.
 - 8. Preparation of subgrade for structures, slabs, pavements and landscaping.

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9. Furnishing and installing sheeting, shoring and bracing for excavations as required by Federal, State and Local laws, regulations and ordinances.
 10. Removal of unsuitable materials from beneath proposed pavement areas.
 11. Furnishing and placing subbase and base courses and accessories for roadways, parking lots, sidewalks or other structures.
 12. Furnishing and placing rip rap, various gradations of crushed stone and related materials in areas designated on the plan.
 13. Removal of ledge, boulders, concrete, masonry and rubble as required for foundations and site excavation to the lines and grades indicated on the drawings.
 14. Rough and fine grading including compaction of existing materials, backfills and refills, rip rap and crushed stone.
 15. Dewatering, pumping, bailing and control of all groundwater and surface water for all work under this Contract.
 16. Subbase and base course for the building slabs, sidewalks and pavements shall be furnished, placed and rough graded by the contractor.
 17. Removal and disposal of debris materials.
- B. Rock Excavation (if encountered): The Base Bid shall include a unit cost per cubic yard for rock excavation in the event that rock, as defined in Paragraph 1.01, Part C (above) is encountered. The excavated rock may be processed and used on-site where suitable in the areas of new construction. The processing may require crushing and screening to meet particular size and gradation criteria. Excavated rock not used in construction at the site shall be disposed of off-site.
- C. Should highly fractured or weathered bedrock be encountered during excavation, the following rules shall apply:
1. Material encountered in trenching operations or under footings, shall be excavated or ripped with a hydraulic backhoe equal to or larger than a CAT 330, and shall be classified as Earth Excavation. When it is demonstrated to the satisfaction of the Geotechnical Engineer that this material cannot be removed with a hydraulic backhoe and requires drilling and blasting, this material shall be classified as Rock Excavation.
 2. Material encountered in open excavation shall be classified as Earth Excavation until drilling and blasting or continuous ripping is necessary.
- D. Intermittent drilling and ripping performed to increase production and not necessary to permit excavation of material encountered will be classified as Earth Excavation.
- E. Special Conditions for Site Preparation and Earthwork Operation: The Contractor shall take note of any ordinances put forth by the City of Central Falls which may limit construction hours or other operations, and shall adhere to all applicable ordinances.
- F. Definition: The term Geotechnical Engineer as used in this specification shall mean a competent inspector, qualified by experience and training, working under the supervision of a Registered Professional Engineer.

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1.03 RELATED WORK

- A. Site Furnishings
- B. Site Clearing
- C. Erosion and Sedimentation Control
- D. Asphalt Paving
- E. Concrete Paving
- F. Chain Link Fences and Gates
- G. Turf and Grasses.

1.04 SUBMITTALS

A. Submit the following and as elsewhere specified in this Section:

1. A construction sequence plan for project excavation and construction improvements, indicating temporary stockpile areas, side slopes of excavations, limits of any required temporary excavation support and sequence and procedures for slope protection, subgrade protection, excavation, concrete placement, moisture conditions of on-site excavated soils used as fill, filling, backfill and compaction.
2. No backfill shall be brought to the site without approval of the Owner's Representative. Submit the following information to the Owner's Representative for review at least 2 weeks prior to use:
 - a) Location of the borrow site, including a street map with the limits of the borrow pit property and the location of the borrow source on the site clearly illustrated.
 - b) Present and past usage of the source site and material.
 - c) Any previously existing report(s) associated with an assessment of the source site as relates to the presence of oil or hazardous materials.
 - d) Location within the site from which the material will be obtained.
 - e) Two representative samples for each proposed backfill material. Each sample shall be clearly labeled as to source of material and intended use, and shall weight at least 75 pounds.

B. Quality Control Testing for Offsite Borrow Materials

1. In the event that site characterization of offsite borrow sources indicates that soils are acceptable for use, then chemical testing will not be required. Chemical testing will not be required for customarily utilized commercial borrow sources. However, if the site characterization data indicate to the Contractor that the materials may be contaminated, or in the event that a new borrow source is proposed, chemical testing will be required. Chemical testing shall be conducted by the Contractor, as specified below, at no additional cost to the Owner. Results of chemical testing shall be submitted to the Owner's Representative.
2. Chemical Test Data: Each material source requiring testing shall be sampled by a person experienced in sample collection, who is an authorized representative of a: professional engineer registered in the State of Rhode Island; registered professional geologist;

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certified groundwater or environmental professional; or Licensed Site Professional. Representative samples of each material borrow source shall be submitted to a chemical analytical laboratory, certified by the Rhode Island Department of Environmental Management. The following analyses shall be conducted:

- a) Volatile Organic Compounds, (EPA 8240 plus hazardous Substance List (HSL) Parameters)
 - b) Acid and Base Neutral extractable Organic Compounds (EPA 8270)
 - c) Pesticides/PCBs (EPA 8080)
 - d) Total Petroleum Hydrocarbons (Infrared Method) (EPA 9071/418.1)
 - e) Thirteen Priority Pollutant Total Metals (EPA 7000 Series)
 - f) RCRA 8 TCLP Metals (EPA 6010)
 - g) Total Cyanide (EPA 9010)
 - h) Total Phenols (EPA 9065)
3. Soils samples used for chemical testing shall be sampled in accordance with criteria and protocols established by the testing laboratory ,and results submitted for review and approval of the Owner's Representative prior to use on the site.
- a) In the event that the Owner's Representative observes visual and/or odor evidence of contamination in materials being imported, the Owner's Representative will direct the Contractor to sample and test imported soils as specified above. Sampling, testing and the reporting of the test results shall be provided at no additional cost to the Owner.
4. Mix design for Controlled Low-Strength Material (Flowable Fill).
5. Manufacturer's product data for specified geosynthetic materials to be used in the Work and their intended function.
6. Results of testing performed by the Contractor's independent testing laboratory.

1.05 REFERENCE STANDARDS

A. American Society for Testing and Materials (ASTM)

1. ASTM C33 – Specification for Concrete Aggregates.
2. ASTM D422 – Method for Particle-Size Analysis of Soils
3. ASTM D698 – Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort.
4. ASTM D1556 – Test Method for Density of Soil In Place by Sand Cone Method.
5. ASTM D1557 – Test Method for Laboratory Compaction Characteristics of Sol Using Modified Effort.
6. ASTM D1682 – Standard Test Methods for Breaking Load and Elongation of Textile Fabrics.
7. ASTM D2487 – Standard Classification of Soils for Engineering Purposes.

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8. ASTM D2922 – Test Method for Density of Soil and Soil-Aggregate In Place by Nuclear Methods.
 9. ASTM D4751 – Standard Test Method for Determining the Apparent Opening Size of a Geotextile.
- B. Rhode Island Department of Transportation (RIDOT) Standard Specifications for Highway and Bridge Design.
 - C. Occupational Safety and Health Administration (OSHA) Standards and Regulations contained in Title 29: "Subpart P. Excavation, Trenching and Shoring.
 - D. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.
- 1.06 QUALITY ASSURANCE
- A. Contractor's independent testing laboratory shall provide the Quality Control Testing for Offsite Borrow Materials as specified herein.
 - B. Temporary excavation support systems, if required in the Work, shall be design by a professional engineer, registered in the State of Rhode Island, who has at least 5 years' experience in designing temporary excavation support systems within the past 10 years.
- 1.07 SAMPLES AND TESTING
- A. Submit 50-lb sample of each type of on-site and off-site fill material that is to be used at the site to the Independent Testing Laboratory for review; or submit gradation and compaction curve test results and certification of aggregate material that is to be used to Independent Testing Laboratory for review.
 - B. Submit name of each material supplier and specific type and source of each material. Change in source throughout project requires approval of Owner or Owner's Representative.
 - C. If fabrics or geogrids are to be used, design shall be submitted for approval to the Owner or Owner's Representative
- 1.08 COORDINATION
- A. The work of this Section shall be coordinated with that of other trades affecting, or affected by, this work, as necessary to assure the steady progress of all work of the Contract.
 - B. Prior to the start of earthwork, the Contractor shall arrange an on-site meeting with the Owner or Owner's Representative for the purpose of establishing Contractor's schedule of operations and scheduling inspection procedures and requirements.
 - C. As construction proceeds, the Contractor shall be responsible for notifying the Owner or Owner's Representative prior to start of earthwork operations requiring inspection and/or testing.
- 1.09 INFORMATION
- A. It is hereby understood that the Contractor has carefully examined the site and all conditions affecting work under this Section. No claim for additional costs will be allowed because of lack of full knowledge of existing conditions.

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- B. Plans, surveys, measurements and dimensions, under which the work is to be performed are believed to be correct to the best of the Owner or Owner's Representative's knowledge, but the Contractor shall have examined them for himself during the bidding period, as no allowance will be made for any errors or inaccuracies that may be found herein.
 - C. Information on the Drawings, Reference Drawings, and in the Specifications relating to subsurface conditions, natural phenomena, and existing utilities and structures is from the best sources presently available. Such information is furnished only for the information and convenience of the Contractor, and the accuracy or completeness of this information is not guaranteed.
- 1.10 EXISTING CONDITIONS
- A. The Contractor shall become thoroughly familiar with the site, consult records and drawings of adjacent structures and of existing utilities and their correction, and note all conditions which may influence the work of this Section.
 - B. By submitting a bid, the Contractor affirms that he has carefully examined the site and all conditions affecting work under this Section. No claim for additional costs will be allowed because of lack of full knowledge of existing conditions.
 - C. The Contractor may, at his own expense, conduct additional subsurface testing as required for his own information after approval by the Owner or Owner's Representative.
- 1.11 SUBSURFACE CONDITIONS AND SPECIAL SITE CONSIDERATIONS
- A. The Contractor shall visit the site prior to submitting a bid to become familiar with the extent of the work to be done under this Contract. The Contractor shall be responsible for determining the quantities of earth materials necessary to complete the work under this Section.
- 1.12 PERMITS, CODES AND SAFETY REQUIREMENTS
- A. All work shall conform to the Drawings and Specifications and shall comply with applicable codes and regulations.
 - B. Comply with the rules, regulations, laws and ordinances of the City of Central Falls, appropriate agencies of the State of Rhode Island, and all other authorities having jurisdiction. Coordinate all work done within Town and State rights of way with the appropriate agencies. Provide all required traffic control and safety measures, including uniformed police officers per Town and State requirements. All labor, materials, equipment and services necessary to make the work comply with such requirements shall be provided without additional cost to the Owner.
 - C. Comply with the provisions of the Manual of Accident Prevention in Construction of the Associated General Contractors of America, Inc. and the requirements of the Occupational Safety and Health Administration (OSHA), United States Department of Labor.
 - D. The Contractor shall procure and pay for all permits and licenses required for the complete work specified herein and shown on the Drawings.
 - E. The Contractor shall not close or obstruct any street, sidewalk, or passageway unless authorized in writing by the Owner or Owner's Representative. The Contractor shall so conduct his operations as to interfere as little as possible with the use ordinarily made of roads, driveways, sidewalks or other facilities near enough to the work to be affected hereby. The Contractor shall comply with the time limits established by the terms for trucking onto and off of the site.

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- F. Any apparent conflict between the Drawings and Specifications and the applicable codes and regulations shall be referred to the Owner or Owner's Representative in writing, for resolution before the work is started.

1.13 REGULATORY AND PROJECT REQUIREMENTS

- A. The Contractor shall take great care to do no damage to existing structures, utility lines and trees to remain.
- B. All damage caused by any excavation operations shall be repaired to the satisfaction of the Owner or Owner's Representative at no additional cost to the Owner.

1.14 LAYOUTS AND GRADES

- A. The term "finished grades" as used herein shall mean final grade elevations indicated on the Drawings. Spot elevations shall govern over proposed contours. Where not otherwise indicated, project site areas outside of the building shall be given uniform slopes between points for which finished grades are indicated or between such points and existing established grades.
- B. The word "subgrade" as used herein, means the required surface of subsoil, borrow fill or compacted fill. This surface is immediately beneath the site improvements, fill materials as dimensioned on the Drawings, or other proposed surface material.

1.15 DISPOSITION OF EXISTING UTILITIES

- A. Active utilities existing on the site and work areas shall be carefully protected from damage and relocated or removed as required by the work. When an active utility line is exposed during construction, its location and elevation shall be plotted on the record drawings as described in this Section and both the Owner or Owner's Representative and Utility Owner notified in writing.
- B. Inactive or abandoned utilities encountered during construction operations shall be grouted, plugged or capped. The location of such utilities shall be noted on the record drawings and reported in writing to the Owner or Owner's Representative.
- C. The Contractor shall notify "Dig Safe" and local utility companies prior to the start of construction. The "Dig Safe" number shall be submitted by the Contractor in writing to the Owner or Owner's Representative prior to construction.

1.16 DRAINAGE

- A. The Contractor shall control the grading in areas under construction on the site so that the surface of the ground will properly slope to prevent accumulation of water in excavated areas and adjacent properties.
- B. Should surface, rain or ground water be encountered during the operations, the Contractor shall furnish and operate pumps or other equipment, and provide all necessary piping to keep all excavations clear of water at all times and shall be responsible for any damage to work or adjacent properties for such water. All piping exposed above surface for this use, shall be properly covered to allow foot traffic and vehicles to pass without obstruction.
- C. Presence of ground water in soil will not constitute a condition for which an increase in the contract price may be made. Under no circumstances place concrete fill, soil fill, lay piping or install appurtenances in excavation containing free water. Keep utility trenches free of water until pipe joint material has hardened and backfilled to prevent flotation.

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1.17 PROTECTION OF BEARING SUBGRADES

- A. The Contractor shall be required to maintain stable, dewatered, and frost free subgrades for pavement areas, utility trenches, and other areas as directed by the Owner or Owner's Representative.
- B. The Contractor shall take precautions to reduce subgrade disturbance. Such precautions may include diverting storm water runoff away from construction areas, reducing traffic in sensitive areas, thermal protection during cold weather periods, and maintaining an effective dewatering operation.
- C. Soils exhibiting weaving/instability or which become frozen, as determined by the Owner or Owner's Representative, shall be over-excavated (removed) to competent bearing material and replaced with compacted Structural Fill at no additional cost to the Owner.

1.18 DEWATERING

- A. The Contractor shall be required to implement ground water control measures to maintain the ground water level a minimum of one foot below all final excavation levels or to propose alternative methods for placement of fill over existing undisturbed material with ground water at or near the surface in such a manner that the existing materials will not be disturbed. The Contractor will be required to implement ground water control measures adequate to maintain the excavation sufficiently dry to allow efficient use of normal excavation equipment and to provide a borrow material suitable for placement and compaction as specified or as directed by the Owner or Owner's Representative.
- B. The Contractor is responsible for correcting any disturbance of natural bearing soils or damage to structures caused by an inadequate dewatering system or by interruption of the continuous operation of the system as specified.
- C. The Contractor shall make the entire excavation for this work in-the-dry. The water level is to be maintained continuously at least one foot below bottom of excavation for the length of time to complete the work. The Contractor shall place all fill materials and proposed improvements in-the-dry.
- D. The Contractor shall, at all times during construction, provide and maintain proper equipment and facilities to remove promptly and dispose of properly, all water entering excavations and keep such excavations dry so as to obtain a satisfactory undisturbed bottom of excavation or subgrade condition. Dewatering shall be in operation until the fill or the proposed surface condition has been completed to such extent that it will not be floated or otherwise damaged by allowing water levels to return to natural elevations.

1.19 RESTORATION OF DRAINAGE STRUCTURES

- A. In addition to other work specified and prior to substantial completion, the Contractor shall repair all erosion in all areas, and excavate and remove accumulations of silt, debris or other material occurring from work under this Contract in the drainage structures to remain. These areas will be drained or pumped, if necessary, to properly remove all accumulations of silt and debris and to achieve a smooth bottom.

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PART 2 - PRODUCTS

2.01 MATERIALS

- A. Select Granular Fill shall be bank-run sand and gravel, gravel, sandy gravel, or gravelly sand free of organic material, wood, trash, snow, ice, frozen soil and other deleterious materials which may be compressible or which cannot be compacted as specified herein and shall be well-graded within the following limits:

Sieve Size	Percent Finer by Weight
8 in.	100
3 in.	70 to 100
½"	40 to 90
No. 4	25 to 80
No. 10	15 to 70
No. 40	5 to 40
No. 200	0 to 12

- B. Cobbles and boulders having a size exceeding 2/3 of the lift thickness shall be removed prior to compaction.
- C. Base Course Fill shall be bank-run sand and gravel, gravel, sandy gravel, or gravelly sand free of organic material, wood, trash, snow, ice, frozen soil and other deleterious materials which may be compressible or which cannot be compacted as specified herein and shall be well-graded within the following limits:

Sieve Size	Percent Finer by Weight
8 in.	100
3 in.	100
½"	40 to 80
No. 4	30 to 70
No. 10	20 to 60
No. 40	10 to 30
No. 200	3 to 10

- D. Cobbles and boulders having a size exceeding 2/3 of the lift thickness shall be removed prior to compaction.
- E. Common Fill shall consist of mineral sandy soil predominantly free from organic materials, topsoil, wood, trash, snow, ice, frozen soils and other deleterious materials which may be compressible or which cannot be properly compacted. It shall not contain stones that are greater than 2/3 the lift thickness of Common Fill being placed. Common Fill shall not contain granite blocks, broken concrete, masonry rubble or other similar materials. It shall have physical properties such that it can be readily spread and compacted during filling and backfilling.
- F. Impervious Fill shall be as specified above for Common Fill, except that it must have greater than 20 percent by weight passing the No. 200 sieve.
- G. Crushed Stone required where indicated shall conform to RIDOT Specification M.01.
- H. Pavement Base Materials
1. Dense-graded crushed stone for pavement base use in project pavement sections as indicated shall conform to RIDOT Specification M.01.

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2. Gravel borrow for pavement base use in project pavement sections as indicated shall conform to RIDOT Specification M.01.
- I. Sand shall conform to ASTM C33 for fine aggregate.
 - J. Controlled Low-Strength Material (CLSM), (i.e., Flowable Fill) used as backfill and fill shall be comprised of a mixture of Portland cement, coarse aggregate, fine aggregate and water. Materials, methods of preparation, and placement techniques shall comply with the requirements specified in Section 32 13 13. Mix shall result in a flowable material with a 28-day compressive strength of approximately 100 psi minimum.
 1. Maximum coarse aggregate size used in the mix shall be limited to 3/8 in.
 2. No fly ash shall be included in the mix.
 3. Mix design shall be submitted to the Owner's Representative with associated cylinder break data to confirm specified minimum strength.
 - K. Drainage Fabric shall consist of Mirafi 140N or approved equal.

