BILL NO. S-24-11-08

SPECIAL ORDINANCE NO. S-147-24

AN ORDINANCE approving the awarding of ITB #9275422 – SERVICE AGREEMENT - HEADWATERS PARK FOUNTAIN IMPROVEMENT – ($755,782.00) by the City of Fort Wayne, Indiana, by and through its Board of Park Commissioners and HAMILTON HUNTER BUILDERS, INC. for the PARKS AND RECREATION DEPARTMENT.

NOW, THEREFORE, BE IT ORDAINED BY THE COMMON COUNCIL OF THE CITY OF FORT WAYNE, INDIANA;

SECTION 1. That of ITB #9275422 – SERVICE AGREEMENT - HEADWATERS PARK FOUNTAIN IMPROVEMENT – by the City of Fort Wayne, Indiana, by and through its Board of Park Commissioners and HAMILTON HUNTER BUILDERS, INC. for the PARKS AND RECREATION DEPARTMENT, respectfully for:

> All labor, insurance, material, equipment, tools, power, transportation, miscellaneous equipment, etc., necessary for CONSTRUCTION SERVICES TO REMOVE THE EXISTING FOUNTAIN IN HEADWATERS PARK AND CONSTRUCT A NEW FOUNTAIN IN ITS PLACE, INLCUDING ALL NEW FOUNTAIN EQUIPMENT;

involving a total cost of SEVEN HUNDRED FIFTY-FIVE THOUSAND SEVEN HUNDRED EIGHTY-TWO AND 00/100 DOLLARS - ($755,782.00). A copy of said Contract is on file with the Office of the City Clerk and made available for public inspection, according to law.

SECTION 2. That this Ordinance shall be in full force and effect from and after its passage and any and all necessary approval by the Mayor.

Council Member

APPROVED AS TO FORM AND LEGALITY

Malak Heiny, City Attorney

Bid Tabulation

Project Name: Headwaters Park Fountain Renovation
Project No.: 2022018
QuestCDN: 9275422
Quotes Due: 9/26/2024

CONTRACTOR:	Hamilton Hunter Builders Inc.	Schenkel Construction Inc.
Base Bid	**$798,132.00**	**$1,015,000.00**
Alternate No. 1 - Add lights in bollards	$18,150.00	$13,776.00
Alternate No. 2 - Change benches from stainless steel to aluminum (Accepted)	-$47,350.00	-$47,350.00
Alternate No. 3 - Remove outdoor shower (Accepted)	-$10,000.00	-$10,000.00
Contingency Allowance (Accepted)	$15,000.00	$15,000.00
Total with Contingency and accepted Alternates	**$755,782.00**	**$972,650.00**

SERVICE AGREEMENT: **Headwaters Park Fountain Improvement**

SUPPLIER NAME **Hamilton Hunter Builders, Inc.**	CITY DEPARTMENT **Parks and Recreation**
STREET ADDRESS **915 Lafayette St**	STREET ADDRESS **705 E. State Blvd.**
CITY, STATE, ZIP CODE **Fort Wayne, IN 46802**	CITY, STATE, ZIP CODE **Fort Wayne, IN 46805**
ATTENTION **Holly Hunter**	INVOICE ADDRESS **705 E. State Blvd.**
TELEPHONE **260-423-3577** / FAX	CITY, STATE, ZIP CODE **Fort Wayne, IN 46805**
EMAIL ADDRESS **hhunter@hamiltonhunterbuilders.com**	ATTENTION **Steve Schuhmacher**
	TELEPHONE **(260) 427-6401** / FAX **(260) 427-6020**

Service Description	**Rates**
Improvements per contract documents.	
Aggregate Price	**$755,782.00**

The following is made a part of this Agreement:

SERVICE ADDRESS **Headwaters Park – 333 S. Clinton**
CITY, STATE, ZIP CODE **Fort Wayne, IN**
AGREEMENT START DATE **Date given on Purchase Order**
AGREEMENT END DATE **Project Substantial Completion**

This Agreement Is entered into between Supplier and the City. The additional terms and conditions on the reverse side hereof are part of this Agreement. Capitalized terms on this page are used as defined terms when the context so requires. The City may extend the Contract at its option, for an equivalent period, by written notice to the Supplier not less than thirty days prior to the expiration date.