PART 3 - EXECUTION

3.01 TEMPORARY EXCAVATION SUPPORT (SHEETING AND BRACING)

- A. Furnish, put in place and maintain such temporary excavation support as required: by Federal, State and local safety requirements; to support the sides of excavations; to prevent Work from extending into or beyond the contract limits, wetland and buffer zones, and limits indicated on the drawings; to prevent movement which could diminish the width of the excavation below that necessary for proper construction; to protect adjacent site improvements and structures from undermining or other damage and as indicated. Care shall be taken to prevent voids outside of the sheeting, but if voids are formed, they shall be immediately filled with Sand and rammed.
- B. Unless indicated otherwise, temporary excavation support shall be constructed completely outside the external limits of structures providing for required clearances, dimensions, and work areas required for construction outside of structures. Support shall be plumb and securely braced and tied in position. The temporary excavation support system shall withstand all pressures to which the structure or trench will be subjected. Any movement or bulging which may occur shall be corrected to provide the clearances, dimensions and work areas required for construction.
- C. Where temporary excavation support is required to support the sides of the excavations for structures, engage a professional engineer, registered in the State of Rhode Island, to design the temporary excavation support. The installed support system shall be in conformity with the design, and certification of this shall be provided by the professional engineer.
- D. All temporary excavation support not indicated to be left in place shall be removed in such manner as not to endanger the construction or other structures, utilities, ductwork, or property. All voids left or caused by withdrawal of support elements shall be immediately refilled with Sand by ramming with tools especially adapted to that purpose.
- E. No temporary excavation support element is to be withdrawn if driven below mid-diameter of any pipe, conduit or utility and under no circumstances shall any sheeting be cut off at a level lower than 1 ft above the top of any pipe. The minimum depth of sheeting left in place shall be 12 in., except within the limits of wetlands, all timber sheeting to be left in place shall be treated with Chromated Copper Arsenate (CCA) for ground contact to prevent decay.

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3.02 PUMPING AND DRAINAGE

- A. At all times during construction provide and maintain equipment and facilities to remove water entering excavations and keep such excavations dry so as to obtain an undisturbed foundation subgrade condition until the fills, structures, utilities, conduits, pipes or pavements to be built thereon have been completed to such extent that they will not be floated or otherwise damaged by allowing water levels to return to natural levels.
- B. Dewatering shall at all times be conducted in such a manner as to preserve the undisturbed bearing capacity of the subgrade soils at proposed bottom of excavation. Groundwater levels should be lowered a minimum of 12 inches below the bottom of proposed excavation limits prior to final excavation. Well or sump installations shall be constructed with sand filter designed to prevent drawing of finer-grained soil from surrounding ground.
- C. Water entering the excavation from surface runoff or precipitation shall be collected in shallow ditches around the perimeter of the excavation, drained to sumps and pumped from the excavation to maintain a bottom free from standing water. The bases of all excavations shall be pitched away from bearing areas with a minimum slope of 0.02 ft/ft to promote positive drainage during construction.
- D. Prevent hydrostatic uplift of any structure during construction.
- E. Drainage shall be disposed of such that flow or seepage back into the excavated area will be prevented.
- F. Flotation shall be prevented by maintaining a continuous operation of the dewatering system. The Contractor shall be fully responsible and liable for all damages which may result from failure of this system.
- G. Remove the dewatering equipment when the Contractor determines that dewatering is not longer required in the performance of the Work.
- H. Prevent the accidental discharge of fuel, oil, and other fluids in order to prevent adverse effects on surface water and groundwater quality.

3.03 LINES AND GRADES

- A. The Contractor shall be responsible for layout and survey control during earthwork and establishing all elevations required. The Contractor shall be responsible for the maintenance and protection of survey control reference points and location stakes.
- B. If necessary, the Contractor shall employ a land surveyor registered in the State of Rhode Island, familiar with the type of construction under this contract, who shall establish lines and grades for construction of the project. The Contractor shall be responsible for the correct location of all project elements.
- C. Earthwork shall be brought to the final grade elevations (finished grades) indicated. Spot elevations shall govern over proposed contours. Where not otherwise indicated, project site areas shall be given uniform slope between points for which finished grades are indicated or between such points and existing established grades.
- D. Finished grades, contours, and elevations indicated describe final surface elevations for completed construction.

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- E. Establish and maintain stakes over all areas to be graded. Maintain sufficient reference points at all times during construction to properly perform the contract installation. Grading between indicated final grades shall be smooth, even surfaces, except as otherwise required.

3.04 SUBGRADE PREPARATION REQUIREMENTS

- A. Acceptable subgrades are undisturbed, dry, firm, naturally occurring soils having an in-place density of 95 percent or greater as determined in accordance with ASTM D1557, Procedure C. If, as a result of Contractor's operations, the subgrade is not acceptable as specified herein, the Contractor shall remove the unsuitable material and replace it with compacted Select Granular Fill at no additional cost to the Owner so that the condition of the subgrade meets the requirements of the Contract Documents before any Work is placed thereon.
- B. If the subgrade material, in its undisturbed natural condition, located at or below the normal grade of the excavation as indicated, is not acceptable for support of the project element, it shall be removed to such depth and width as the Owner's Representative may direct and be replaced with compacted Select Granular Fill. The Work includes removal of all unsuitable material below the specified or indicated subgrade of excavation.
- C. If the bottom of any excavation is removed below the limits indicated or specified, it shall be refilled compacted Select Granular Fill at no additional cost to the Owner.
- D. Footing Subgrades – After removal of Topsoil, Loess, existing fill materials and/or other disturbed, soft or organic materials and completing excavation to the required elevation or specified condition, the exposed soil surfaces should be re-compacted prior to placing Select Granular Fill or placing concrete (directly on Glacial Till) for footings with a minimum of five (5) passes (complete coverage) of a 700 pound self-propelled vibratory roller or vibratory plate compactor. If weaving or other disturbance is observed during the re-compaction by the Owner's Representative, the Owner's Representative may waive the re-compaction requirement. Loose or disturbed bedrock must be removed to expose the solid bedrock below. Where bedrock is encountered above or within 12 in. of the proposed footing elevations, the bedrock shall be over excavated to a minimum of 12 in. below the bottom of the footing to allow for the placement of a Select Granular Fill cushion, which shall be compacted to 95% per ASTM D1557.
- E. In the event that a boulder becomes partially exposed at at footing bearing level, one of the following options should be utilized: (1) remove the boulder, and fill the void with compacted Select Granular Fill, or (2) remove a portion of the boulder sufficient to provide placement of 12 in. of compacted Select Granular Fill beneath the footing over the boulder.
- F. Pavement Subgrades – Topsoil, Loess, existing fill materials and/or other disturbed, soft or organic material shall be removed if present at the exposed subgrade for all pavements. Prior to placing additional fill or base course material within pavement areas, the exposed natural soil subgrade should be confirmed to be firm and stable under proof rolling by a minimum of four (4) passes of a 5-ton self-propelled vibratory roller. Soft areas revealed by proofrolling should be removed and replaced by compacted Select Granular Fill. Boulders, which extend above pavement subgrade level, should be treated as recommended above for Footing Subgrades. The surface should then be compacted with at least four passes of a heavy vibratory roller imparting at least 25,000 lbs of dynamic force.
- G. Trench Subgrades – Topsoil, Loess, existing fill materials and/or other disturbed, soft or organic material shall be removed if present at exposed trench subgrades. Trench subgrades must be firm and stable prior to placement of bedding materials, utilities/conduits, and trench backfill.

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3.05 TRENCH EXCAVATION AND BACKFILLING

- A. Excavate for pipes, storm and sanitary drainage conduits, foundation drainage, heating, electrical, gas, and water lines, and for related structures and appurtenances. Unless otherwise indicated, provide a separate trench for each utility. Coordinate Work with utility companies for underground conduits and with the gas company for installation of gas piping.
- B. Locate pipes, conduits, and ductwork as indicated. The Contractor may make minor modifications in locations to avoid interference with existing structures or obstructions as approved by the Owner's Representative.
- C. "Invert" or "invert elevation" as used herein means elevation at base of pipe at its inner surface, or flow line. "Bottom of pipe" as used herein means elevation at base of pipe at its outer surface.
- D. If the material at or below elevation of bottom of pipe, or related structure, is unsuitable to support the pipe or related structures, the Contractor shall remove unsuitable soils to a depth below bottom of pipe required to get to the top of undisturbed, naturally deposited soils or bedrock and replace with compacted Select Granular Fill.
- E. Utilities or piping shall not be laid directly on bedrock, boulder, cobbles or other hard material. This material shall be removed to a minimum of 6 in. below the bottom of pipe or as indicated, and backfilled with compacted Select Granular Fill as specified.
- F. Where pipe, ducts or conduits are to be laid in compacted Select Granular Fill bedding or encased in low density concrete, the trench may be excavated by machinery to, or just below the designated subgrade provided that the material remaining in the bottom of the trench is not disturbed.
- G. Where pipe, ducts or conduits are to be laid directly on the trench bottom, the bottom 6-in of the trenches for each shall not be excavated to grade by machinery, the last of the material being excavated manually in such a manner that will give a flat bottom true to grade so that pipe, duct, or conduit can be evenly supported on undisturbed material. Bell holes shall be made as specified for belled piping.
- H. Except as otherwise indicated, pipe trench width shall be 3-ft for pipe diameters up to 12-in, 4-ft for pipe diameters ranging from 14 to 24-in and 5-ft for pipe diameters ranging from 30 to 36 in. For pipe diameters greater than 36-in, the trench width shall be 18-in on each side of the pipe or as indicated. The bottom of excavation shall be as specified in Paragraph 3.06.E or to depth shown. Slope trench sides as necessary to maintain stability or provide trench temporary excavation support. Grade bottom of trenches evenly to ensure uniform bearing for full length of pipes. Pitch trenches to conform to the indicted gravity drainage pipe pitch.
- I. Coordinate utility trench backfilling with mechanical and other trades involved.
- J. Excavation for manholes, catch basins, drain inlets or other related structures shall be provided with 18-in minimum clearance on all sides.
- K. Meet the following criteria when installation method includes the use of a steel trench box:
 - 1. When installing rigid pipe (RCP) any portion of the box extending below mid diameter shall be raised above this point prior to moving the box ahead to install the next pipe. This is to prevent the separation of installed pipe joints due to movement of the box.

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2. When installing flexible pipe (PVC, D.I., HDPE), the bottom of the box shall not extend below mid diameter. This is to prevent loss of soil between the box and the pipe bedding which could result in excessive deflection of the installed pipe.
- L. Backfilling over and around ducts or conduits shall not begin until a minimum of 48 hours after placing controlled low density material (flowable fill) encasement.
- M. Where pipe is to be installed in any type of fill, the fill shall be placed and compacted to a depth of 3-ft above the top of the pipe and then re-excavated for pipe installation.
- N. After the pipe has been laid, jointed, and successfully testing, backfilling shall begin and thereafter proceed expeditiously. Select Granular Fill pipe bedding shall be placed as indicated to 6 in above the top of the pipe. Backfill material shall be placed in 6-in lifts and thoroughly compacted.
- O. Where the pipes are laid in unpaved areas, the remainder of the trench above the bedding shall be filled with Common Fill in layers not to exceed 8 in and compacted as specified in Paragraph P, below. The backfill shall be mounded 6 in above the existing or finished grade. Wherever a loam or gravel surface exists prior to excavation, it shall be removed, conserved and replaced to the full original depth as part of the Work. In some areas it may be necessary to remove excess material during the cleanup process, so that the ground may be restored to its original or finished grade level and condition.
- P. Where the pipes are laid in streets, or other paved areas, the remainder of the trench above the bedding to the bottom of the pavement section (pavement, base and subbase) shall be backfilled with Select Granular Fill in 12 in. layers and compacted to 95 percent of maximum dry density as determined in accordance with ASTM D1557, Procedure C.
- Q. Where the pipes are installed below structures, the remainder of the trench above the bedding to the bottom of the slab subgrade shall be backfilled with Select Granular Fill in 6 in. layers and compacted to 95 percent of maximum dry density as determined in accordance with ASTM D1557, Procedure C.
- R. Along the length of all pipeline and duct trenches, impervious concrete dams shall be constructed at 100-ft intervals or at manholes and structures, whichever if less, to obstruct the free flow of groundwater after construction is completed. Install impervious dams at all points where a pipe trench enters an excavated area where a permanent perimeter or underdrain system installed.
- S. Trench excavation and backfilling within the Street or State Highway Layout shall be in accordance with the Rhode Island Department of Transportation permit process for installation of individual utilities.

3.06 CONTAMINATED MATERIALS

- A. If contaminated materials are encountered, Contractor shall immediately stop Work in the area and notify the Owner's Representative. The Contractor will test the excavated soil, as required by RIDEM to determine disposal requirements. Contractor shall not resume Work in the area until directed in writing by the Owner's Representative.

3.07 MISCELLANEOUS EXCAVATION

- A. Make all other excavations necessary to permit the placing of loam and plants, for constructing roadway and any other miscellaneous excavation required under this Contract.

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3.08 ROCK EXCAVATION

A. General

1. Rock is material geologically classified as intact, un-transported bedrock requiring systematic drilling for removal. Rock includes boulders greater than or equal to 1.5 cubic yards in volume. Rock does not include boulders less than 1.5 cubic yards in volume, or loose, weathered, or fragmented rock which can be excavated with a large hydraulic excavator. Rock excavation shall be made to the widths and depth specified or indicated. Every attempt should be made to excavate bedrock by mechanical means (i.e., hydraulic excavator, rock ripper, etc.).
2. If rock is encountered during the process of excavation, the material shall be uncovered and exposed, and the Contractor shall notify the Owner or Owner's Representative before proceeding further.
3. Failure on the part of the Contractor to uncover such material and continue with the excavation before notification of the Owner or Owner's Representative will forfeit the Contractor's right of claim to additional payment.
4. Where removal of boulder or ledge is required outside the established payment lines, the Owner or Owner's Representative shall determine the extent of this removal and basis of payment.
5. This Section includes the excavation and disposal of all rock boulders encountered to the lines and grades indicated on the drawings or as specified. The Contractor shall either dispose of the excavated material off-site or utilize it on site, if crushed to a maximum size of 1-½ inches, unless directed otherwise by the Owner or Owner's Representative. If material is disposed of-site, the Contractor shall furnish suitable backfill material (as specified in elsewhere in this Section) in place of the excavated material. Rock shall be removed to a minimum depth as detailed on the Drawings or elsewhere in this Section.

B. Execution

1. Whenever possible, rock excavation shall be by use of modern mechanical means (i.e. ripper, large backhoe, jack hammers, pre-drilling at close spacing to aid excavation and other means) selected by the Contractor. The use of explosives shall not be permitted.
2. The Owner's Representative shall, at all times, have the authority to prohibit or halt the Contractor's methods of excavation if it cannot be shown that no damage to adjacent structures will occur as a result of the plan.
3. Excess Rock Excavation - If rock is excavated beyond the limits of payment indicated on the Drawings, specified, or authorized in writing by the Owner's Representative, the excess excavation, whether resulting from over breakage or other causes, shall be backfilled, by and at the expense of the Contractor, with material approved by the Owner's Representative and specified in this Section of these Specifications.

C. Work Limits

1. Where ledge is encountered within the limits of work, the Contractor shall remove rock to 6 inches below design subgrade, slab or footing. All rock bottoms shall be carefully examined, loose or shaken rock shall be removed to solid bearing, and the rock surface leveled, or shelved to a slope not exceeding ½ inch per foot, or as directed.

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2. Excavate rock encountered in grading as follows:
 - a) Under catch basin and manholes 12 inches.
 - b) Under planting beds 18 inches.
 - c) Under roadways 18 inches below paving.
 - d) Under lawns 12 inches.
 - e) Under trees 24 inches below finish grade.
 - f) Under walkways 12 inches.
 - g) Under pipes 12 inches.
3. All boulders or protruding rock outcrops shall remain undistributed at lawn and plant beds when so directed by the Owner or Owner's Representative. Rock shall be fractured six inches below subgrade of paved areas but this six-inch layer shall remain in place. Rock in lawns and plant beds shall be similarly treated unless it is directed to remain.
4. Basis of payment: The total amount of rock excavation will be based upon the volume of rock excavated within and/or above the lines referred to above.
5. The payment lines shall be used as a basis of payment for any additional work, and shall be used as limits of excavation. Limits of excavation are shown on the Drawings and as specified herein. The volume of rock excavation shall be predetermined prior to removal as specified herein and shall be calculated to the payment lines.

D. Payment Lines for Rock Excavation

1. Payment lines for manhole and catch basin shall be one foot outside the outer wall and 12 inches below the structure.
2. Payment lines for rock excavation under pavements shall be 12 inches below the bottom of pavement.
3. Payment lines for rock excavation at plant beds shall be 18 inches below the surface.

E. Method of Payment

1. Allowance for Rock Excavation: The Contractor shall NOT include in his base bid any allowances for Rock Excavation (Open or Trench) by the means specified herein. If it is determined by the Owner or Owner's Representative that Rock Excavation is necessary, the Owner shall pay for the amount of excavation only by the means described herein at the unit price bid per cubic yard submitted by the Contractor in his base bid.
2. The Contractor shall include in his base bid a unit cost for rock excavation by hoe-ramming at a unit bid price per cubic yard. Hoe-ramming will only be performed upon prior approval of the Owner or Owner's Representative for removal of materials encountered that cannot be excavated or ripped with conventional excavation equipment (i.e., hydraulic backhoe or excavator). Only when it is demonstrated to the satisfaction of the Owner or Owner's Representative that this material cannot be removed with a hydraulic backhoe or excavator and requires hoe ramming shall the material be classified as Rock Excavation.

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3.09 REMOVAL AND REPLACEMENT OF UNSUITABLE MATERIALS

- A. Allowance for Unsuitable Materials: The Contractor shall NOT include in his base bid any additional allowances for Removal and Replacement of Unsuitable Materials beyond the quantities required to satisfy the base bid requirements of the Contract Documents. If it is determined by the Owner or Owner's Representative that the total amount of Unsuitable Materials removed from the site is in excess of the quantities required to satisfy the base bid requirements of the Contract Documents, the Owner shall pay for the excess amount at the unit price bid per cubic yard.
- B. Measurements:
1. When, during the process of normal excavation, unsuitable material is encountered, such material shall be uncovered and exposed in such a manner that the surface is clearly visible. The Owner's Representative shall be immediately notified by the Contractor before proceeding further. The areas in question shall then be cross-sectioned by the Contractor as hereinafter specified.
 2. Failure on the part of the Contractor to uncover such material and notify the Owner's Representative, and proceeding by the Contractor with the excavation of the unsuitable material before such notification is made and before cross-sections are taken will forfeit the Contractor's right of claim towards additional payment at the quoted unit price.
 3. The Contractor shall employ and pay for a licensed Registered Civil Engineer or Land Surveyor to take cross-sections of unsuitable material before and following removal, to make computations of volume of material removed. Cross-sections shall be taken in the presence of, and the computations approved by the Owner's Representative. The Owner has the option to perform independent cross-sections and computations of unsuitable quantities.

3.10 GENERAL FILL, BACKFILL AND COMPACTION REQUIREMENTS

A. Optimum Water Content

1. The Owner's Representative shall determine the optimum water content to achieve the maximum dry density for earth fill and backfill materials specified herein.
2. ASTM D1557, Procedure C shall be the test method used to determine the optimum water content and maximum dry density of earth fill and backfill materials used in the Work.

B. Seasonal Conditions

1. Do not place frozen material in fill or backfill, or place fill or backfill on frozen material. Remove previously frozen material before a new lift of fill or backfill is placed.
2. Discontinue filling, backfilling and compaction operations from November through April (wet and cold season) unless the Contractor demonstrates successful moisture and compaction control techniques to achieve the indicated or specified density requirements.

C. Compaction

1. Water jetting and puddling are not permitting as a means of compaction.
2. If material is "too dry" such that it is loose and unable to meet the specified density requirements after compaction, sprinkle with water and mix the material until the water

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content of the fill or backfill being placed is close to the optimum water content. "Too dry" is defined herein as a condition when the water content of the fill or backfill being placed is below the optimum water content to the extent that the Contractor cannot achieve the specified degree of compaction. Resume moisture conditioning and compaction operations until the specified density requirements are achieved.

3. If material is "too wet" or spongy (e.g., it springs back after a pass of the compaction equipment), plow scarify, harrow and/or till the previously placed material to a depth not to exceed 2/3 the lift thickness to aerate and dry out the material, or mix with dry material until the water content of the material to be compacted is close to the optimum water content. "Too wet" is defined herein as a condition when the water content of the fill or backfill being placed is in excess of 2% of the optimum water content or to the extent that the Contractor cannot achieve the specified degree of compaction. Resume moisture conditioning and compaction operations until the specified density requirements are achieved.
- D. Crushed Stone - Crushed Stone for the foundation drainage system shall be placed in lifts not to exceed 6 in and consolidated with a minimum of four passes (complete coverage) of hand-guided vibratory steel drum compaction equipment.
- E. Pavement Base Materials - Dense-graded crushed stone or gravel borrow for base in pavement sections shall be placed in lifts not to exceed 6 in and compacted to required project specifications or 95% ASTM D1557.
- F. Topsoil - Place and lightly compact (87% of ASTM D1557) topsoil in designated areas and all disturbed areas not to receive landscape plantings. See also Section 32 92 00 of these Specifications.

3.11 BACKFILLING – COMMON FILL AND IMPERVIOUS FILL

- A. Common Fill and Impervious Fill may be used as trench backfill, embankment fill; or in other areas as indicated. Material conforming to the requirements of Common Fill and Impervious Fill shall be placed in layers having a maximum thickness of 1 ft measured before compaction when using large equipment and a maximum thickness of 8 in when using hand-guided compaction equipment.
- B. Common Fill and Impervious Fill shall be compacted to a least 95 percent of maximum density as determined by ASTM D1557, Procedure C.
- C. Materials placed in fill areas shall be deposited to the lines and grades indicated and for the placing Topsoil thereon.
- D. The surfaces of filled areas shall be graded to smooth true lines, strictly conforming to grades indicated on the grading plan and no soft spots or un-compacted areas will be allowed in the Work.
- E. No compacting shall be done when the material is too wet. At such time, Work shall be suspended until the previously placed and new materials have dried sufficiently to permit property compaction.
- F. The surface of lifts of Common Fill and Impervious Fill shall be graded following compaction to promote controlled surface water (precipitation) runoff and smooth-rolled at the end of each day to prevent fill lifts from becoming saturated with water. No lift of Common Fill or Impervious Fill shall be left in an un-compacted state at the end of a day's operations.

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3.12 BACKFILLING – SELECT GRANULAR FILL

- A. Select Granular Fill shall be placed in layers having a maximum thickness of 12 in. in open areas when using large compaction equipment and 6-in in confined areas, including points where conduit and piping join structures, when using hand-guided compaction equipment, measured before compaction. Each layer of fill shall be compacted to at least 95 percent of maximum dry density determined by ASTM D1557, Procedure C.
- B. Select Granular Fill shall not be placed on a frozen surface or one covered by snow or ice, nor shall snow, ice or frozen earth be incorporated in the compacted fill.
- C. Prior to backfilling, remove unsuitable material, including rubbish, organic materials or other debris. Do not commence filling operations until conditions have been observed and accepted by the Owner's Representative.

3.13 BACKFILLING – BASE COURSE FILL UNDER SLABS

- A. Base Course Fill shall be placed in layers having a maximum thickness of 8 in. in open areas when using large compaction equipment and 6 in. in confined areas, including points where conduit and piping join structures, when using hand-guided compaction equipment, measured before compaction. Each layer of fill shall be compacted to at least 95 percent of maximum dry density determined by ASTM D1557, Procedure C. The limits of Base Course Fill under slabs shall extend to the limits indicated on the Drawings.
- B. Base Course Fill shall not be placed on a frozen surface or one covered by snow or ice, nor shall snow, ice or frozen earth be incorporated in the compacted fill.

3.14 EARTH EMBANKMENTS – COMMON FILL

- A. All organic materials, including Topsoil, peat and loam, and inorganic silt material (Loess) shall be removed from areas beneath new embankments. If the subgrade slopes greater than 5H:1V, the subgrade shall then be compacted by at least two passes (complete coverage) of a fully loaded ten-wheel dump truck or alternative compaction equipment which impacts equivalent contact pressures. The prepared subgrade shall be observed and approved by the Owner's Representative prior to the placement of fill.

3.15 HANDLING, TEMPORARY STOCKPILING AND DISPOSAL OF SURPLUS EXCAVATED MATERIALS

- A. In order to prevent environmental pollution arising from the construction activities related to the performance of this Contract, comply with all applicable Federal, State and local laws and regulations concerning waste material disposal, as well as to the specific requirements stated in this Section and in other Sections of the Specifications.
- B. Materials shall be segregated, handled, processed and temporarily stockpiled in designated on-site areas until the Contractor is ready to use them in the Work. Excavated soils shall be used as Common Fill and Impervious Fill.
- C. Materials that do not meet the specified criteria contained in PART 2 - PRODUCTS herein and related sections of the specifications shall be disposed of offsite as part of the work.
- D. Temporary stockpiled earth materials shall be placed and compacted under the requirements for Common Fill, except the required compaction shall be reduced to 87 percent of maximum dry density as determined in accordance with ASTM D1557, Procedure C. The surface of earth stockpiles shall be graded to promote controlled surface water (precipitation) runoff and smooth-

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rolled at the end of each day to prevent stockpiled materials from becoming saturated with water. Erosion control barriers shall be installed on the down slope side of all material stockpiles that are to be maintained for more than five (5) days.

- E. Disposal or temporarily stockpiling of excavated material beyond the limit of work line is strictly prohibited. Any violation of this restriction by the Contractor or any person employed by the Contractor, will be brought to the immediate attention of the responsible regulatory agencies, with a request that appropriate action be taken against the offending parties. The Contractor will be required to remove the material and restore the area impacted at no additional cost to the Owner.

3.16 GRADING

- A. Grading, in preparation for placing of topsoil, planting areas, paved walks and drives and appurtenances shall be performed where indicated, to the lines, grades and elevations indicated. All material encountered, of whatever nature, within the grading limit indicated, shall be removed and disposed of. During the process of grading, the subgrade shall be maintained in such condition that it will be dry and well drained at all times. If necessary, temporary drains and drainage ditches shall be installed to intercept or divert surface water, which may affect the prosecution of condition of the Work.
- B. If at the time of grading it is not possible to place any material in its final location, it shall be temporarily stockpiled in approved areas for later use. Stockpiling or double handling of excavated material will be at no additional cost to the Owner.
- C. Stones or rock fragments larger than 4-in in their greatest dimensions will not be permitted in the top 6 in of the finished subgrade of all fills or embankments.
- D. In cuts, all loose or protruding rocks on the back slopes shall be barred loose or otherwise removed to 6-in below the line or finished grade of slope. All cut and fill slopes shall be uniformly dressed to the slope, cross-section and alignment indicated.

END OF SECTION

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SECTION 31 25 00
EROSION AND SEDIMENTATION CONTROLS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract from the front of the Specification book, including General Conditions, Supplementary General Conditions, and Division 1 Specification Sections, apply to this Section.
- B. The term "RIDOT Specifications" refers to the Rhode Island Department of Transportation Standard Specifications for Road and Bridge Design, latest edition.
- C. The term "AASHTO" refers to the American Association of State Highway Transportation Officials Standard Specifications for Transportation Materials and Methods of Sampling and Testing, Parts 1 and 2.

1.02 SCOPE OF WORK

- A. The extent of the sedimentation control includes, but is not limited to the installation of erosion control barriers, haybales at catch basins, inlet sediment control devices, erosion control blankets, filter fabric, temporary siltation ponds, mulching of bare surfaces and timely seeding/paving of finished surfaces

1.03 QUALITY ASSURANCE

- A. Conform to local, state and federal regulatory requirements.
- B. Sedimentation control systems depicted on drawings are intended to be minimum requirements to meet anticipated site conditions.
- C. When no sedimentation control system is shown on the drawing, the Contractor shall be required to establish a system to prevent siltation of adjacent property or streams.
- D. Sedimentation control shall be provided downslope of all temporary material stockpiles to be maintained for more than five (5) days.
- E. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the Work in this Section.

1.04 SCHEDULE

- A. Required sedimentation control facilities must be constructed and in operation prior to land clearing and/or other construction to ensure that sediment laden water does not enter the natural drainage system or adjacent wetland areas.
- B. Sediment facilities shall be maintained in a satisfactory condition until such time that clearing and/or construction is completed and potential for on-site erosion has passed.
- C. The implementation, maintenance, replacement and additions to erosion/sedimentation control systems shall be the responsibility of the Contractor.

EROSION AND SEDIMENTATION CONTROLS

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PART 2 - PRODUCTS

2.01 INLET SEDIMENT CONTROL DEVICES

- A. Inlet Sediment Control Devices shall be Siltsack®. Product size is specific to individual catch basins and as such may vary.
- B. Work shall consist of furnishing, installing, maintaining, and removing Siltsack® sediment control device as directed by the Project Manager or as shown on the contract drawings. Siltsack sediment control device is manufactured by ACF Environmental, Inc., Richmond, VA.
- C. Siltsack shall be manufactured from a specially designed woven polypropylene geotextile manufactured by SI® Geosolutions and sewn by a double needle machine, using a high strength nylon thread.
- D. Siltsack® will be manufactured to fit the opening of the catch basin or drop inlet. Siltsack® will have the following features: two dump straps attached at the bottom to facilitate the emptying of Siltsack®; Siltsack® shall have lifting loops as an integral part of the system to be used to lift Siltsack® from the basin; Siltsack shall have a restraint cord approximately halfway up the sack to keep the sides away from the catch basin walls, this yellow cord is also a visual means of indicating when the sack should be emptied. Once the strap is covered with sediment, Siltsack® should be emptied, cleaned, and placed back into the basin.
- E. Siltsack® seams shall have a certified average wide width strength per ASTM D-4884 standards as follows:

Siltsack®K Style	Test Method	Test Method
Regular Flow	ASTM D-4884	165.0 lbs./in
Siltsack® Regular Flow		
Property	Test Method	Test Results
Grab Tensile	ASTM D-4632	315x300 lbs.
Grab Elongation	ASTM D-4632	15x15%
Puncture	ASTM D-4833	125 lbs.
Mullen Burst	ASTM D-3786	650 P.S.I.
Trapezoid Tear	ASTM D-4533	120x150 lbs.
UV Resistance	ASTM D-4355	90%
Apparent Opening	ASTM D-4751	40 (US Sieve)
Flow Rate	ASTM D-4491	40 Gal/Min/Ft2
Permittivity	ASTM D-4491	0.55 sec -1
All properties are Minimum Average Roll Values (MARV)		

PART 3 - EXECUTION

3.01 PROVISIONS FOR CONTROL OF EROSION

- A. The Contractor shall take sufficient precautions during construction to minimize the run-off of polluting substances such as silt, clay, fuels, oils, bitumens, calcium chloride, or other polluting materials harmful to humans, fish, or other life, into the water supplies and surface waters. Special precautions shall be taken in the use of construction equipment to prevent operations which promote erosion.

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- B. Erosion control provisions shall meet or exceed the requirements of the Local Conservation Commission.
- C. Contractor shall not permit sediment laden waters to enter drainage facilities. Special attention shall be given to areas for proposed stormwater infiltration systems.
- D. As construction progresses and seasonal conditions dictate, more siltation control facilities may be required. It shall be the responsibility of the Contractor to address new conditions that may be created and to provide additional facilities over the above minimum requirements as may be required.
- E. Measures for control of erosion must be adequate to assure that turbidity in the receiving water will not be increased more than 10 nephelometric turbidity units (NTU's), or as otherwise required by the State or other controlling body, in waters used for public supply or fishing unless other limits have been established for the particular water. In surface water used for other purposes, the turbidity must not exceed 50 NTU unless otherwise permitted.
- F. As a minimum, the following shall apply:
 - 1. In cross country areas, trees may be cut whenever desired, but brush and stumps shall not be removed until 1 week prior the start of construction in that area. The existing ground surface shall be disturbed as little as possible prior to the start of construction.
 - 2. Inlet sediment control devices shall be provided as shown on the Drawings or as otherwise required to reduce the sediment content of the water. Sufficient bales of hay shall be provided such that all flow will filter through the hay. Other methods which reduce the sediment content to an equal or greater degree may be used as approved by the Project Manager.
 - 3. Drainage leaving the Site shall flow to water courses in such a manner to prevent erosion.
 - 4. Loaming and seeding or mulching of cross country areas shall take place as soon as practicable but not contrary to the requirements specified in Section 02930.
 - 5. Contractor is responsible for monitoring and maintaining and/or replacing erosion control measures as appropriate.

3.02 EXISTING DRAINAGE FACILITIES

- A. Install Inlet Sediment Control Devices at catch basin inlets to manmade storm drain systems. Contractor shall be responsible for acquiring and installing correctly sized product.
- B. Should a storm sewer or culvert become blocked or have its capacity restricted due to discharge siltation from Contractor's operations, the Contractor shall make arrangements with the jurisdictional agency for the cleaning of the facility at no additional expense to the Owner.

3.03 DRAINAGE DIVERSION

- A. Contractor shall divert the surface runoff water around the site as may be required.
- B. Drainage shall be restored to condition existing prior to construction unless otherwise shown on the Drawings.

END OF SECTION

EROSION AND SEDIMENTATION CONTROLS

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SECTION 32 12 16
ASPHALT PAVING

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Include GENERAL CONDITIONS and SUPPLEMENTARY CONDITIONS as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with trades affecting, or affected by, work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

1.02 WORK INCLUDED

- A. Provide all equipment and materials, and do all work necessary to construct the bituminous concrete paving and walks, including new pavement and repairs to existing pavement following curb installation, as indicated on the Drawings and as specified.

1.03 RELATED WORK

- A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that relate directly to work of this Section include, but are not limited to:
 - 1. Earthwork
 - 2. Chain Link Fences and Gates
 - 3. Turf and Grasses

1.04 REFERENCES

- A. Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.
 - 1. American Association of State Highway and Transportation Officials (AASHTO):

M 20	Penetration Graded Asphalt Cement
M 81	Cut-Back Asphalt (Rapid Curing Type)
M 140	Emulsified Asphalt
 - 2. American Society for Testing and Materials (ASTM):

D 979	Sampling Bituminous Paving Mixtures
D 1557	Moisture-Density Relations of Soils and Soil Aggregate Mixtures Using 10-lb. (4.54-kg) Rammer and 18-in. (475-mm) Drop
D 3549	Thickness or Height of Compacted Bituminous Paving Mixture Specimens
D 1188	Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Paraffin-Coated Specimens

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D 2041	Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
D 2726	Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Saturated Surface-Dry Specimens
D 2950	Density of Bituminous Concrete in Place by Nuclear Methods

3. Rhode Island Department of Transportation (RIDOT):

Specifications	Standard Specifications for Road and Bridge Construction, Latest Edition
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4. Federal Specifications (Fed. Spec.):

SS-S-1401	Sealing Compound, Hot Applied, for Concrete and Asphalt Pavements
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1.05 ADA COMPLIANCE

A. Special attention is to be given to compliance with the Americans with Disabilities Act (ADA). Refer to applicable sections of the 2010 ADA Standards for Accessible Design (2010 Standards for Title II and III Facilities: 2004 ADAAG, Chapter 4 Accessible Routes).

1. **Slope:** All **Accessible Routes** shall be constructed with a maximum running slope (parallel to the direction of travel) of 1:20, or 5.0%. The cross slope (perpendicular to the direction of travel) for all accessible routes shall be constructed with a maximum slope of 1:50, or 2.0%. All **Curb Cuts** shall be constructed with a maximum ramp running slope (parallel to the direction of travel) of 1:12, or 8.33%. The maximum slope of the flared sides of the curb cut shall be 1:10, or 10%. The cross slope (perpendicular to the direction of travel) for all curb cuts shall be constructed with a maximum slope of 1:50, or 2.0%. All **Walkways** shall be constructed with a maximum running slope (parallel to the direction of travel) of 1:20, or 5.0%. The cross slope (perpendicular to the direction of travel) for all walkways shall be constructed with a maximum slope of 1:50, or 2.0%. All **Ramps** shall be constructed with a maximum running slope (parallel to the direction of travel) of 1:12, or 8.33%. The cross slope (perpendicular to the direction of travel) for all ramps shall be constructed with a maximum slope of 1:50, or 2.0%.
2. **Width:** All **Accessible Routes** shall be constructed with a minimum clear width of 36 inches. All **Curb Cuts** shall be constructed with a minimum width of 36 inches, exclusive of flared sides. Flared sides of curb cuts shall extend at least 24 inches at the curb. All **Walkways** shall be constructed with a minimum width of 48 inches, excluding curb stones. An unobstructed path of travel shall be provided with a minimum clear width of 36 inches, excluding curb stones. All **Ramps** shall be constructed with a minimum clear width of 48 inches, measured between the railings.
3. The Contractor should assume that all Accessible Route, Walkway, Curb Cut, and Ramp grades will be verified for slope compliance by the Landscape Architect or Owner's Representative with a 2-foot long electronic "Smart Level". Non-compliant portions of these elements will be removed and reinstalled by the Contractor at no additional cost to the Owner until all slopes and widths are in compliance with the maximum slopes outlined herein.
4. The above requirements shall supersede the grades shown on the plans. If these requirements cannot be met with the grades shown on the plans, the Landscape Architect shall be notified immediately for direction.

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- B. The location and construction of all accessible curb cuts shall be reviewed and approved by the Town or City Engineer prior to construction.

1.06 QUALITY ASSURANCE

- A. Unless otherwise specified, work and materials for construction of the asphaltic concrete paving shall conform to the applicable portions of the following:
 - 1. RIDOT Specifications Part 400.
- B. Paving work, base course etc., shall be done only after excavation and construction work which might injure them has been completed. Damage caused during construction shall be repaired before acceptance.
- C. Repair and replace existing paving areas damaged and removed during this Project. Workmanship and materials for such repair and replacement shall match those employed in existing work, except as otherwise noted.
- D. Pavement subbase shall not be placed on a muddy or frozen subgrade.
- E. Existing pavement under state or local jurisdiction shall, if damaged or removed during the course of this project, be repaired or replaced under this section of the specification in conformance with applicable codes, standards, and practices.

1.07 TESTING AND INSPECTION

- A. The Owner reserves the right to retain an independent testing laboratory to perform inspection and testing of paving and associated work.

PART 2 PRODUCTS

2.01 AGGREGATE BASE COURSE

- A. Material for aggregate base course shall be a Sand and Gravel or Crushed Stone as specified in Section 31 20 00 - EARTHWORK.