SUPPLIER:	City of Fort Wayne / Board of Park Commissioners
By (Signature): Holly Hunter	By (Signature): Steve McDaniel
Printed Name: Holly Hunter	Printed Name: Steve McDaniel
Title: President	Title: Executive Director
Date: 10/11/2024	Date: 10/14/24
FEDERAL TAX ID NUMBER: 35-1559623	

ADDITIONAL TERMS AND CONDITIONS

1. SERVICES. Supplier agrees to perform the Services beginning on the Begin Date and continuing until the Services are completed. Supplier warrants that the Services will be completed on or before the End Date. TIME IS OF THE ESSENCE. Supplier warrants that all Services shall conform to the Service Description, be of good quality and workmanship, and be free from defects. Supplier further warrants that all goods furnished in connection with the Services shall be merchantable and suitably safe and sufficient for the purpose for which they are normally used. Supplier warrants that it has good title to goods supplied hereunder and that they are free of all liens and encumbrances. These warranties are in addition to those implied in fact or in law. For the purposes of this Agreement, the term "Services" shall include any goods furnished in connection with the Services.

2. INVOICES. Supplier shall invoice the City for Services performed according to the Rates, Billing Interval, and Invoice Address. Invoices shall be rendered in triplicate and shall itemize the Services performed, the Service Address, and the corresponding rates and taxes, if any. Payment shall be due within thirty (30) days after the invoice date or the date of completion of the invoiced Services, whichever occurs later, provided that the City shall not be obligated to make any payment to Supplier hereunder until Supplier has furnished proof satisfactory to the City of full payment for all labor, materials, supplies, machinery, and equipment furnished for or used in performance of this Agreement or has furnished all necessary waivers of lien supported by affidavits, all satisfactory to the City, establishing that all liens and rights to claim liens that could arise out of the performance of the Services have been waived. Payment of invoices shall not constitute acceptance of the Services, and invoices shall be subject to adjustment for defects in quality or any other failure of Supplier to meet the requirements of this Agreement. The City may at any time set off any amount owed by the City to supplier against any amount owed by Supplier or any of its affiliated companies to the City.

3. INDEPENDENT CONTRACTOR RELATIONSHIP. City and Supplier are and shall remain as independent contractors with respect to each other. The persons provided by Supplier to perform the Services shall be Supplier's employees and shall be under the sole and exclusive direction and control of Supplier. They shall not be considered employees of the City for any purpose. Supplier shall be responsible for compliance with all laws, rules and regulations involving, but not limited to, employment of labor, hours of labor, health and safety, working conditions, and payment of wages with respect to such persons. Supplier shall also be responsible for payment of taxes, including federal, state and municipal taxes chargeable or assessed with respect to its employees, such as Social Security, unemployment, Workers' Compensation, disability insurance, and federal and state withholding. Supplier shall also be responsible for providing such reasonable accommodations, including auxiliary aids and services, as may be required under the Americans With Disabilities Act, 42 U.S.C. 12101 et seq., so as to enable any disabled person furnished by Supplier to perform the essential functions of the job. Supplier agrees to defend, indemnify, and hold harmless the City from and against any loss, cost, claim, liability, damage, or expense (including attorney's fees) that may be sustained by reason of Supplier's failure to comply with this paragraph.

4. INDEMNITY. Supplier shall defend, indemnify, and hold harmless the City (including its officers, employees, and agents) from all demands, damages, liabilities, costs, and expenses (including reasonable attorney's fees), judgments, settlements, and penalties of every kind arising out of its performance of Services including, without limitation, damages for personal injury or death or loss or damage to property due, or claimed to be due, to the negligence or willful misconduct of Supplier including such portion thereof due, or claimed to be due, to the negligence of the City except that Supplier shall have no duty to hold harmless the City for such portion of the foregoing proximately caused by negligence or misconduct of the City, and if any suit, claim, or demand was defended by Supplier, then the City will reimburse Supplier for its pro-rata share of its costs, expenses (including reasonable attorney's fees), and damages. The City may elect to participate in the defense of any suit, claim, or demand by employing attorneys at its own expense, without waiving Supplier's obligations to indemnify, defend, or hold harmless. Supplier shall not settle or compromise any claim, suit, or action, or consent to entry of judgment without the prior written consent of the City and without an unconditional release of all liability by each claimant or plaintiff to the City.