2.02 ASPHALTIC CONCRETE

- A. Asphaltic concrete shall be a standard plant-mixed, hot-laid paving material for road work, consisting of clean, crushed rock aggregate, mineral filler, and asphalt in accordance with RIDOT Specifications Part 400, except as modified herein. The master range composition tolerances for bituminous concrete materials shall be as follows:

**Table A (As modified)
Percent by Weight Passing Square Opening Sieves**

<u>Standard Sieve Size</u>	<u>Binder Course</u>	<u>Top Course</u>	<u>Dense Mix</u>
1 in.	100		
3/4 in.	80-100		
5/8 in.		100	
1/2 in.	55-80	95-100	100
3/8 in.		80-100	80-100*
No. 4	28-50	50-76	55-80

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No. 8	20-38	37-54	48-63
No. 16		26-40	36-49
No. 30	8-22	17-29	24-38
No. 50	5-15	10-21	14-27
No. 100		5-16	6-18
No. 200	0-5	2-7	4-8
Bitumen	4.5-5.5	5.5-7.0	7-8

* For dense mix the maximum aggregate size allowable shall be 3/8 in.

AASHTO M20.

1. Binder or bottom course paving for roadways and parking lots shall have maximum aggregate size passing 1 in. sieve, and bitumen content of 5% \pm 1/2% by weight.
 2. Top or wearing course paving for roadways and parking lots shall have maximum aggregate size passing 5/8 in. sieve, and bitumen content of 6-1/2% \pm 1/2 % by weight.
 3. Top or wearing course paving for sidewalks shall conform to composition for "Dense Mix".
- B. Complete job mix formula, listing quantities and pertinent ingredient properties, shall be submitted to and approved by the Design Agent at least two weeks before work is scheduled to begin.
- 2.03 BITUMINOUS MATERIALS
- A. Bituminous material for prime coat shall be one of the following:
1. Cut-back asphalt (rapid-curing type) conforming to AASHTO M 81, Grade RC-70 or RC-250.
 2. Emulsified asphalt rapid-setting type conforming to AASHTO M 140, Grade RS-1.
- B. Bituminous material for tack coat shall be emulsified asphalt rapid-setting type conforming to AASHTO M 140, Grade RS-1.
- C. Bitumen shall be a rapid-setting type emulsified asphalt conforming to AASHTO M 140, Grade RS-1.
- D. Bituminous crack sealer shall be a hot-applied bituminous sealer conforming to Fed. Spec. SS-S-1401.

PART 3 EXECUTION

3.01 GRADING

- A. Areas to receive bituminous concrete paving will be compacted and brought to subgrade elevation, and have aggregate base course furnished and installed under Section 31 20 00 - EARTHWORK before work of this section is performed. Final fine grading and bituminous concrete paving as required to form a firm, uniform, accurate, and unyielding bituminous concrete paving at required elevations and to required lines, shall be done under this Section and reviewed by the Engineer prior to the placement of final paving materials..
- B. Where excavation must be performed in completed gravel base, subsequent backfill and compaction shall be performed as directed by the Engineer as specified in Section 31 20 00 - EARTHWORK. Completed gravel base after filling such areas shall be uniformly and

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properly graded and compacted as specified in Section 31 20 00 - EARTHWORK.

- C. Aggregate base course shall be kept clean and uncontaminated. Less select materials shall not be permitted to become mixed with gravel. Materials spilled outside stone paving lines shall be removed and area repaired.
- D. Portions of base course which become contaminated, softened, or dislodged by passing of traffic, or otherwise injured, shall be cleaned, replaced, recompact, or otherwise repaired to conform to the requirements of this specification before proceeding with next operation.

3.02 SURFACE PREPARATION

- A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving.
 - 1. Sweep loose granular particles from surface of unbound-aggregate base course. Do not dislodge or disturb aggregate embedded in compacted surface of base course.
- B. Prime Coat: Apply uniformly over surface of compacted unbound-aggregate base course at a rate of 0.15 to 0.50 gal./sq. yd. (0.7 to 2.3 L/sq. m). Apply enough material to penetrate and seal but not flood surface. Allow prime coat to cure for 72 hours minimum.
 - 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.

3.03 ASPHALTIC PAVING

- A. Asphaltic paving mixture, equipment, methods of mixing and placing, and precautions to be observed as to weather, condition of base, etc., shall conform to RIDOT Specifications Part 400.
 - 1. Binder course and wearing course shall have aggregate and bitumen content mix design capable of producing a pavement permeable to 20 to 60 inches per hour.
- B. Complete job mix formula, listing quantities and pertinent ingredient properties, shall be submitted to and approved by Design Agent at least two weeks before work is scheduled to begin.
- C. Asphaltic binder and wearing surface courses shall each be applied individually, in single lifts of full thickness indicated on the Drawings.
- D. Work shall not be performed during rainy weather or when temperature is less than 40° F.
- E. Adjacent concrete work, etc., shall be protected from stain and damage during entire operation. Damaged and stained areas shall be replaced or repaired to equal their original condition.
- F. Deliveries shall be timed to permit spreading and rolling all material during daylight hours, unless artificial light, satisfactory to the Design Agent, is provided. Loads which have been wet by rain or otherwise will not be accepted. Hauling over freshly laid or rolled material will not be permitted.

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- G Placing and rolling of mixture shall be as nearly continuous as possible. Rolling shall begin as soon after placing as mixture will bear the operation without undue displacement. Delays in rolling freshly spread mixture will not be permitted. Rolling shall proceed longitudinally, starting at edge of newly placed material and proceeding toward previously rolled areas. Rolling overlap on successive strips shall be greater than or equal to 1/2 width of roller rear wheel. Alternate trips of roller shall be of slightly different lengths. Corrections required in surface shall be made by removing or adding materials before rolling is completed. Skin patching of areas where rolling has been completed will not be permitted. Course shall be subjected to diagonal rolling, crossing lines of the first rolling while mixture is hot and in compactible condition. Displacement of mixture or other fault shall be corrected at once by use of rakes and application of fresh mixture or removal of mixture, as required. Rolling of each course shall be continued until roller marks are eliminated. Roller shall pass over unprotected edge of course only when paving is to be discontinued for sufficient time to permit mixture to become cold.
- H. In places not accessible to roller, mixture shall be compacted with hand tampers. Hand tampers shall weigh at least 50 lb. and shall have a tamping face less than or equal to 100 sq. in. Mechanical tampers capable of equal compaction will be acceptable in areas in which they can be employed effectively.
- I. Portions of pavement courses which become mixed with foreign material or are in any way defective shall be removed, replaced, replaced with fresh mixture, and compacted to density of surrounding areas. Asphaltic material spilled outside lines of finished pavement shall be immediately and completely removed. Such material shall not be employed in the work.
- J. Joints shall present same texture, density, and smoothness as other sections of the course. Continuous bond shall be obtained between portions of existing and new pavements and between successive placements of new pavement. New material at joints shall be thick enough to allow for compaction when rolling. Compaction of pavement, base, and subgrade at joints shall be such that there is no yielding of new pavement relative to existing pavement when subjected to traffic. Construct joints to ensure a continuous bond between adjoining paving sections. Construct joints free of depressions with same texture and smoothness as other sections of hot-mix asphalt course.
1. Clean contact surfaces and apply tack coat to joints.
 2. Offset longitudinal joints, in successive courses, a minimum of 6 inches (150 mm).
 3. Offset transverse joints, in successive courses, a minimum of 24 inches (600 mm).
 4. Construct transverse joints as described in AI MS-22, "Construction of Hot Mix Asphalt Pavements."
 5. Compact joints as soon as hot-mix asphalt will bear roller weight without excessive displacement.
 6. Compact asphalt at joints to a density within 2 percent of specified course density.
- K. Contact surfaces of previously constructed pavement (if greater than or equal to seven days since binder placed), manholes, and similar structures shall be thoroughly cleaned and painted with a thin uniform coating of bitumen immediately before fresh mixture is placed. Tack coat shall be applied at rate which will leave asphaltic residue of 5 to 7 gal./100 yd.² after evaporation of vehicle. Base surface shall be dry and clean when tack coat is applied. Asphaltic paving material shall not be placed until vehicle has completely evaporated from tack coat. Adjoining new paving shall be placed before tack coat has dried or dusted over.
- L. Earth or other approved material shall be placed along pavement edges in such quantity as will compact to thickness of course being constructed, allowing at least 1 ft. of shoulder width to be rolled and compacted simultaneously with rolling and compacting surface. Pavement edge shall be trimmed neatly to line before placing earth or other approved

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material along edge.

1. After final rolling, vehicular traffic shall not be permitted on pavement until it has cooled and hardened, and in no case less than six hours.
- M. Variations in smoothness of finished surface shall be less than or equal to the following tolerances when tested with a 10 ft. straightedge, applied both parallel to and at right angles to centerline of paved area.
1. For roadway and parking pavement surface course - 1/4 in. in 10 ft.
 2. For sidewalk pavement surface course - 1/4 in. in 10 ft.
 3. At joint with existing pavement, and at other locations where an essentially flush transition is required, pavement elevation tolerance shall not exceed 0.01 ft.
 4. At other areas pavement elevation tolerance shall not exceed ± 0.05 ft.
 5. Irregularities exceeding these amounts or which retain water on surface shall be corrected by removing defective work and replacing with new material conforming to this Section.

3.04 REPAIRS TO EXISTING PAVEMENT

- A. Subgrade shall be done in strict accordance with Paragraph 3.01, above.
- B. Aggregate base course shall be replaced in strict conformance with Paragraph 3.02, above.
- C. Asphaltic concrete paving mixture, equipment, and methods of mixing and placing shall conform to RIDOT Specifications Part 400.

3.05 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections and to prepare test reports.
 1. Testing agency will conduct and interpret tests and state in each report whether tested Work complies with or deviates from specified requirements.
- B. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
- C. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined according to ASTM D 3549.
- D. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.
- E. Revise methods of verifying field compaction if using the Superpave mix design system. Consult state or local DOT for methods that have been successfully used.
- F. In-Place Density: Testing agency will take samples of uncompacted paving mixtures and compacted pavement according to ASTM D 979.
 1. Reference maximum theoretical density will be determined by averaging results from four samples of hot-mix asphalt-paving mixture delivered daily to site, prepared according to ASTM D 2041, and compacted according to job-mix specifications.
 2. In-place density of compacted pavement will be determined by testing core samples according to ASTM D 1188 or ASTM D 2726.
 - a. One core sample will be taken for every 1000 sq. yd. (836 sq. m) or less of

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- installed pavement, with no fewer than 3 cores taken.
- b. Field density of in-place compacted pavement may also be determined by nuclear method according to ASTM D 2950 and correlated with ASTM D 1188 or ASTM D 2726.

END OF SECTION

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SECTION 32 13 13
CONCRETE PAVING

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS and applicable parts of Division 1 as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with trades affecting, or affected by, work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

1.02 WORK INCLUDED

- A. Perform all work required to complete the work of the Section, as indicated. Such work includes, but is not limited to, the following:

- 1. Concrete bases for site furnishings

1.03 RELATED WORK UNDER OTHER SECTIONS

- A. Earthwork
- B. Site Furnishings
- C. Lawns and Grasses

1.04 REFERENCES

- A. Work shall conform to codes and standards of the following:
 - 1. Rhode Island Department of Transportation - Standard Specifications for Road and Bridge Construction (RIDOT Specifications), Latest Edition.
 - 2. American Concrete Institute (ACI):
 - 301 Specifications for Structural Concrete for Buildings
 - 305R Hot Weather Concreting
 - 306R Cold Weather Concreting
 - 316R Recommendations for Construction of Concrete Pavements and Concrete Bases.
 - 3. American Society for Testing and Materials (ASTM):
 - A 185 Welded Steel Wire Fabric for Concrete Reinforcement
 - C 33 Concrete Aggregates
 - C 94 Ready-Mixed Concrete
 - C 143 Slump of Portland Cement Concrete
 - C 150 Portland Cement
 - C 171 Sheet Materials for Curing Concrete
 - C 231 Air Content of Freshly Mixed Concrete by the Pressure Method
 - C 260 Air Entraining Admixtures for Concrete
 - C 309 Liquid Membrane-Forming Compounds for Curing Concrete

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- C 494 Chemical Admixtures for Concrete
- D 226 Asphalt-Saturated Organic Roofing Felt for Use in Membrane Waterproofing and Built-Up Roofing
- D 1557 Moisture - Density Relations of Soils and Soil Aggregate Mixtures Using 10 lb. (4.54-kg) Rammer and 18-in. (457 mm) Drop
- D 1752 Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction

- 4. Americans with Disabilities Act (ADA): 2010 ADA Standards for Accessible Design. See Section 1.06.

1.05 QUALITY ASSURANCE

- A. Unless otherwise specified, work and materials for construction of the Portland cement concrete paving shall conform to ACI 316R.
- B. Paving work, base course etc., shall be done only after excavation and construction work which might injure them have been completed. Damage caused during construction shall be repaired before acceptance.
- C. Existing paving areas shall, if damaged or removed during course of this project, be repaired or replaced under this section of the specification. Workmanship and materials for such repair and replacement, except as otherwise noted, shall match as closely as possible those employed in existing work.
- D. Pavement, base, or sub-base shall not be placed on a muddy or frozen sub-grade.
- E. The Owner reserves the right to retain an independent testing laboratory to perform inspection and testing of paving and associated work.

1.06 ADA COMPLIANCE

- A. Special attention is to be given to compliance with the Americans with Disabilities Act (ADA). Refer to applicable sections of the 2010 ADA Standards for Accessible Design (2010 Standards for Title II and III Facilities: 2004 ADAAG, Chapter 4 Accessible Routes).
 - 1. **Slope:** All **Accessible Routes** shall be constructed with a maximum running slope (parallel to the direction of travel) of 1:20, or 5.0%. The cross slope (perpendicular to the direction of travel) for all accessible routes shall be constructed with a maximum slope of 1:50, or 2.0%. All **Curb Cuts** shall be constructed with a maximum ramp running slope (parallel to the direction of travel) of 1:12, or 8.33%. The maximum slope of the flared sides of the curb cut shall be 1:10, or 10%. The cross slope (perpendicular to the direction of travel) for all curb cuts shall be constructed with a maximum slope of 1:50, or 2.0%. All **Walkways** shall be constructed with a maximum running slope (parallel to the direction of travel) of 1:20, or 5.0%. The cross slope (perpendicular to the direction of travel) for all walkways shall be constructed with a maximum slope of 1:50, or 2.0%. All **Ramps** shall be constructed with a maximum running slope (parallel to the direction of travel) of 1:12, or 8.33%. The cross slope (perpendicular to the direction of travel) for all ramps shall be constructed with a maximum slope of 1:50, or 2.0%.
 - 2. **Width:** All **Accessible Routes** shall be constructed with a minimum clear width of 36 inches. All **Curb Cuts** shall be constructed with a minimum width of 36 inches, exclusive of flared sides. Flared sides of curb cuts shall extend at least 24 inches at the curb. All **Walkways** shall be constructed with a minimum width of 48 inches, excluding curb stones. An unobstructed path of travel shall be provided with a

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- minimum clear width of 36 inches, excluding curb stones. All *Ramps* shall be constructed with a minimum clear width of 48 inches, measured between the railings.
3. The Contractor should assume that all Accessible Route, Walkway, Curb Cut, and Ramp grades will be verified for slope compliance by the Landscape Architect or Owner's Representative with a 2-foot long electronic "Smart Level". Non-compliant portions of these elements will be removed and reinstalled by the Contractor at no additional cost to the Owner until all slopes and widths are in compliance with the maximum slopes outlined herein.
 4. The above requirements shall supersede the grades shown on the plans. If these requirements cannot be met with the grades shown on the plans, the Landscape Architect shall be notified immediately for direction.
- B. The location and construction of all accessible curb cuts shall be reviewed and approved by the Town or City Engineer prior to construction.

1.07 SUBMITTALS

- A. Submit manufacturer's product data for the following:
1. Preformed joint filler.
- B. Submit samples of the following:
1. For cement concrete paving show expansion joints, tooling and finish. Minimum 6' x 6' sample panel.
 2. Preformed joint filler.

PART 2 - PRODUCTS

2.01 AGGREGATE BASE COURSE

- A. Material for aggregate base course shall be a graded, granular, non-frost susceptible, free-draining material, consisting of either durable stone and coarse sand or of blast furnace slag, practically free from loam and clay, and which can be readily compacted to form a stable foundation.
1. Material for aggregate base shall conform to the applicable section of RIDOT Specifications Division III, Part M, Materials, Section M.01.
 2. Material for gravel subbase shall conform to the applicable section of RIDOT Specifications Division III, Part M, Materials, Section M.01.

2.02 STEEL REINFORCEMENT

- A. Welded wire fabric reinforcement shall conform to the applicable requirements of ASTM A 185. Fabric reinforcement shall be furnished in flat sheets. Fabric reinforcement in rolls will not be permitted.

2.03 PORTLAND CEMENT CONCRETE

- A. Portland cement concrete for pavements and slabs shall be air-entrained type with a maximum water-cement ratio of 5.0 conforming to ACI 316R. Minimum compressive strengths at 28 days shall be as follows: Flexural strength with third point loading - 650 psi; compressive strength - 4000 psi.

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1. Concrete shall be air-entrained type, conforming to ASTM C 94. Air content by volume shall be 6% ± 1%, and shall be tested in accordance with ASTM C 231.
2. Concrete slump shall be no less than 2 in. nor greater than 4 in., determined in accordance with ASTM C 143.
3. Cement shall be Portland cement, conforming to ASTM C 150, Type I or II. Only one color of cement, all of the same manufacturer, shall be used for the work. Type III cement shall be used only with the prior approval of the Landscape Architect.
4. Fine and coarse aggregates shall conform to ASTM C 33.
5. Concrete shall contain a water reducing agent to minimize cement and water content of the concrete mix at the specified slump. Water reducing agent shall conform to ASTM C 494.
6. No calcium chloride or admixtures containing calcium chloride shall be added to the concrete. No admixtures other than those specified shall be used in the concrete without the specific written permission of the Landscape Architect in each case.

2.04 CURING MATERIALS

- A. Curing shall be by moist curing or by use of curing compound.
- B. Curing paper shall be nonstaining, fiber reinforced laminated kraft bituminous product conforming to ASTM C 171. Four mil polyethylene sheeting may be substituted for curing paper.
- C. Curing compound shall be a resin-base, white pigmented compound conforming to ASTM C 309, Type 2.

2.05 EXPANSION JOINTS

- A. Unless otherwise indicated on the Itemized Scope of Work and Supporting Documents, expansion joints shall be located 30 ft. o.c., maximum.
- B. Expansion joint filler shall be preformed, nonbituminous type joint filler conforming to ASTM D 1752, Type II, similar to Sealtight Cork Expansion Joint Filler, manufactured by W.R. Meadows, Inc., Elgin, IL 60120, or approved equal. Available equal manufacturers may consist of APS Supply Co., Inc., Beverly, NJ 08010, www.apscork.com or J & K Foam Fabricating, Inc., Pottstown, PA 19464, jkfoamfab.com.
 1. Premolded filler shall be one piece for the full depth and width of the joint leaving a sealant recess as indicated.
 2. Use of multiple pieces of lesser dimensions to make up required depth and width of joint will not be permitted.
 3. Except as otherwise noted on the Itemized Scope of Work and Supporting Documents, joint filler shall be 1/2 in. thick.

2.06 CONTROL JOINTS

- A. All Control joints indicated on the plans shall be saw cut, unless specifically otherwise indicated. Control joints shall cut into slab at least 1 in., but in no case less than 25% of slab depth.

2.07 CONSTRUCTION JOINTS

- A. Transverse construction joints shall be placed whenever placing of concrete is suspended for more than 30 minutes.

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1. Butt joint with dowels or thickened edge joint shall be used if construction joints occurs at location of control joint.
2. Keyed joints with tiebars shall be used if the joint occurs at any other location.

2.08 GROUT

- A. Grout shall be mixed in the proportions of one part Portland cement to two parts sand, by volume. Only sufficient water shall be used to enable grout to barely hold its shape when squeezed into a ball in the hand. Sand for grout shall be "Fine Aggregate", conforming to ASTM C 33.
- B. Nonshrink grout shall be pre-mixed non-shrinking, high strength grout. Compressive strength in 28 days shall be 5,000 psi minimum, but in no case less than the specified strength of the adjacent concrete. Manufacturer shall provide evidence that the material meets the requirements of the COE CRDC 621 (558). Grout permanently exposed to view shall be nonoxidizing; metallic grout may be used in other locations.

1. Nonshrink grout shall be one of the following, or approved equal:

<u>Manufacturer</u>	<u>Product</u>
Gifford-Hill Co.	Supreme
Master Builders Co.	Embeco
U.S. Grout Corporation	Five Star Grout

2.09 BOND BREAKER

- A. Bond breaker shall be asphalt felt conforming to ASTM D 226, Type I or 6 mil polyethylene sheeting.

PART 3 - EXECUTION

3.01 PREPARATION OF SUBGRADE

- A. Areas to be paved will be compacted and brought to subgrade elevation before work of this section is performed. Final fine grading, filling, and compaction of areas to receive paving, as required to form a firm, uniform, accurate, and unyielding subgrade at required elevations and to required lines, shall be done under this Section.
- B. Existing subgrade material which will not readily compact as required shall be removed and replaced with satisfactory materials. Additional materials needed to bring subgrade to required line and grade and to replace unsuitable material removed shall be material conforming to this Section.
- C. Subgrade of areas to be paved shall be recompacted as required to bring top 8 in. of material immediately below gravel base course to a compaction at optimum moisture of at least 95% of maximum density, as determined by ASTM D 1557. Subgrade compaction shall extend for a distance of at least 1 ft. beyond pavement edge.
- D. Excavation required in pavement subgrade shall be completed before fine grading and final compaction of subgrade are performed. Where excavation must be performed in completed subgrade, subbase, base, or pavement, subsequent backfill and compaction shall be performed as directed by the Landscape Architect. Completed subgrade after filling such areas shall be uniformly and properly graded.

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- E. Areas being graded or compacted shall be kept shaped and drained during construction. Ruts greater than or equal to 2 in. deep in subgrade, shall be graded out, reshaped as required, and recompacted before placing pavement.
- F. Materials shall not be stored or stockpiled on subgrade.
- G. Disposal of debris and other material excavated under this section, and material unsuitable for or in excess of requirements for completing work of this section shall be disposed of off-site.
- H. Prepared subgrade will be inspected by the Landscape Architect. Subgrade shall be approved by the Landscape Architect before installation of gravel base course. Disturbance to subgrade caused by inspection procedures shall be repaired under this section of the specification.

3.02 AGGREGATE BASE COURSE

- A. Aggregate base course for paving and the spreading, grading, and compaction methods employed shall conform to RIDOT Specifications Part 300, Aggregate and Gravel Base and Subbase Courses.
- B. Width of base course shall be greater than or equal to the width of pavement surface, if continuous lateral support is provided during rolling, and shall extend at least 2 x base thickness beyond edge of the course above, if not so supported.
- C. Aggregate material shall be applied in lifts less than or equal to 6 in. thick, compacted measure. Each lift shall be separately compacted to specified density, using a 6 ton steel wheel roller or vibratory roller equivalent to a 6 ton static roller, or an approved equivalent.
 - 1. Material shall be placed adjacent to wall, manhole, catch basin, and other structures only after they have been set to required grade and level.
 - 2. Rolling shall begin at sides and progress to center of crowned areas, and shall begin on low side and progress toward high side of sloped areas. Rolling shall continue until material does not creep or wave ahead of roller wheels.
 - 3. Surface irregularities which exceed 1/2 in. as measured by means of a 10 ft. long straightedge, shall be replaced and properly recompacted.
- D. Base course shall be compacted at optimum moisture content to not less than 95% of maximum density as determined by ASTM D 1557.
- E. Subgrade and base course shall be kept clean and uncontaminated. Less select materials shall not be permitted to become mixed with gravel. Materials spilled outside pavement lines shall be removed and area repaired.
- F. Portions of subgrade or of construction above which become contaminated, softened, or dislodged by passing of traffic, or otherwise injured, shall be cleaned, replaced, or otherwise repaired to conform to the requirements of this specification before proceeding with next operation.

3.03 STEEL REINFORCEMENT

- A. Before being placed in position, reinforcing for reinforced concrete shall be thoroughly cleaned of loose mill and rust scale, dirt, ice, and other foreign material which may reduce the bond between the concrete and reinforcing. Where there is delay in placing concrete after reinforcement is in place, bars shall be reinspected and cleaned when necessary.

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- B. Unless otherwise indicated on the Itemized Scope of Work and Supporting Documents, reinforcing shall extend within 2 in. of formwork and expansion joints. Reinforcing shall continue through control joints. Adjacent sheets of fabric reinforcing shall lap 6 in.
- C. After forms have been coated with form release agent, but before concrete is placed, reinforcing steel shall be securely wired in the exact position called for, and shall be maintained in that position until concrete is placed and compacted. Chair bars and supports shall be provided in a number and arrangement satisfactory to the Landscape Architect.

3.04 PORTLAND CEMENT CONCRETE PAVING

- A. Paving mix, equipment, methods of mixing and placing, and precautions to be observed as to weather, condition of base etc., shall meet the requirements of ACI 316R. Pavement shall be constructed in accordance with the Itemized Scope of Work and Supporting Documents.
- B. The Landscape Architect shall be notified of concrete placement sufficiently in advance of start of operation to allow his representative to complete preliminary inspection of the work, including subgrade, forms, and reinforcing steel, if used.
- C. Normal concrete placement procedures shall be followed. Concrete shall arrive at the jobsite so that no additional water will be required to produce the desired slump. When conditions develop that required addition of water to produce the desired slump, permission of the Landscape Architect must be obtained. The concrete shall be transported from the mixer to its place of deposit by a method that will prevent segregation or loss of material.
- D. Work shall not be performed during rainy weather or when forecast or overnight curing temperature is or will be less than 40 F. (4.4 C).
- E. Adjacent work, etc., shall be protected from stain and damage during entire operation. Damaged and stained areas shall be replaced or repaired to equal their original conditions.
- F. Existing concrete, earth, and other water-permeable material against which new concrete is to be placed shall thoroughly damp when concrete is placed. There shall be no free water on surface.
- G. Concrete which has set or partially set before placing shall not be employed. Retempering of concrete will not be permitted.
- H. Concrete shall be thoroughly spaded and tamped to secure a solid and homogeneous mass, thoroughly worked around reinforcement and into corners of forms.
- I. When joining fresh concrete to concrete which has attained full set, latter shall be cleaned of foreign matter, and mortar scum and laitance shall be removed by chipping and washing. Clean, roughened base surface shall be saturated with water, but shall have no free water on surface. A coat of 1:1 cement-sand grout, approximately 1/8 in. thick, shall be well scrubbed into thoroughly dampened concrete base. New concrete shall be placed immediately, before grout has dried or set.

3.05 FINISHING

- A. Concrete flatwork surfaces shall be screeded off and finished true to line and grade, and free of hollows and bumps. Surface shall be dense, smooth, and at exact level and slope required.
 - 1. Finished concrete surface for subbases shall be woodfloated to a slightly rough surface. Surface shall not deviate more than 1/4 in. in 10 ft.

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2. Finished concrete surface for concrete walks and pads shall be wood-floated and steel troweled to a smooth surface. Surface shall not deviate more than 1/8 in. in 10 ft. Tool all edges of concrete panels to be smooth.
- B. Unless otherwise indicated, horizontal surfaces of concrete surfaces which will be exposed shall be given a light broomed finish, with direction of grooves in concrete surface perpendicular to length of concrete band, slab, or pad. After concrete has set sufficiently to prevent coarse aggregate from being torn from surface, but before it has completely set, brooms shall be drawn across it to produce a pattern of small parallel grooves. Broomed surface shall be uniform, with no smooth, unduly rough or porous spots, or other irregularities. Coarse aggregate shall not be dislodged by brooming operation.
 - C. Immediately following finishing operations, arrises at edges and both sides of expansion joints shall be rounded to a 1/4 in. radius.
 - D. Where finishing is performed before end of curing period, concrete shall not be permitted to dry out, and shall be kept continuously moist from time of placing until end of curing period, or until curing membrane is applied.

3.06 CURING

- A. It is essential that concrete be kept continuously damp from time of placement until end of specified curing period. It is equally essential that water not be added to surface during floating and troweling operations, and not earlier than 24 hours after concrete placement. Between finishing operations surface shall be protected from rapid drying by a covering of waterproofing paper. Surface shall be damp when the covering is placed over it, and shall be kept damp by means of a fog spray of water, applied as often as necessary to prevent drying, but not sooner than 24 hours after placing concrete. None of the water so applied shall be troweled or floated into surface.
- B. Concrete surfaces shall be cured by completely covering with curing paper or application of a curing compound.
 1. Concrete cured using waterproof paper shall be completely covered with paper with seams lapped and sealed with tape. Concrete surface shall not be allowed to become moistened between 24 and 36 hours after placing concrete. During curing period surface shall be checked frequently, and sprayed with water as often as necessary to prevent drying, but not earlier than 24 hours after placing concrete.
 2. If concrete is cured with a curing compound, compound shall be applied at a rate of 200 sq. ft. per gallon, in two applications perpendicular to each other.
 3. Curing period shall be seven days minimum.

3.07 EXPANSION JOINTS

- A. Expansion joints shall be 1/2 in. wide and shall be as located 30' o.c. maximum or where new concrete slabs abut existing concrete slabs and vertical surfaces. Expansion joint shall be formed in the concrete to required width with preformed joint filler in place. Joint filler shall extend the full depth of the slab. Joint filler shall extend the full length of the expansion joint.
 1. For concrete pavements and pads, depth of joint filler shall be as required to form a 1-1/4 in. deep sealant and backer rod recess below finished concrete surface.

3.08 CONTROL JOINTS

- A. Control joints shall be placed to align with adjacent pavement jointing to the greatest extent practicable. If not indicated, tooled control joints shall be placed into the concrete slab every 5

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ft. o.c. maximum. Control joints will be saw cut as soon as the concrete is hard enough that the edges abutting the cut don't chip from the saw blade.

3.09 COLD WEATHER CONCRETING

- A. Cold Weather Concreting shall not be allowed.

3.10 HOT WEATHER CONCRETING

- A. Concrete just placed shall be protected from the direct rays of the sun and the forms and reinforcement just prior to placing shall be sprinkled with cold water. Every effort shall be made to minimize delays which will result in excessive mixing of the concrete after arrival on the job.
- B. During periods of excessively hot weather (95 F, or above), ingredients in the concrete shall be cooled insofar as possible and cold mixing water shall be used to maintain the temperature of the concrete at permissible levels all in accordance with the provisions of ACI 305. Any concrete with a temperature above 95 F, when ready for placement will not be acceptable, and will be rejected.
- C. Temperature records shall be maintained throughout the period of hot weather giving air temperature, general weather conditions (calm, windy, clear, cloudy, etc.) and relative humidity. Records shall include checks on temperature of concrete as delivered and after placing in forms. Data should be correlated with the progress of the work so that conditions surrounding the construction of any part of the structure can be ascertained.

3.11 PROTECTION OF CONCRETE SURFACES

- A. Concrete surfaces shall be protected from traffic or damage until surfaces have hardened sufficiently. If necessary 1/2 in. thick plywood sheets shall be used to protect the exposed surface.

END OF SECTION

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SECTION 32 31 13

CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include GENERAL CONDITIONS and SUPPLEMENTARY CONDITIONS as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with trades affecting, or affected by, work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

1.02 WORK INCLUDED

- A. Perform all work required to complete the work of the Section, as indicated. Such work includes, but is not limited to, the following:
 - 1. Chain Link Fences and Gates at Sacred Heart Park

1.03 RELATED WORK UNDER OTHER SECTIONS

- A. Earthwork
- B. Concrete Paving
- C. Asphalt Paving
- D. Turf and Grasses

1.04 REFERENCES

- A. ASTM - American Society for Testing and Materials
- B. Rhode Island Department of Transportation - Standard Specifications for Road and Bridge Construction (RIDOT Specifications), latest edition.

1.05 LAWS, ORDINANCES, PERMITS AND FEES

- A. The Contractor shall:
 - 1. Give necessary notices, obtain all permits and pay all Governmental taxes, fees and other costs in connection with this work, file all necessary plans, prepare documents and obtain all necessary approvals of the local Building Departments having jurisdiction.
 - 2. Obtain all required certificates of inspection for this work and deliver same to the Architect before request for acceptance and final payment for the work.
 - 3. Include in the work, without extra cost to the Owner, any labor, materials, services, apparatus, drawings (in addition to Contract Drawings and Documents) in order to comply with all applicable laws, ordinances, rules and regulations, whether or not shown on the Drawings and/or specified.

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1.06 QUALITY ASSURANCE

- A. **Installer Qualifications:** An experienced installer who has completed chain-link fences and gates similar in material, design, and extent to those indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
 - 1. **Engineering Responsibility:** Preparation of data for chain-link fences and gates, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.

- B. **Testing Agency Qualifications:** An independent agency, with the experience and capability to conduct the testing indicated, that is a member company of the International Electrical Testing Association or is a nationally recognized testing laboratory (NRTL) as defined by OSHA in 29 CFR 1910.7, and that is acceptable to authorities having jurisdiction
 - 1. **Testing Agency's Field Supervisor:** Person currently certified according to NETA ETT, or the National Institute for Certification in Engineering Technologies, to supervise on-site testing specified in Part 3.

- C. **Mockups:** Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects, and set quality standards for fabrication and installation.
 - 1. Include 10 ft. (3 m) length of fence and gate complying with requirements.
 - a. Approval of mockups is also for other material and construction qualities specifically approved by the Landscape Architect in writing.
 - b. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless such deviations are specifically approved by the Landscape Architect in writing.
 - 2. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

- D. **Pre-installation Conference:** Conduct conference at Project site.

1.07 SUBMITTALS

- A. **Shop Drawings:** Show locations of fences, gates, posts, rails, tension wires, details of extended posts, extension arms, gate swing, or other operation, hardware, and accessories. Indicate materials, dimensions, sizes, weights, and finishes of components. Include plans, gate elevations, sections, details of post anchorage, attachment, bracing, and other required installation and operational clearances. Shop Drawings under this section include, but are not limited to the following:
 - 1. Chain Link Fences and Gates

- B. **Product Data:** Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for chain-link fences and gates. Supply Certificates of Compliance for all materials required for fabrication and installation. Work includes but is not limited to the following items:
 - 1. Fence and gate posts, rails, and fittings.
 - 2. Chain-link fabric, reinforcements, and attachments.
 - 3. Gates and hardware.

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- C. Samples for Initial Selection: Manufacturer's color charts or 6-inch (150-mm) lengths of actual units showing the full range of colors available for components with factory-applied color finishes.
- D. Samples for Verification: For each type of chain-link fence and gate indicated:
 - 1. Polymer-coated steel wire (for fabric) in 6-inch (150-mm) lengths.
 - 2. Polymer coating, in 6-inch (150-mm) lengths on shapes for posts, rails, wires, and gate framing.
- E. Product Certificates: For each type of chain-link fence and gate, signed by product manufacturer.
 - 1. Strength test results for framing according to ASTM F 1043.
- F. Qualification Data: For Installer.
- G. Field quality-control test reports.
- H. Maintenance Data: For the following to include in maintenance manuals:
 - 1. Polymer finishes.

1.08 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide chain-link fences and gates capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
 - 1. Minimum Post Size and Maximum Spacing for Wind Velocity Pressure: Determine based on mesh size and pattern specified, and on the following minimum design wind pressures and according to CLFMI WLG 2445:
 - a. Wind Speed: 80 mph (129 km/h).
 - b. Fence Height: 4 feet (3 m).
 - c. Line Post Group: IA, ASTM F 1043, Schedule 40 steel pipe.
 - d. Wind Exposure Category: B.
- B. Lightning Protection System: Maximum grounding-resistance value of 25 ohms under normal dry conditions.

1.09 PROJECT 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.
- B. Interruption of Existing Utility Service: Do not interrupt utility services to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
 - 1. Notify Owner's Representative no fewer than two (2) days in advance of proposed interruption of utility services.
 - 2. Do not proceed with interruption of utility services without Owner's Representative's written permission.

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PART 2 - PRODUCTS

2.01 GENERAL

- A. The types of fencing required for the project are as indicated below, subject to detailed material requirements which follow.
- B. All material shall be new, and products of recognized reputable manufacturers. Used, re-rolled or re-galvanized materials are not acceptable.
- C. Like items of materials provided hereinafter shall be the end products of one manufacturer in order to achieve standardization for appearance, maintenance and replacement.

2.02 CHAIN LINK FENCE FABRIC

- A. General: Height as indicated on Drawings. Provide fabric in one-piece heights measured between top and bottom of outer edge of selvage knuckle or twist. Comply with ASTM A 392, CLFMI CLF 2445, and requirements indicated below:
 - 1. Steel Wire Fabric: Polymer coated wire with a diameter of 0.192 inch (4.88 mm) (6 Gauge – for use on lower portions of backstops) or 0.148 inch (3.76 mm) (9 Gauge – for use on 4', 6' and 10' height fencing and upper portions of backstops).
 - a. Mesh Size: 2 inches (50 mm).
 - b. Weight of Metallic (Zinc) coating: ASTM A 392, Type II, Class 1, 1.2 oz./sq. ft. (366 g/sq. m) with zinc coating applied after weaving or 0.8 oz./sq. ft. (244 g/sq. m) with zinc coating applied after weaving.
 - c. Polymer Coating: ASTM F 668, Class 2b over metallic coated steel wire.
 - 1) Color: As selected by Landscape Architect from Manufacturer's full range, complying with ASTM F 934.
 - d. Coat selvage ends of fabric that is metallic coated before the weaving process with manufacturer's standard clear protective coating.
 - 2. Selvage: Unless directed otherwise on the plans, fence fabric shall be knuckle selvaged at top and bottom.

2.03 4 FOOT HEIGHT FENCE AND GATE FRAMING

- A. Posts and Rails: Round cold-formed, electric-resistance-welded, steel pipe or tubing, with minimum yield strength of 45,000 psi (310 MPa) and with outside dimension, minimum wall thickness, and weight complying with ASTM F 761 or ASTM F 654 for the following fence height and strength and stiffness requirements:
 - 1. Fence Height: 4 feet.
 - 2. Duty Rating: Medium.
 - 3. Tube or Pipe Diameter and Thickness: According to ASTM F 761.
 - 4. Tube Size and Thickness: According to ASTM F 654.
 - a. Top Rail: 1.66 inches (42 mm).
 - b. Line Post: 1.90 inches (48 mm).
 - c. Terminal Post: 2.375 inches (60 mm).