5. LIMITATION OF LIABILITY. Each party's liability to the other for any loss, cost, claim, liability, damage, or expense (including attorneys' fees) relating to or arising out of any negligent act or omission in its performance of obligations arising out of this Agreement, shall be limited to the amount of direct damage actually incurred. Absent gross negligence or knowing and willful misconduct which causes a loss, neither party shall be liable to the other for any indirect, special or consequential damage of any kind whatsoever.

6. INSURANCE. Supplier shall maintain in full force and effect during the performance of the Services the following insurance coverage; provided, however, that if a High Risk Insurance Attachment is attached hereto, the requirements of the High Risk Insurance Attachment shall be substituted in lieu of the following requirements:

(a)	Worker's Compensation	per statutory requirements.
(b)	General Liability	$1,000,000 minimum per occurrence/ $2,000,000 aggregate
(c)	Automobile Liability	$1,000,000 minimum per occurrence
(d)	Products Liability	$1,000,000 minimum per occurrence
(e)	Completed Operations Liability	$1,000,000 minimum per occurrence

The Certificate of Insurance must show the City of Fort Wayne, its Divisions and Subsidiaries as an Additional Insured and a Certificate Holder, with 30 days notification of cancellation or non-renewal. All Certificates of Insurance should be sent to the following address:
City of Fort Wayne Purchasing Department
200 East Berry Street, Suite 490
Fort Wayne, IN 46802

7. HAZARDOUS MATERIALS. Supplier will provide to the City before performing any Services, a statement describing any Hazardous Materials intended and necessary for use in performing the Services. "Hazardous Materials" means any item which may be classified under federal, state, or local law, as hazardous or toxic. Supplier must comply with all federal, state, or local law in the use, transportation, and disposal of such Hazardous Materials.

8. PROGRESS REPORTS. The Supplier shall submit progress reports to the City upon request. The report shall serve the purpose of assuring the City that work is progressing in line with the schedule, and that completion can be reasonably assured on the scheduled date. This contract shall be deemed to the substantially performed only when fully performed according to its terms and conditions and any modification thereof.

9. CONFLICT OF INTEREST. Supplier certifies and warrants that neither it nor any of its directors, officers, agents, representatives or employees which will participate in any way in the performance of the Supplier's obligations hereunder has or will have any conflict of interest, direct or indirect, with the City of Fort Wayne or any of its departments, divisions, agencies, officers, directors or agents.

10. CONFIDENTIALITY OF DATA, PROPERTY RIGHTS IN PRODUCTS, AND COPYRIGHT PROHIBITION. Supplier further agrees that all information, data findings, recommendations, proposals, etc. by whatever name described and by whatever form therein secured, developed, written or produced by the Supplier in furtherance of this contract—shall be the property of the City. The Supplier shall take action as is necessary under law to preserve such property rights in and of the City while such property is within the control and/or custody of the Supplier. By this contract the Supplier specifically waives and/or releases to the City any cognizable property right of the Supplier to copyright, license, patent or other wise use such information, data findings, recommendations proposals, etc.

11. CONFIDENTIALITY OF CITY INFORMATION. Supplier understands and agrees that data, materials, and information disclosed to Supplier may contain confidential and protected data. Therefore, the Supplier promises and assures that data, material, and information gathered, based upon or disclosed to the Supplier for the purpose of this contract, will not be disclosed to others or discussed with other parties without the prior written consent of the City.

12. EMPLOYER CERTIFICATION. In accordance with I.C.§22-5-1.7, Supplier understands and agrees to enroll and verify work eligibility status of all newly hired employees of the contractor through E-Verify program or any other system of legal residence verification as approved by the United States Department of Homeland Security or the department of homeland security. Supplier further understands that they are not required to verify work eligibility of status of newly hired employees of the Supplier through the E-Verify program if the E-Verify program no longer exists. Supplier certifies that they do not knowingly employ any unauthorized aliens.