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- d. Gate Post: 2.375 inches (60 mm).
- e. Tube or Pipe Thickness: 0.065 inches (1.7 mm).

5. Gate: Comply with ASTM F 654 and the following:

- a. Type: I, single swing frame tubing.
- b. Fabric Height: 2 inches (50 mm) less than adjacent fence height.
- c. Leaf Width: As indicated.
- d. Gate Frame: 1.66 inches (42 mm).

6. Hardware: Latches permitting operation from both sides of gate, and hinges.

7. Metallic-Coated Steel: Posts, rails, and frames protected with an external coating of not less than 0.6 oz. of zinc/sq. ft. (183 g of zinc/sq. m), a chromate conversion coating, and a clear, verifiable polymer film; with an internal protective coating of not less than 0.6 oz. of zinc/sq. ft. (183 g of zinc/sq. m) or 81 percent, not less than 0.3 mil (0.0076 mm) thick, zinc pigmented coating.

8. Polymer Coating Color: See 2.09 below.

2.04 TENSION WIRE

A. General: Provide horizontal tension wire at the following locations:

- 1. Location: Extended along bottom of fence fabric for 4' height fence.

B. Metallic-Coated Steel Wire: 0.177 inch (4.5 mm) diameter, marcelled tension wire complying with ASTM A 817, ASTM A 824, and the following:

- 1. Metallic Coating: Type II, zinc coated galvanized by hot dip process, with the following minimum coating weight:
 - a. Class 2: Not less than 1.2 oz./sq. ft. (366 g/sq. m) of uncoated wire surface.
- 2. Polymer Coating Color: See 2.09 below.

2.05 FITTINGS

A. General: Comply with ASTM F 626:

B. Post and Line Caps: Provide for each post.

- 1. Line post caps with loop to receive top rail.

C. Rail and Brace Ends: Attach rails securely to each gate, corner, pull, and end post.

D. Rail Fittings: Provide the following:

- 1. Top Rail Sleeves: Pressed steel or round-steel tubing not less than 6 inches (152 mm) long.
- 2. Rail Clamps: Line and corner boulevard clamps for connecting intermediate and bottom rails in the fence line-to-line posts.

E. Tension and Brace Bands: Pressed steel.

F. Tension Bars: Steel, length not less than 2 inches (50 mm) 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.

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- 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 Tie Wires: For attaching chain-link fabric to posts, rails, and frames, complying with the following:
 - a. Hot-Dip Galvanized Steel: 0.148 inch (3.76 mm) diameter wire; galvanizing 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. (366 g/sq. m) zinc.
 - 2. Polymer Coating Color: See 2.09 below.
- 2.06 CAST-IN-PLACE CONCRETE
- A. Materials: Portland cement complying with ASTM C 150, Type I aggregates complying with ASTM C 33, and potable water for ready-mixed concrete complying with ASTM C 94/C 94M.
 - 1. Concrete Mixes: Normal-weight concrete with not less than 4,000 psi compressive strength (28 days), 3 inch slump, and 1 inch maximum size aggregate.
- 2.07 GROUT AND ANCHORING CEMENT
- A. Nonshrink, Nonmetallic Grout: Premixed, factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout, recommended in writing by manufacturer, for exterior applications.
 - B. Erosion-Resistant Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with potable 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.
- 2.08 FENCE GROUNDING
- A. Conductors: Bare, solid wire for No. 6 AWG and smaller; stranded wire for No. 4 AWG and larger.
 - 1. Material above Finished Grade: Copper.
 - 2. Material on or below Finished Grade: Copper.
 - 3. Bonding Jumpers: Braided copper tape, 1 inch (25 mm) wide, woven of No. 30 AWG bare copper wire, terminated with copper ferrules.
 - B. Connectors and Grounding Rods: Comply with UL 467.
 - 1. Connectors for Below-Grade Use: Exothermic welded type.
 - 2. Grounding Rods: Copper-clad steel.
 - a. Size: 5/8 by 96 inches (16 by 2440 mm).

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2.09 POLYMER FINISHES

- A. Supplemental Color Coating: In addition to specified metallic coatings for steel, provide all fence components with polymer coating.
- B. Metallic-Coated Steel Tension Wire: PVC-coated wire complying with ASTM F 1664, Class 2b.
- C. Metallic-Coated Steel Framing and Fittings: Comply with ASTM F 626 and ASTM F 1043 for polymer coating applied to exterior surfaces and, except inside cap shapes, to exposed interior surfaces.
 - 1. Polymer Coating: Not less than 10 mil (0.254 mm) thick PVC or 3 mil (0.076 mm) thick polyester finish.
- D. Color: As specified by the Landscape Architect from the manufacturers standard color chart, complying with ASTM F 934.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, pavement work, and other conditions affecting performance.
 - 1. Do not begin installation before final grading is completed, unless otherwise permitted by Landscape Architect.
 - 2. Proceed with installation only after unsatisfactory conditions have been corrected

3.02 PREPARATION

- A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 500 feet (152.5 m) or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments

3.03 INSTALLATION, GENERAL

- A. Install chain link fencing to comply with ASTM F 567 and more stringent requirements specified.
 - 1. Install fencing on established boundary lines inside property line.

3.04 CHAIN LINK FENCE INSTALLATION

- A. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil.
- B. Post Setting: Set posts in concrete at indicated spacing into firm, undisturbed soil.
 - 1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
 - 2. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.

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- a. Exposed Concrete: Top 2 inches (50 mm) below grade to allow covering with surface material.
 - b. Posts Set into Concrete in Sleeves: Use steel pipe sleeves preset and anchored into concrete for installing posts. After posts have been inserted into sleeves, fill annular space between post and sleeve with nonshrink, nonmetallic grout or anchoring cement, mixed and placed to comply with anchoring material manufacturer's written instructions, and finished sloped to drain water away from post.
 - c. Posts Set into Voids in Concrete: Form or core drill holes not less than 5 inches (125 mm) deep and 3/4 inch (20 mm) larger than OD of post. Clean holes of loose material, insert posts, and fill annular space between post and concrete with nonshrink, nonmetallic grout or anchoring cement, mixed and placed to comply with anchoring material manufacturer's written instructions, and finished sloped to drain water away from post
- C. Terminal Posts: Locate terminal end, corner, and gate posts per ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment of 15 degrees or more.
- D. Line Posts: Space line posts uniformly at 10 feet (3.05 m) o.c. maximum.
- E. Post Bracing and Intermediate Rails: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Install braces at end and gate posts and at both sides of corner and pull posts.
1. Locate horizontal braces at mid-height of fabric 8 feet (2.44 m) or higher on fences with top rail, and at 2/3 fabric height on fences without top rail. Install so posts are plumb when diagonal rod is in proper tension.
- F. Tension Wire: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Pull wire taut, without sags. Fasten fabric to tension wire with 0.120 inch (3.05 mm) diameter hog rings of same material and finish as fabric wire, spaced a maximum of 24 inches (610 mm) o.c. Install tension wire in locations indicated before stretching fabric.
1. Top tension wire: Install tension wire through post cap loops.
 2. Bottom Tension Wire: Install tension wire within 6 inches (150 mm) of bottom of fabric and tie to each post with not less than same diameter and type of wire.
- G. Top Rail: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. 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.
- H. Bottom Rail: Install, spanning between posts.
- I. Chain-Link Fabric: Apply fabric to enclosing framework. Leave 2 inches (50 mm) 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.
- J. 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 (380 mm) o.c.
- K. 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 per ASTM F 626. Bend ends of wire to minimize hazard to

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individuals and clothing.

1. Maximum Spacing: Tie fabric to line posts at 12 inches (300 mm) o.c. and to braces at 24 inches (610 mm) o.c.

- L. Fasteners: Install nuts for tension bands and carriage bolts on the side of the fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

3.05 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 and lubricate where necessary.

3.06 GROUNDING AND BONDING

- A. Fence Grounding: Install at maximum intervals of 500 feet (150 m), except as follows:

1. Fences within 100 feet (30 m) of Buildings, Structures, Walkways, and Roadways: Ground at maximum intervals of 250 feet (75 m)..

- a. Gates and Other Fence Openings: Ground fence on each side of opening.

- 1) Bond metal gates to gate posts.
- 2) Bond across openings, with and without gates, except openings indicated as intentional fence discontinuities. Use No. 2 AWG wire and bury at least 18 inches (460 mm) below finished grade.

- B. Grounding Method: At each grounding location, drive a grounding rod vertically until the top is 6 inches (150 mm) below finished grade. Connect rod to fence with No. 6 AWG conductor. Connect conductor to each fence component at the grounding location.

- C. Bonding Method for Gates: Connect bonding jumper between gate post and gate frame.

- D. Connections: Make connections so possibility of galvanic action or electrolysis is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact will be galvanically compatible.

1. Use electroplated or hot-tin-coated materials to ensure high conductivity and to make contact points closer in order of galvanic series.
2. Make connections with clean, bare metal at points of contact.
3. Make aluminum to steel connections with stainless-steel separators and mechanical clamps.
4. Make aluminum -to-galvanized-steel connections with tin-plated copper jumpers and mechanical clamps.
5. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.

- E. Bonding to Lightning Protection System: If fence terminates at lightning-protected building or structure, ground the fence and bond the fence grounding conductor to lightning protection down conductor or lightning protection grounding conductor complying with NFPA 780.

3.07 FIELD QUALITY CONTROL

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- A. Ground Resistance Testing: Engage a qualified independent testing and inspection agency to perform field quality-control testing.

3.09 ADJUSTING

- A. Gate: Adjust gate 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.

3.10 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's personnel to adjust, operate, and maintain gates.

END OF SECTION

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SECTION 32 92 00

TURF AND GRASSES

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Include GENERAL CONDITIONS and SUPPLEMENTARY CONDITIONS as part of this Section.
- B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with trades affecting, or affected by, work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

1.02 WORK INCLUDED

- A. Refer to the Drawings for the extent and details of this work.
- B. The work of this Section consists of all seeding and sodding and related work as shown on the Drawings or required herein and includes, but is not limited to the following:
 - 1. Providing all topsoil required for work of this Section.
 - 2. Screening stripped and stockpiled topsoil.
 - 3. Providing additional new topsoil from off-site sources as required to complete work for this Section.
 - 4. Providing all soil amendments, fertilizers, erosion controls and mulches as required for work in this Section.
 - 5. Scarification of subsoil in preparation for loaming.
 - 6. Spreading and fine grading topsoil for all lawn areas.
 - 7. Seeding and sodding required for work in this Section.
 - 8. Maintenance and guarantee.

1.03 RELATED WORK UNDER OTHER SECTIONS

- A. Site Clearing
- B. Earthwork
- C. Sedimentation and Erosion Control

1.04 REFERENCES

- A. Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.
 - 1. American Society for Testing and Materials (ASTM):
 - C 136 Sieve Analysis of Fine and Coarse Aggregates
 - D 422 Particle-Size Analysis of Soils
 - E 11 Wire-Cloth Sieves for Testing Purposes

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1.05 SUBMITTALS

- A. Materials list: Submit a complete list of all materials proposed for use in this work, demonstrating complete conformance with the requirements specified.
 - 1. Submit grass seed mixes for approval.
 - 2. Submit sod grass seed mix for approval.
 - 3. See Section 00 31 33 – Topsoil Analysis of these specifications for soil test reports and additive recommendations.
 - 4. Submit product information with mix ratios and amounts for hydromulching to be used during hydroseeding for Landscape Architect's approval.
 - 5. Submit fertilizer, herbicide and fungicide products for application as required for Landscape Architect's approval.
 - 6. Submit mechanical analysis of any soil amendments.

1.06 QUALITY ASSURANCE

- A. All seed, sod, and amendments shall comply with all Federal, State and local laws and regulations requiring inspection for plant disease and insect control.

1.07 PRODUCT HANDLING

- A. Delivery and Storage:
 - 1. Deliver all items to the job site in their original containers with all labels intact and legible at time of Landscape Architect's inspection.
 - 2. Immediately remove from the site all materials which do not comply with the specified requirements
 - 3. Prior to installation, cover and store all sod in a cool, dry shaded area.
 - 4. Use all means necessary to protect seed from moisture and other contaminants which may adversely affect proper germination. Deliver seed in original sealed containers, labeled with analysis of seed mixture, percentage of pure seed, year of production, net weight, date of packaging, location of packaging, and name of seed grower. Damaged packages will not be accepted. Seed shall be stored under cool and dry conditions so that the endophytic seed in the mixture is capable of maintaining a high level of endophytes.
 - 5. Use all means necessary to protect fertilizers, amendments and other materials from moisture and other contaminants which may adversely affect their efficacy. Deliver fertilizer in sealed waterproof bags, printed with manufacturer's name, weight, and guaranteed analysis.

1.08 JOB CONDITIONS

- A. Utilities: Determine location of underground utilities and perform work in a manner which will avoid possible damage. Hand excavate as required. Maintain grade stakes set by others until removal is mutually agreed upon by all parties concerned.
- B. Excavation: When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, or obstructions, notify Landscape Architect before spreading topsoil.

1.09 PLANTING SEASON

- A. Planting season shall be as follows:

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<u>Material</u>	<u>Planting Season</u>	
	<u>Spring</u>	<u>Fall</u>
Lawn Seeding and Sodding	4/1 to 6/1	8/15 to 10/1

- B. Planting shall only be performed when weather and soil conditions are suitable for planting the material specified in accordance with locally accepted practice.
- C. Planting season may be extended with the written permission of the Landscape Architect.

1.10 ACCEPTANCE

- A. Acceptance:
 - 1. The Landscape Architect will inspect all work for Substantial Completion upon written request of the Contractor. The request shall be received at least ten calendar days before the anticipated date of inspection.
 - 2. Acceptance of material by the Landscape Architect will be for general conformance to specified requirements, and shall not relieve the Contractor of responsibility for full conformance to the Contract Documents.
 - 3. Upon completion and reinspection of all repairs or renewals necessary in the judgement of the Landscape Architect, the Landscape Architect will recommend to the Owner that the work of this Section be accepted.
- B. Sod and seed areas will be accepted when in compliance with all the following conditions:
 - 1. Roots are thoroughly knit to the soil;
 - 2. Absence of visible joints (sodded areas);
 - 3. All areas show a uniform stand of specified grass in healthy condition;
 - 4. At least 60 days have elapsed since the completion of work under this Section.

PART 2 - PRODUCTS

2.01 LAWN PRODUCTS

- A. Topsoil
 - 1. Topsoil stockpiled from on-site stripping may be utilized if in compliance with the requirements for new topsoil.
 - 2. All topsoil that was stripped and stockpiled shall be screened to a maximum stone size of 3/8 in. largest dimension, as determined by pipette method in compliance with ASTM F-1632.
- B. New Topsoil
 - 1. New Topsoil: Shall be natural, fertile loam typical of cultivated topsoils of the locality, containing not less than 3.5% or more than 8% by weight, of decayed organic matter (humus) as determined by ASTM F-1647. If organic amendments are needed to obtain the specified matter content of the topsoil, the organic matter source may be a peat or compost material. The peat shall be Canadian sphagnum peat having an ash content not exceeding 15% as determined by ASTM D-2974. Compost may be used, provided that the material has been composted in an in-vessel system, and has an

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ash content not exceeding 40%.

2. Topsoil shall be taken from a well-drained, arable site, free of subsoil, large stones, earth clods, sticks, stumps, clay lumps, roots or other objectionable, extraneous matter or debris.
3. Topsoil shall be free of Quack-grass rhizomes, *Agropyron repens*, and the nut-like tubers of Nutgrass, *Cyperus esculentus*, and all other primary noxious weeds.
4. Topsoil shall have a pH not less than 6.0 or greater than 7.0.
5. Topsoil shall not be delivered or used for planting operations while in a frozen or muddy condition.
6. Topsoil shall conform to the following particle size distribution, with a maximum 3/8" largest dimension, as determined by pipette method in compliance with ASTM F-1632:

Sand	40-60%
Silt	30-40%
Clay	5-20%
7. See Section 00 31 33 – Topsoil Analysis of these specifications for soil test reports and additive recommendations.
8. Minimum planting soil nutrient levels shall be: Nitrogen @ 5% average of organic matter, Phosphorus @ .02 to .05% average of total soil content, Potassium @ 1.2% average of total soil content.

C. Washed Screened Sand (Topsoil Amendment):

1. Washed screened sand shall conform to the following particle size distribution when tested for mechanical gradation (sieve analysis) and compared to the USDA Soil Classification System with a three eights (3/8") largest dimension.

	<u>Sieve Mesh</u>	<u>Diam of sieve (mm)</u>	<u>Allowable range % retained</u>
Gravel	10	2.00	0-5%
Very Coarse Sand	18	1.00	0-20% combined w/ gravel
Coarse Sand	35	0.50	at least 60%
Medium Sand	60	0.25	in this range
Fine Sand	100	0.15	10% maximum
Very Fine Sand	270	0.05	3% maximum
Silt		0.002	5% maximum
Clay		<0.002	3% maximum

In addition, there should be 100% passing the No. 5 screen (4 mm), and no more than 10% combined very fine sand, silt, and clay.

D. Lime

1. Lime shall be an approved agricultural limestone containing no less than fifty (50%) percent of total carbonates and twenty five (25%) percent total magnesium with a neutralizing value of at least one hundred (100%) percent
2. The material shall be ground to such a fineness that forty (40%) percent will pass through a Number 100 U.S. Standard Sieve, and ninety eight (98%) percent will pass through a Number 20 U.S. Standard Sieve.
3. The lime shall be uniform in composition, dry and free flowing and shall be delivered

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to the site in the original, unopened containers, each bearing the manufacturer's guaranteed analysis.

4. Any lime which becomes caked or otherwise damaged making it unsuitable for use, will be rejected.

E. Fertilizer

1. Starter Fertilizer: General starter fertilizer with a nutrient analysis 19-26-5, N-P-K. A minimum of 75% of the total nitrogen 19% is derived from urea and methylene ureas; a minimum of 25% from monoammonium phosphate. A minimum of 2.1% from water-insoluble methylene ureas; remaining 97.9% from water-soluble urea, slowly available methylene urea and monoammonium phosphate. Phosphorus (26%) from monoammonium phosphate; potash (5%) and sulfur as sulfate (1.8%) from potassium sulfate
2. Shall be as determined by a soil test from an approved soil testing laboratory.

F. Water

1. Water shall be supplied by the Owner unless otherwise specified.
2. The Contractor is responsible for providing and operating all equipment, hoses, etc. for watering throughout the project and until final acceptance of lawn and turf areas by the Landscape Architect.
3. Water shall be suitable for irrigation and free from ingredients harmful to seeded or sodded areas.

G. Herbicides, Pesticides and Fungicides

1. Herbicides, pesticides, and fungicides may be used subject to the approval of the Landscape Architect, and handled by State Licensed operators only.