13. COMPLIANCE WITH LAWS. Supplier warrants that the Services shall be in strict conformity with all applicable local, state and federal laws including, but not limited to, the standards promulgated by the occupational Safety and Health Act, Executive Order 11246, as amended, relative to Equal Employment Opportunity and all other applicable laws, rules, and regulations, including the Civil Rights Act of 1964 pertaining to equal opportunity, Section 503 of the Vocational Rehabilitation Act of 1973, the American with Disabilities Act, Section 402 of the Vietnam Era Veterans Readjustment Assistance Act of 1974 and all applicable immigration laws and regulations including the 1986 Immigration Reform and Control Act et. seq. Supplier agrees to indemnify and hold harmless the City from and against any loss, cost, claim, liability, damage, or expense (including attorney's fees) that may be sustained because of Supplier's breach of such warranty.

14. DEFAULT. In the event that (a) Supplier breaches any warranty contained herein; (b) Supplier fails to provide the insurance certificate required herein; (c) Supplier or Supplier's insurance carrier fails to defend, indemnify, or hold harmless the City as required herein; (d) Supplier's performance of the Services violates applicable law; (e) Supplier admits insolvency, makes an assignment for the benefit of creditors, or has a trustee appointed to take over all or a substantial part of its assets; or (f) Supplier fails to perform or comply with any other provision of this Agreement, such failure, breach, or violation shall constitute a default under this Agreement.

15. TERMINATION. In the event of default by Supplier under this Agreement, the City reserves the right without liability, in addition to its other rights and remedies, to terminate this Agreement by notice to Supplier as to the portion of the Services not yet rendered and to purchase substitute services at Supplier's expense. Supplier shall reimburse the City for the cost of such substitute services upon Supplier's receipt of an invoice therefor.

16. WAIVER. No action or inaction by the City shall constitute a waiver of any right or remedy.

17. CANCELLATION. City may at any time cancel this Agreement in whole or in part for its sole convenience upon written notice to Supplier, and Supplier shall stop performing the Services on the date specified in such notice. the City shall have no liability as a result of such cancellation, except that the City will pay Supplier the Rates for completed Services accepted by the City and the actual incurred cost to Supplier for Services in progress. These payments shall not exceed the Aggregate Price.

18. FORCE MAJEURE. Neither party shall be liable to the other or responsible for nonperformance of any of the terms of this Agreement due to unforeseeable causes beyond the reasonable control and without the fault or negligence of such party, including, but not restricted to acts of God or the public enemy, acts of government, fire, floods, epidemics, quarantine restrictions, strikes, freight embargoes, or unusually severe weather.

19. NOTICES. All notices required or permitted to be made or given hereunder by one party to the other party shall be in writing and shall be deemed to have been given when hand delivered, or on the date stated on the receipt if deposited in the United States mail in certified form, postage prepaid with return receipt requested, and addressed to such other party at its Notice Address or at such other address as may be specified by such other party by written notice sent or delivered in accordance herewith.

20. ASSIGNMENT. Any assignment, in whole or in part, of Supplier's rights or obligation under this Agreement without the prior written consent of the City shall be void. Supplier shall not use subcontractors to perform any part of the Services without the prior written consent of the City.

21. DISPUTE RESOLUTION. The City shall be the sole judge of the quality of services. In the event of any dispute or disagreement between the parties either with respect to the interpretation of any provision of this agreement, or with respect to the performance of either party hereunder, the dispute shall be resolved by the Director of Finance and Administration and will not be subject to arbitration.

22. ACCESS TO RECORDS. The Supplier shall maintain all books, documents, papers, accounting records, and other evidence pertaining to the cost incurred. They shall make such materials available at their respective offices at all reasonable times during the contract period and for three (3) years from the date of final payment under the contract for inspection by the City or by any other authorized representative of city government. Copies thereof shall be furnished at no cost to the City if requested.

23. NONDISCRIMINATION. Pursuant to IC 22-9-1-10, the Civil Rights Act of 1964, and Title VI, Supplier and its subcontractors shall not discriminate against any employee or applicant for employment in the performance of this contract. The Supplier shall not discriminate with respect to hire, tenure, terms, conditions or privileges of employment or any matter directly or indirectly related to employment, because of race, color, religion, sex, disability, national origin or ancestry. Breach of this covenant may be regarded as a material breach of contract. Acceptance of this contract also signifies compliance with applicable Federal laws, regulations, and executive orders prohibiting discrimination in the provision of services based on race, color, national origin, age, sex, disability or status as a veteran.

24. MISCELLANEOUS. If any provision of this Agreement is held to be invalid or unenforceable, the validity and enforceability of the remaining provisions shall not be affected. This Agreement shall be governed by the laws of the state of Indiana and shall be subject to the exclusive jurisdiction of the courts therein. This Agreement embodies the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior agreements and understanding, whether written or oral, and all contemporaneous oral agreements and understandings relating to the subject matter hereof. No agreement hereafter made shall be effective to modify or discharge this Agreement, in whole or in part, unless such agreement is in writing and signed by the party against whom enforcement of the modification or discharge is sought. The paragraph headings are for convenience only and are not intended to affect the interpretation of the provisions hereof. This agreement shall be binding on the parties hereto and their respective personal and legal representatives, successors and assigns.

(This form was last updated November 1, 2016.)

E.B.E. RIDER: Headwaters Park Fountain Improvements (PAS # 2022018, QuestCDN # 9275422)

E.B.E. RIDER

THIS AGREEMENT made and entered into by and between the **CITY OF FORT WAYNE**, hereinafter referred to as **OWNER** and **Hamilton Hunter Builders, Inc.** hereinafter referred to as **CONTRACTOR**,

WITNESSETH:

WHEREAS, the **CONTRACTOR** is the apparent low bidder on construction project commonly referred to as the **Headwaters Park Fountain Improvements**, which project was bid via email submission.

WHEREAS, CONTRACTOR agrees that the goal for qualified Emerging Business Enterprises, hereinafter sometimes referred to as **E.B.E.'s** as subcontractors on this project is **10%** of the contract amount; and

WHEREAS, OWNER has, pursuant to Executive Order 90-01 (as amended 05-08-06), adopted a goal of at least 10% of the contract amount to Emerging Business Enterprises as defined under said Executive Order (as amended 05-08-06); and

WHEREAS, said Executive Order (as amended 05-08-06) states:

"Section 2, Paragraph C. Each contractor shall be required to make a good faith effort to subcontract 10% of the contract amount to Emerging Business Enterprises on each construction contract he/she is awarded. In the event a contractor is unable to subcontract 10% of the contract amount or secure services of an Emerging Business Enterprise, he/she will be required to submit a completed Request for Waiver form on which he/she will provide a written description of the efforts taken to comply with the participation goals."

NOW, THEREFORE, in consideration of the foregoing and of the mutual agreements hereinafter contained, the sufficiency of which consideration is hereby acknowledged, the parties hereto agree as follows:

1. **Conditional Award - Subject to approval by the Common Council of the City of Fort Wayne as stipulated in the construction contract to which this Rider is attached, OWNER awards the construction contract to the CONTRACTOR.**

2. **E.B.E. Retainage requirements - If the contractor is in compliance with the provisions of the construction contract to which this Rider is attached, the Owner will make payments for such work performed and completed. However, in any such case, the Owner will retain five percent (5%) of the total amount owing to insure compliance with this E.B.E. Rider. Upon final inspection and acceptance of the work, and determination by the Fort Wayne Board of Public Works that the contractor has made a good faith effort to subcontract 10% of the contract amount to emerging business enterprises, the contractor will be paid in full.**

   In the event there is a determination that good faith compliance with this E.B.E. Rider has not occurred, appropriate reduction in the final payment pursuant to paragraph 6 of this E.B.E. Rider will be made.

   If the contract is in excess of $100,000, the contract will be subject to the standard Board of Public Works escrow agreement. However, payments to the CONTRACTOR are not to exceed 95% of the total contract amount until the OWNER has verified that the CONTRACTOR has made good faith efforts to attain the E.B.E. goal stipulated in this E.B.E. Rider. Payment of the final 5% of the total contract amount will be dependent upon good faith efforts to comply with this E.B.E. Rider, and subject to reduction in the event of non-compliance as provided in paragraph 6 of this E.B.E. Rider.