H. Seed

1. Lawn Seed mixture: Standard grade seed of the most recent season's crop. Seed shall be dry and free of mold. Seed shall be inoculated with endophytes. Submit proposed mixture to the Landscape Architect for approval. Seed mixture shall be as follows:

Lawn Seed Mix

<u>Name of Seed</u>	<u>% by Weight in Mixture</u>	<u>Minimum % Purity</u>	<u>Minimum % Germination</u>
Rebel II, Rebel Jr., or Tribute Tall Fescue	80	95	90
Palmer II Perennial Ryegrass	10	98	90
Nassau, Georgetown, Ram I or Baron Kentucky Bluegrass	10	98	90

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I. Hydroseed Mix

1. All work will be carried out by an approved spraying machine specifically used for this work. Amounts of fertilizer used shall reflect recommendations outlined in the Soil Analysis, see Section 2.01 E. The Contractor shall submit to the Landscape Architect for approval, prior to the start of work, a certified statement as to number of pounds of fertilizer, amounts and types of grass seed, and processed fiber, per one hundred (100) gallons of
2. Cellulose Fiber Mulch: Cellulose fiber mulch shall be composed of virgin wood, contain a green color additive, be weed free, and non-polluting, containing no germination or growth - inhibiting factors, similar to Hydro Mulch, manufactured by Conwed Corporation, St. Paul, Minnesota 55113.

J. Certified Turfgrass Sod

1. Superior sod grown from certified, high quality seed of known origin or from plantings of certified grass seedlings or stolons. It shall be inspected by the certification agency of the state in which it is grown to assure satisfactory genetic identity and purity, overall high quality and freedom from noxious weeds as well as excessive quantities of other crop and weedy plants at time of harvest. All seed or original plant material in mixture must be certified. Turfgrass sod shall meet the published state standards for certification.
2. Sod shall be a mixture of four or five current and improved bluegrass varieties found in the top 25% of the NTEP (National Turfgrass Evaluation Proceedings), with last two tests spanning over 8 years. Mixture shall contain approximately equal proportions of each hybrid component.
3. Sod shall be nursery grown on cultivated mineral agricultural soils. Sod shall have been mowed regularly and carefully, and otherwise maintained from planting to harvest.
4. Thickness of Cut: Sod shall be machine cut at a uniform soil thickness of 5/8 in., plus or minus 1/4 in., at the time of cutting. Measurement for thickness shall exclude top growth and thatch.
5. Strip Size: Individual pieces of sod shall be cut to the supplier's standard width and length. Maximum allowable deviation from standard widths and lengths shall be plus or minus 1/2 in. on width, and plus or minus 5% on length. Broken strips and torn and uneven ends will not be acceptable.
6. Strength of Sod Strips: Standard size sections of sod shall be strong enough to support their own weight and retain their size and shape if suspended vertically when grasped in the upper 10% of the section.
7. Moisture Content: Sod shall not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
8. Time Limitations: Sod shall be harvested, delivered, and transplanted within a 36 hour period unless a suitable preservation method is approved prior to delivery. Sod not transplanted within this period shall be inspected and approved by the Architect prior to its installation.
9. Thatch: Sod shall be relatively free of thatch. A maximum of 1/2 in. (uncompressed) thatch will be permitted.

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10. Diseases, Nematodes, and Insects: Sod shall be free of diseases, nematodes, and soil-borne insects. State Nursery and Plant Materials Laws require that all sod be inspected and approved for sale. The inspection and approval must be made by the State Agricultural Department, Office of the State Entomologist.
11. Weeds: Sod shall be free of objectionable grassy and broad leaf weeds. Turfgrass sod shall be considered free of such weeds if less than five such plants are found per 100 sq. ft. of area.
12. Turfgrass sod shall not be acceptable if it contains any of the following weeds: common bermudagrass (wiregrass), quackgrass, johnsongrass, poison ivy, nutsedge, nimblewill, Canada thistle, bindweed, bentgrass, wild garlic, ground ivy, perennial sorrel and brome grass.

K. Compost

1. Compost shall be derived from organic wastes such as food and agricultural residues, animal manures, mixed solid waste and biosolids (treated sewage sludge) that meet all State Environmental Agency requirements. The product shall be well composted, free of viable weed seeds and contain material of a generally humus nature capable of sustaining growth of vegetation, with no materials toxic to plant growth.

1. Compost shall have the following properties:

<u>Parameters</u>	<u>Range</u>
pH	5.5 – 8.0
Moisture Content	35% - 55%
Soluble Salts	≤ 4.0 mmhos (dS)
C:N ratio	15 – 30:1
Particle Size	< 1"
Organic Matter Content	> 50%
Bulk Density	< 1000 lbs./cubic yard
Foreign Matter	< 1% (dry weight)

2. Compost generator shall also provide minimum available nitrogen and other macro and micro nutrients to determine fertilizer requirements.
3. Compost shall be "AllGro", distributed by AllGro, 4 Liberty Lane West, Hampton, NH 03842; "Agresoil", distributed by Agresource, 100 Main Street, Amesbury, MA 01913; or equal.
4. Guidelines for quantity of compost required to achieve suitable soil organic content in soil mixes for ornamental horticultural planting shall be as recommended by the compost manufacturer.

PART 3 - EXECUTION

3.01 PREPARATION OF SUBSOIL

- A. Subgrade shall be examined to ensure that rough grading and all other subsurface work in lawn areas and other areas to be seeded or sodded is done prior to start of seeding or sodding.
- B. Existing subgrade shall be loosened or scarified to a minimum depth of 3 in. prior to spreading topsoil. Subgrade shall be brought to true and uniform grade, and shall be cleared of stones greater than 3 in., sticks, and other extraneous material.

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- C. Prior to spreading topsoil, subsoil should be rough graded to correspond with finish grades as indicated on the Drawings. Subgrade shall slope to allow for subsurface drainage. Depressions shall be filled, and areas which are highly compacted shall be loosened to a depth which is adequate for the passage of gravitational water through the subsoil.
- D. After acceptance of subsoil grades, loosen and mix subgrade material two inches to four inches (2"-4") deep. Remove stones over two (2") inches, sticks, rubbish, and other deleterious materials which may impede the healthy and vigorous growth of grass. Move no heavy objects or machinery, except as necessary for the spreading of topsoil, over sod and seed beds after preparation of subgrade.
- E. Subsoil which becomes compacted due to excessive construction activity shall be loosened as directed by the Landscape Architect at no additional cost to the Owner.

3.02 SPREADING OF TOPSOIL

- A. Immediately after approval of subgrade, evenly spread and lightly compact approved topsoil to finish grades as indicated on the Drawings. Do not spread topsoil which is in a muddy or frozen condition. Handle no topsoil when dry or above the plastic limit. Install a minimum of six (6") inches of topsoil to lawn areas unless otherwise indicated on the Drawings.
- B. When possible, spreading of topsoil shall be performed from the center of the lawn area to the perimeter. Contractor may use alternate spreading pattern as approved in writing by the Landscape Architect.
- C. Caution should be exercised to minimize or eliminate travel over areas previously covered with topsoil. Topsoil which becomes compacted due to excessive construction activity shall be stripped and re-spread, or loosened as directed by the Landscape Architect at no additional cost to the Owner.

3.03 SOD AND SEED BED PREPARATION

- A. The minimum depth of topsoil in all lawn areas shall be six (6") inches. Contractor is responsible for supplying all topsoil needed from off-site sources if stockpiles are inadequate.
- B. Grade all lawn areas to finish grades as indicated on the Drawings. When no grades are shown, areas shall have a smooth and continuous grade between existing or fixed controls and elevations shown on plans. Roll, scarify, rake and level as necessary to obtain true even lawn surfaces. All lawn areas shall slope to drain. Finish grades shall be approved by the Landscape Architect prior to commencing any sodding or seeding work. Install soil additive per manufacturer's instructions and as indicated on the Drawings.
- C. Place soil amendment in the areas of the lawn areas as shown on the Drawings. Follow the manufacturer's recommendations for installation.
- D. Spreading Limestone: Spread ground limestone evenly over the topsoiled surface. Incorporate limestone within the top two (2") inches of soil prior to finish raking. Apply limestone at the rate recommended by the testing and analysis agency.

3.04 FINISH GRADING

- A. Final surface of topsoil immediately before seeding shall be within $\pm 1/2$ in. of required elevation, with no ruts, mounds, ridges, or other faults, and no pockets or low spots in which water can collect. Stones, roots, and other debris greater than 1 in. in any dimension, which

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are visible at the surface, shall be removed and the resulting holes filled with topsoil, leaving a uniform planar surface.

- B. Finish grade surface with a drag or rake. Round out all breaks in grade, smooth down all lumps and ridges, fill in all holes and crevices. Rolling with a light roller is acceptable, if the surface is scarified afterward.
- C. In the event of settlement, the Contractor shall readjust the work to required finished grade.

3.05 LAWN SEED APPLICATION

- A. Lawn Seed shall be applied in two applications; first shall be by mechanical spreader; second shall be by hydroseeding method as specified below.
- B. First Application: Lawn seed shall be broadcast by means of an approved mechanical spreader, to give a uniform application at the following rates:

<u>Seed</u>	<u>Application Rate</u>
Lawn Seed Mix	218 lbs. / acre (200 s.f. / lb.)

- 1. Seed shall be applied in two equal applications for uniform coverage; direction of travel of spreader for second pass shall be perpendicular to that of the first pass. Seeding shall not be done when it is raining or snowing, or when wind velocity exceeds 5 mph.
 - 2. Following seeding the area shall be lightly raked to mingle seed with top 1/8 to 1/4 in. of soil. Area shall then be fine graded. Stones and other debris greater than 1 in. in any dimension which are visible on surface shall be removed.
- C. Second Application: Seed shall be spread by the hydroseeding method, utilizing power equipment commonly used for that purpose.
 - 1. Seed, lime, fertilizer, and mulch shall be mixed and applied to achieve application quantities specified herein for the conventional seeding method, with mulch applied at the rate of 1,200 lb./acre. Other provisions specified above for conventional seeding shall apply also to hydroseeding.
 - 2. Mulch shall be applied in two stages with 5% to 10% of the quantity applied with seed and the balance applied separately.
 - 3. Seed shall not be placed in water until immediately before application.
 - 4. Centrifugal pumps shall not be used to apply seed mix without fiber mulch. Hand broadcast or use gear pump.
 - 5. Gelscape shall be incorporated at the rate of 15 lb. per acre.
- D. Following seeding and raking, entire area shall be rolled with a hand roller having a weight of 60 to 90 lb./ft. of width, and a minimum diameter of 2 ft. Entire area shall then be watered by use of lawn sprinklers, or other approved means. Initial watering shall continue until the equivalent of a 2 in. depth of water has been applied to entire seeded surface, at a rate which will not dislodge the seed. Watering shall be repeated thereafter as frequently as required to prevent drying of the surface. Lawn areas shall attain an average height of 1/4 in. Watering methods and apparatus which may cause erosion of the surface shall not be permitted.
- E. Rope off entire seeded area to prevent vehicles and pedestrians from entering area.

3.06 SODDING

- A. Sod may be placed from April 15th to November 1st as long as the ground is not frozen.

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- B. Sod shall be harvested, delivered and transplanted within a period of thirty six (36) hours.
- C. Immediately prior to sodding operations, after all grading is complete and acceptable, the sod bed shall be lightly scratched with a fine toothed harrow or hand rake to provide a slightly roughened surface to accept the sodding application.
- D. The soil on which the sod is laid shall be reasonably moist and shall be watered, if necessary. The sod shall be laid smoothly, edge to edge, and where continuous or solid sodding is called for on the plans sod shall be laid with the longest dimension parallel to the contours. Vertical joints between sods shall be staggered. Immediately after laying, sod shall be pressed firmly into contact with the sod bed by tamping, rolling, or by other approved methods so as to eliminate all air pockets, provide true and even surfaces, insure knitting and protect all exposed sod edges, but without displacement of the sod or deformation of the sod surface. Contractor will topdress newly sodded areas with approved screened topsoil to fill all voids.
- E. In all swales, and on all slopes steeper than one on three and elsewhere as specified or as directed by the Landscape Architect, sods shall be held in place by stakes. Pegging shall be done immediately after tamping. At least one stake shall be driven through each strip of sod to be pegged and the stakes shall be not more than two feet apart. Stakes shall have their flat sides against the slope and be driven flush
- F. Sod shall be watered during and immediately after installation to prevent drying. It shall then be thoroughly irrigated to a depth sufficient that the underside of the new sod pad, and soil immediately below the pad, are thoroughly wet. Contractor shall be responsible for having adequate water available at the site prior to and during the installation of all sod.

3.07 FERTILIZING

- A. At the time of seeding and/or sodding, provide one application of the Starter fertilizer at the manufacturers recommended Normal Rate.
- B. Shall be as determined by a soil test from an approved soil testing laboratory.

3.08 LAWN MAINTENANCE

- A. Maintenance of the grass areas shall begin immediately, and generally consist of watering, weeding, mowing and edging, reseeding or replacement of dead sod, disease and insect pest control, repair of all erosion, and any other procedure consistent with good horticultural practice, necessary to insure normal, vigorous and healthy growth.
- B. Maintenance shall also include filling, regrading, and reseeding as necessary to correct depressions caused by settling, subsidence, or other physical or mechanical damage.
- C. Maintenance shall also include all temporary protection fences, barriers, signs and all other work incidental to proper maintenance.
- D. The Contractor shall be responsible for maintenance to establish a uniform stand of the approved grasses until acceptance. After the grass has started, all areas and parts of areas showing poor germination or growth shall be re-seeded, repeatedly, until all areas are covered with a satisfactory growth of grass. At the time of the first cutting, mow lawn with sharp mowing units not less than two and one half (2-1/2") inches high. Lawn shall be maintained between two and one half inches to three and one half inches (2-1/2"-3-1/2") high. Do not remove more than one third (1/3) of the grass blade. All lawns shall receive a minimum of three mowings before Contractor's request for inspection and acceptance. Additional

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mowings may be required before acceptance.

- E. Watering: The Contractor shall include cost for daily, and if necessary, continuous watering of all grass areas during a normal 8 hour working day. The seed bed shall be maintained in a continuous moist condition, satisfactory for good germination and growth of grass, as specified. Seeded grass areas must be kept in a moist condition until acceptance.
- F. Full and complete written instructions for maintenance of the lawn areas are to be furnished to the Owner, by the Contractor at least ten (10) days prior to the end of the contractual maintenance period, to familiarize him with the maintenance requirements for proper care and development of the lawns.

3.09 INSPECTION AND ACCEPTANCE

- A. The Landscape Architect shall inspect the lawns upon written request by the Contractor. The request shall be received at least ten (10) days before the anticipated date of inspection.
- B. Final acceptance will not be granted until all lawn areas are in satisfactory condition
- C. If the grass is in satisfactory condition, the Contractor's care and maintenance responsibilities will end. If the grass stand is unsatisfactory, the Contractor's maintenance responsibility shall continue, including a normal program of mowing, irrigation, reseeding, fertilization and repair until an acceptable stand of grass is achieved.

3.10 CLEAN UP

- A. Absolutely no debris may be left on the site. Excavated material shall be removed as directed. Repair any damage to site or structures to restore them to their original condition, as directed by the Landscape Architect, at no cost to the Owner.

END OF SECTION

Appendix A

APPENDIX A

CDBG SPECIAL CONDITIONS:

INTRODUCTION: The following special conditions are items which must be contained in contracts that are fully or partially paid with Community Development Block Grant (CDBG) funds. Some items such as bonding and insurance may also be included elsewhere in the contract documents. The Contractor must comply with those City requirements as well as these Federal requirements.

The Contractor shall comply with all applicable special conditions for CDBG contracts as contained herein and shall insert appropriate provisions in all subcontracts covering work under this contract to insure compliance by subcontractors with such regulations and shall be responsible for the submission of affidavits required of subcontractors there under except as the Secretary of Labor may specifically provide for variations of or exemptions from the requirements thereof.

The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

The Contractor must submit to the Project Manager or Representative, within ten (10) days of bid opening, the names and addresses of the subcontractors he/she proposes to utilize on the project in order for the Project Manager to approve utilization of said subcontractors. If other subcontractors are proposed during the construction phase, their names and addresses are to be submitted to the Project Manager prior to utilization for approval.

Complete language on the Federal labor laws is included in the attached HUD 4010, which is incorporated by reference.

Statements shown in italics are instructions to the reader.

I. SPECIAL CONDITIONS FOR ALL CDBG CONTRACTS

A. HUD SECTION 3 CLAUSE

Because this project receives direct Federal financial assistance, compliance with Section 3 of the Housing and Development Act of 1968 and the regulation implementing that Section is required. The Contractor understands that this requires the project to make training, employment and contracting opportunities available, to the greatest extent feasible, to lower income City residents and businesses.

1. COMPLIANCE WITH HUD SECTION 3 CLAUSE

Compliance: Compliance with the provisions of Section 3, the regulations set forth in 24 CFR 135, and all applicable rules and orders issued hereunder prior to the execution of this contract, shall be a condition of the Federal financial assistance provided under this contract and binding upon the City of Central Falls (City) and any of the City's sub-recipients and subcontractors. Failure to fulfill these requirements shall subject the City, the City's sub-recipients and subcontractors, their successors and assigns, to those sanctions specified by the Agreement through which Federal assistance is provided. The City certifies and agrees that no contractual or other disability exists which would prevent compliance with these requirements.

The Contractor further agrees to comply with these "Section 3" requirements and to include the following language in all subcontracts executed under this Agreement:

"The work to be performed under this contract is a project assisted under a program providing direct Federal financial assistance from HUD and is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1988, as amended, 12 U.S.C. 1701. Section 3 requires that to the greatest extent feasible opportunities for training and employment be given to low- and very low-income residents of the project area and contracts for work in connection with the project be awarded to business concerns that provide economic opportunities for low- and very low-income persons residing in the metropolitan area in which the project is located."

The Contractor further agrees to ensure that opportunities for training and employment arising in connection with a housing rehabilitation (including reduction and abatement of lead-based paint hazards), housing construction, or other public construction project are given to low- and very low-income persons residing within the metropolitan area in which the CDBG-funded project is located; where feasible, priority should be given to low- and very low-income persons within the service area of the project or the neighborhood in which the project is located, and to low- and very low-income participants in other HUD programs; and award contracts for work undertaken in connection with a housing construction, or other public construction project are given to business concerns that provide economic opportunities for low- and very low-income persons residing within the metropolitan area in which the CDBG-funded project is located; where feasible, priority should be given to business concerns which provide economic opportunities to low- and very low-income residents within the service area or the neighborhood in which the project is located, and to low- and very low-income participants in other HUD programs.

The Contractor certifies and agrees that no contractual or other legal incapacity exists which would prevent compliance with these requirements.

2. Notifications

The Contractor agrees to send to each labor organization or representative of workers with which it has a collective bargaining agreement or other contract or understanding, if any, a notice advising said labor organization or worker's representative of its commitments under the Section 3 clause and shall post copies of the notice in conspicuous places available to employees and applicants for employment or training.

3. Subcontracts

The Contractor will include this Section 3 clause in every subcontract and will take appropriate action pursuant to the subcontract upon a finding that the subcontractor is in violation of regulations issued by the grantor agency. The City will not subcontract with any entity where it has notice or knowledge that the latter has been found in violation of regulations under 24 CFR 125 and will not let any subcontract unless the entity has first provided it with a preliminary statement of ability to comply with the requirements of these regulations.

B. Remedies for Violation or Breach of Contract Terms

All claims, disputes and other matters in question between the parties to this agreement, arising out of or relating to this agreement or the breach thereof, shall be resolved as provided by Rhode Island law. Venue shall be in the County of

Providence, Rhode Island. Failure to timely comply with the contract without approval from the City shall be deemed a breach of this agreement and the expenses and costs incurred by the City shall be the burden of the Contractor. Disputes regarding the interpretation of this contract shall be resolved in favor of the City.

C. Patent and Copyrights

The U.S. Department of Housing and Urban Development and the City of Central Falls retain patent rights and copyrights on any project which involves research, developmental, experimental or demonstration work.

D. Adherence to State Energy Conservation Plan

The successful bidder shall recognize and adhere to mandatory standards and policies relating to energy efficiency which are contained in the State energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Public Law 94-163).

E. Access to Records—*For all contracts other than those awarded under small purchase procedures:*

Providence County, the consultant operating on behalf of the City of Central Falls, the State of Rhode Island, the U. S. Department of HUD, the Comptroller General of the United States or any of their authorized representatives, shall have access to any books, documents, papers and records of the Contractor which are directly pertinent to this contract, for the purpose of performing audit or project monitoring, and such records shall be subject to examination, copying, excerpting or transcribing.

F. Contract Work Hours and Safety Standards—*Applies to any contracts in excess of \$2,000, which may involve the employment of mechanics or laborers. (These requirements do not apply to the purchase of supplies or materials or articles ordinarily available on the open market or contracts for transportation or transmission of intelligence.)*

The Contractor shall comply with Sections 103 and 107 of the Contractor Work Hours and Safety Standards Act (40 USC 327-330) as supplemented by Department of Labor Regulations (29 CFR, Part 5). Under Section 103 of the Act each Contractor shall be required to compute the wages of every mechanic and laborer on the basis of a standard work week of forty (40) hours. Work in excess of that standard work week is permissible provided that the worker is compensated at a rate of not less than 1½ times the basic rate of pay for all hours worked in excess of forty (40) hours in the work week. (This requirement applies to time spent on federally assisted contracts only.) Section 107 of the Act is applicable to construction work and provides that no laborer or mechanic shall be required to work in surroundings 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.

G. Federal Equal Opportunity Laws

1. **Certification of Non-Segregated Facilities** (for contracts over \$10,000)
2. **Title VI, Civil Rights Act of 1964**
Affirmatively furthering the policies of the Fair Housing Act

3. Section 109 of the Housing and Community Development Act of 1974

No person in the United States shall on the grounds of race, color, national origin, religion or sex be excluded from participation in, be denied the benefits of or be subjected to discrimination under any program or activity receiving Federal financial assistance made available pursuant to the Act.

4. Section 503 Handicapped (for contracts \$2,500 or over)

5. Age Discrimination Act of 1975

Prohibits against discrimination on the basis of age

6. Section 504 of the Rehabilitation Act of 1973

Prohibits against discrimination on the basis of disability

II. ADDITIONAL SPECIAL CONDITIONS FOR ALL CDBG CONSTRUCTION CONTRACTS

A. Copeland "Anti-Kickback Act"

The Contractor shall comply with the Copeland "Anti-Kickback Act" (18 USC 874) as supplemented in Department of Labor regulations (29 CFR, Part 3). This Act provides that each Contractor or sub-grantee shall be prohibited from inducing, by any means, any person employed in the construction, completion or repair of public work, to give up any part of the compensation to which he is otherwise entitled. The City of Central Falls shall report all suspected or reported violations to the U. S. Department of HUD.

B. All Construction Contracts Expected to be Over \$2,000

Davis-Bacon Requirements

The Contractor shall comply with the Davis-Bacon Act (40 USC 276a to a-7) as supplemented by Department of Labor regulations (29 CFR, Part 5). Under this Act Contractors and subcontractors shall be required to pay wages to laborers and mechanics at a rate not less than the minimum wages specified in a wage determination made by the Secretary of Labor. In addition Contractors shall be required to pay wages not less often than once a week. A copy of the prevailing wage rates is included in this solicitation. Any known changes to these wage rates prior to award of contract shall be made known to offerers. In addition Contractors will be required to provide payroll information to the City of Central Falls on a weekly basis for verification of compliance. Contractors and subcontractors to submit this information on Certified Payroll Forms as supplied by the State of Rhode Island Department of Labor and Training. The City of Central Falls will report all suspected or reported violations of this condition to the U. S. Department of HUD and/or the U. S. Department of Labor.

--See attached copy of the applicable wage rates in Appendix C--

C. All Construction Contracts over \$10,000

1. Contract Termination

This contract may be terminated upon thirty (30) days' written notice without cause. In the event this contract is terminated without cause, the Contractor shall be compensated for all services performed to termination date together with any expenses incurred to that date. This contract may be terminated by either party upon seven (7) days' written notice should the other party fail substantially to perform in accordance with its terms through no fault of the party initiating the termination. In the event the contract is terminated through fault of the Contractor, the Contractor shall bear all additional expenses incurred by the County for the completion of the contract, including those required to retain additional Contractors to complete the work.

2. Equal Employment Opportunity

Contractors shall comply with Executive Order 11246 entitled "Equal Employment Opportunity," as amended by Executive Order 11375 and as supplemented in Department of Labor regulations (41 CFR, Part 60).

The Contractor also agrees to ensure that Minority Business Enterprises, as defined in 49 CFR, Part 23, have the maximum opportunity to participate in the performance of contracts and subcontracts financed in whole or in part with Federal funds provided under this agreement. In this regard the Contractor shall take all necessary reasonable steps in accordance with 49 CFR, Part 23, to ensure that Minority Business Enterprises have the maximum opportunity to compete for and perform contracts.

D. All Construction Contracts over \$100,000

1. Section 306 of the Clean Air Act, Section 508 of the Clean Water Act and EPA Regulations of Nonexempt Federal Contracts

The Contractor shall comply with all applicable standards, orders or requirements issued under Section 306 of the Clean Air Act (42 USC 1857(h)); Section 508 of the Clean Water Act (33 USC 1368), Executive Order 11738; and Environmental Protection Agency Regulations (40 CFR, Part 15), which prohibit the use under Nonexempt Federal contracts, grants or loans of facilities included on the EPA List of Violating Facilities. Violations will be reported to HUD and to the USEPA Assistant Administrator for Enforcement (EN-329).

2. Bonding and Insurance

The following bonding and insurance items are required:

a. A bid guarantee from the bidder equivalent to 5 percent of the bid price. The bid "guarantee" shall consist of a firm commitment such as a bid bond, certified check or other negotiable instrument accompanying the bid as assurance that the bidder will, upon acceptance of his bid, execute such contractual documents as may be required within the time specified.

b. A performance bond on the part of the Contractor for 100 percent of the contract price. A "performance bond" is one executed in connection with a contract to secure fulfillment of all the Contractor's obligations under such contract.

c. A payment bond on the part of the Contractor for 100 percent of the contract price. A "payment bond" is one executed in connection with a contract to assure payment as required by law of all persons supplying labor and material in the execution of the work provided for in the contract.

III. RESTRICTION ON ALL PUBLIC WORKS PROJECTS

No Contractor, or subcontractor, of a foreign country included on the list of countries that discriminate against U. S. firms published by the Office of the United States Trade Representative (USTR) may be awarded a contract or a subcontract.

IV. ADDITIONAL REQUIRED INFORMATION ON ALL CONTRACTS

ALL CONTRACTORS AND THEIR SUBCONTRACTORS are required to supply the following so that the City of Central Falls submit quarterly and yearly reporting as required by the CDBG Grant.

Data Universal Numbering System DUNS #

Prime Contractor Identification number (Tax ID #)

Signed "CERTIFICATION OF SPECIAL CONDITIONS FOR CDBG CONTRACTS" form supplied by the City upon award of contract.

Signed "CERTIFICATIONS SECTION 3 OF THE HOUSING AND URBAN DEVELOPMENT ACT OF 1968" form supplied by the City upon award of contract.

Appendix B

APPENDIX B

ANTI-KICKBACK ACKNOWLEDGMENT

ALL BIDDERS/OFFERORS MUST ATTEST TO THE FOLLOWING:

The vendor acknowledges, under the pains and penalties of perjury, that he/she has not been offered, paid, or solicited for any contribution or compensation, nor has he/she been granted a gift, gratuity, or other consideration, either directly or indirectly by any officer, employee or member of the governing body of the City of Central Falls who exercises any functions or responsibilities in connection with either the award or execution of the project to which this contract pertains.

Further, the vendor acknowledges, under the pains and penalties of perjury, that he/she has not offered, paid, or solicited by way of any contribution or compensation, nor has he/she granted a gift, gratuity or other consideration either directly or indirectly to any officer, employee, or member of the governing body of the City of Central Falls who exercises any functions or responsibilities in connection with either the award or execution of the project to which this project or contract pertains.

SIGNATURE OF OFFEROR

DATE

TITLE

COMPANY

Title of RFP: **IMPROVEMENTS TO CROSSMAN STREET PARK AND SACRED HEART PARK**

SUBMIT THIS FORM WITH BID SUBMISSION DOCUMENTS

Appendix C

APPENDIX C

General Wage Rate Decision Davis Bacon

General Decision Number: RI140001 04/18/2014 RI1

Superseded General Decision Number: RI20130001

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

Modification Number	Publication Date
0	01/03/2014
1	01/24/2014
2	03/07/2014
3	03/14/2014
4	04/04/2014
5	04/11/2014
6	04/18/2014

ASBE0006-008 09/01/2012

	Rates	Fringes
Asbestos Worker/Insulator Includes application of all insulating materials, protective coverings, coatings & finishes to all types of mechanical systems.	\$ 37.31	22.43

ASBE0201-004 06/01/2005

	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.....	\$ 17.65	9.95

BOIL0029-001 10/01/2009		
	Rates	Fringes
BOILERMAKER.....	\$ 38.25	17.04

BRRIO003-001 12/01/2013		
	Rates	Fringes
Bricklayer, Stonemason, Pointer, Caulker & Cleaner.....	\$ 35.36	22.72

BRRIO003-002 03/01/2014		
	Rates	Fringes
Marble Setter, Terrazzo Worker & Tile Setter.....	\$ 35.14	23.79

BRRIO003-003 03/01/2014		
	Rates	Fringes
Marble, Tile & Terrazzo Finisher.....	\$ 29.78	22.47

* CARP0094-001 01/01/2014		
	Rates	Fringes
CARPENTER (Includes Soft Floor Layer).....	\$ 32.61	24.71
DIVER TENDER.....	\$ 33.61	24.71
Diver Tender.....	\$ 33.61	24.71
DIVER.....	\$ 44.41	24.71
Piledriver.....	\$ 32.61	24.71
WELDER.....	\$ 33.61	24.71

FOOTNOTES:

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

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

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

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

hour additional.

CARP1121-002 04/01/2014

	Rates	Fringes
MILLWRIGHT.....	\$ 33.32	24.81

ELEC0099-002 06/01/2013

	Rates	Fringes
ELECTRICIAN.....	\$ 34.08	62.86%
Teledata System Installer.....	\$ 25.56	14.26%+13.57

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 01/01/2014

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 45.62	26.785+A+B

FOOTNOTES:

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

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

ENGI0057-001 12/01/2013

	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.....	\$ 36.15	21.60+a
GROUP 2.....	\$ 31.77	21.60+a

GROUP 3.....	\$ 28.92	21.60+a
GROUP 4.....	\$ 35.20	21.60+a
GROUP 5.....	\$ 26.00	21.60+a
GROUP 6.....	\$ 20.00	21.60+a
GROUP 7.....	\$ 31.85	21.60+a
GROUP 8.....	\$ 35.77	21.60+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

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.

FOOTNOTES:

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

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Digging machine, Ross Carrier, crane, lighter, locomotive, derrick, 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 2: Fireman & oiler.

GROUP 3: Oiler on crawler backhoe.

GROUP 4: 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 5: Well-point installation crew.

GROUP 6: Utility Engineers and Signal Persons

GROUP 7: Heater, concrete mixer, stone crusher, welding machine, generator and light plant, gas and electric driven pump and air compressor.

GROUP 8: Boat & tug operator.

ENGI0057-002 11/04/2013

	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.....	\$ 34.30	21.60+a
GROUP 2.....	\$ 29.00	21.60+a
GROUP 3.....	\$ 23.00	21.60+a
GROUP 4.....	\$ 29.58	21.60+a
GROUP 5.....	\$ 33.28	21.60+a
GROUP 6.....	\$ 32.90	21.60+a
GROUP 7.....	\$ 28.55	21.60+a
GROUP 8.....	\$ 29.93	21.60+a
GROUP 9.....	\$ 31.88	21.60+a

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

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

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

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

GROUP 2: Well point installation crew

GROUP 3: Utility engineers and signal persons

GROUP 4: Oiler on cranes

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

GROUP 6: Roller, skid steer loaders, street sweeper

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

GROUP 8: Stone crusher

GROUP 9: Mechanic & welder

ENGI0057-003 12/01/2013

BUILDING CONSTRUCTION

	Rates	Fringes
Power Equipment Operator		
GROUP 1.....	\$ 35.42	21.60+a
GROUP 2.....	\$ 35.20	21.60+a
GROUP 3.....	\$ 31.20	21.60+a
GROUP 4.....	\$ 28.35	21.60+a
GROUP 5.....	\$ 34.50	21.60+a
GROUP 6.....	\$ 34.07	21.60+a
GROUP 7.....	\$ 31.39	21.60+a

BOOM LENTHS, INCLUDING JIBS:

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

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.

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

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Digging machine, Ross carrier, crane, boomtrucks, lighter, locomotive, derrick, hoist, elevator, bidwell-type machine, shot & water blasting machine, paver, spreader, front end loader (3 yds. and over), vibratory hammer and vacuum truck

GROUP 2: Telehandler equipment, forklift, concrete pump & on-site concrete plant

GROUP 3: Fireman & oiler

GROUP 4: Oiler on crawler backhoe

GROUP 5: 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 6: Well point installation crew

GROUP 7: Heater, concrete mixer, stone crusher, welding machine, generator for light plant, gas and electric driven pump & air compressor

* IRON0037-001 03/16/2014

	Rates	Fringes
IRONWORKER.....	\$ 33.56	22.87

LABO0271-001 12/01/2013

BUILDING CONSTRUCTION

	Rates	Fringes
LABORER		
GROUP 1.....	\$ 27.55	22.45
GROUP 2.....	\$ 27.80	22.45
GROUP 3.....	\$ 28.30	22.45
GROUP 4.....	\$ 28.55	22.45
GROUP 5.....	\$ 29.55	22.45

LABORERS CLASSIFICATIONS

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

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

GROUP 3: Pre-Cast Floor & Roof Plank Erectors

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

GROUP 5: Toxic Waste Remover

LABO0271-002 12/01/2013

HEAVY AND HIGHWAY CONSTRUCTION

	Rates	Fringes
LABORER		
COMPRESSED AIR		

Group 1.....	\$ 44.73	20.20
Group 2.....	\$ 34.25	20.20
Group 3.....	\$ 46.73	20.20
FREE AIR		
Group 1.....	\$ 36.80	20.20
Group 2.....	\$ 34.25	20.20
Group 3.....	\$ 38.80	20.20
LABORER		
Group 1.....	\$ 27.55	20.70
Group 2.....	\$ 27.80	20.70
Group 3.....	\$ 28.55	20.70
Group 4.....	\$ 20.80	20.70
Group 5.....	\$ 29.55	20.70
OPEN AIR CAISSON, UNDERPINNING WORK AND BORING CREW		
Bottom Man.....	\$ 33.30	20.20
Top Man & Laborer.....	\$ 32.35	20.20
TEST BORING		
Driller.....	\$ 33.75	20.20
Laborer.....	\$ 32.25	20.20

LABORER CLASSIFICATIONS

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

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

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

GROUP 4: Flagger & signaler

GROUP 5: Toxic waste remover

LABORER - COMPRESSED AIR CLASSIFICATIONS

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

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

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

LABORER - FREE AIR CLASSIFICATIONS

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

GROUP 2: Change house attendant, powder watchperson

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

 PAIN0011-005 06/01/2013

	Rates	Fringes
PAINTER		
Brush, Roller, Taper, Wall Coverer.....	\$ 30.00	18.37
Epoxy, Tanks, Towers, Swing Stage & Structural Steel.....	\$ 32.00	18.37
Spray, Sand & Water Blasting.....	\$ 31.00	18.37

 PAIN0011-006 06/01/2013

	Rates	Fringes
GLAZIER.....	\$ 34.18	17.75

FOOTNOTES:

SWING STAGE: \$1.00 per hour additional.

PAID HOLIDAYS: Labor Day & Christmas Day.

 PAIN0011-011 06/01/2013

	Rates	Fringes
Painter (Bridge Work).....	\$ 43.15	17.75

 PAIN0035-008 06/01/2011

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

PLAS0040-001 06/11/2012

BUILDING CONSTRUCTION

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...\$	30.50	23.35
PLASTERER.....\$	32.00	22.60

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

PLAS0040-002 06/11/2012

HEAVY AND HIGHWAY CONSTRUCTION

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...\$	30.50	23.35

PLUM0051-002 03/01/2014

	Rates	Fringes
Plumbers and Pipefitters.....\$	35.51	27.32

ROOF0033-004 06/01/2013

	Rates	Fringes
ROOFER.....\$	32.48	19.27

SFRI0669-001 07/01/2013

	Rates	Fringes
SPRINKLER FITTER.....\$	39.76	19.87

SHEE0017-002 12/01/2012

	Rates	Fringes
Sheet Metal Worker.....\$	35.32	28.05

TEAM0251-001 05/01/2013

HEAVY AND HIGHWAY CONSTRUCTION

	Rates	Fringes
TRUCK DRIVER		
GROUP 1.....\$	27.21	18.2625+A+B
GROUP 2.....\$	27.36	18.2625+A+B
GROUP 3.....\$	27.41	18.2625+A+B

GROUP 4.....	\$ 27.46	18.2625+A+B
GROUP 5.....	\$ 27.56	18.2625+A+B
GROUP 6.....	\$ 27.96	18.2625+A+B
GROUP 7.....	\$ 28.16	18.2625+A+B
GROUP 8.....	\$ 27.66	18.2625+A+B
GROUP 9.....	\$ 27.91	18.2625+A+B
GROUP 10.....	\$ 27.71	18.2625+A+B

FOOTNOTES:

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

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

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

TRUCK DRIVER CLASSIFICATIONS

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

GROUP 2: Two-axle on low beds

GROUP 3: Two-axle dump truck

GROUP 4: Three-axle dump truck

GROUP 5: Four- and five-axle equipment

GROUP 6: Low-bed or boom trailer.

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

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

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

GROUP 10: Tractor trailer

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

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

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

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters, PLUM, indicate the international union and the four-digit number, 0198, that follows 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. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rates.

0000/9999: weighted union wage rates will be published annually each January.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union majority rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

WAGE DETERMINATION APPEALS PROCESS

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

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

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

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

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

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

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

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

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

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

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

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END OF GENERAL DECISION

End Of Project Manual