3. **Request for Waiver - If, at the time final payment application is made, contractor has not attained the ten 10% E.B.E. goal, contractor shall file with the final payment application a "Request for Waiver." Said Request for Waiver shall contain a written description of the efforts taken by Contractor to attain the 10% E.B.E. goal.**
4. **Determination of Waiver Requests - The Contract Compliance Department of the City of Fort Wayne shall examine all Requests for Waiver to determine if Contractor's efforts constitute good faith efforts to attain such goal and shall submit recommendations concerning said requests for Waiver for the final determination of the Board of Public Works of the City of Fort Wayne.**
5. **Good Faith Per Se. - In any case, a Contractor shall be deemed to have made good faith efforts at compliance where E.B.E.'s have subcontracted for every sub-contract for which there are qualified E.B.E.'s available.**
6. **Consequence of noncompliance - In the event the Board of Public Works approves a recommendation that contractor failed to make good faith efforts at compliance, the contract shall be reduced by the amount calculated as the difference between 10% and the percentage level met. Said amount shall be added to the City of Fort Wayne E.B.E. Bond Guarantee Fund and contractor agrees to accept the reduced amount as full payment under the terms of his/her contract.**
7. **Waiver approved - In the event the Board of Public Works determines that a good faith effort to comply with this E.B.E. Rider has been made, the contract shall not be reduced, and the balance owing to the contractor shall be paid in full.**

IN WITNESS WHEREOF,

The parties have executed the E.B.E. Rider this 22nd day of October, 2024.

CONTRACTOR:

BY: _____ **Company: Hamilton Hunter Builders, Inc.**

Name Printed: Holly Hunter

ATTEST:

_____

Steve McDaniel, Director

Fort Wayne Parks and Recreation

Revised 2-09

Headwaters Park
333 S. Clinton

Headwaters Park Fountain Improvement Project

QuestCDN eBidDoc# 9275422

CITY OF FORT WAYNE
PARKS AND RECREATION DEPARTMENT
FORT WAYNE, INDIANA
AUGUST 23, 2024

Project No. 2022018
Quotes Due: September 26 at 11:00 AM

TITLE PAGE

TABLE OF CONTENTS

SPECIFICATIONS AND PROJECT FORMS

END OF TABLE OF CONTENTS

SECTION 000115 - LIST OF DRAWING SHEETS

1.1 LIST OF DRAWINGS

A. Drawings: Drawings consist of the Contract Drawings and other drawings listed on the Title Sheet or Table of Contents page of the separately bound drawing set, as modified by subsequent Addenda and Contract modifications.

B. List of Drawings: Drawings consist of the following Contract Drawings and other drawings of type indicated:

1. **Sheet T-1 Title Sheet**
2. **Sheet A-1 Fountain Plan**
3. **Sheet A-2 Fountain Details**
4. **Sheet A-3 Pumphouse**
5. **Sheet MEP-1 Mechanical, Electrical, Plumbing**
6. **Sheet FC-0 Cover Sheet and Drawing Index**
7. **Sheet FN-1 General Notes, Design Statement, and Equipment List**
8. **Sheet FD-1 Fountain Equipment Details**
9. **Sheet FM-1 Fountain Site Plan**
10. **Sheet FM-2 Fountain Dimension Plan**
11. **Sheet FM-3 Fountain Suction, Drain, and Vent Piping Plan**
12. **Sheet FM-4 Fountain Discharge and Fill Piping Plan**
13. **Sheet FM-5 Fountain Equipment Skid Detail Sheet**
14. **Sheet FE-1 Fountain Electrical Plan**
15. **Sheet FE-2 Fountain Electrical Schematic**

END OF SECTION 000115

SECTION 001113 - ADVERTISEMENT FOR BIDS

1.1 PROJECT INFORMATION

A. Notice to Bidders: Qualified bidders may submit bids for project as described in this Document. Submit bids according to the Instructions to Bidders.

1. Regulatory Requirements: City of Fort Wayne shall govern submittal, opening, and award of bids.

2. Project Identification: Headwaters Park Fountain Improvement Project, QuestCDN eBidDoc#9275422, Project Number: 2022018

3. Project Location: 333 S. Clinton Street, Fort Wayne, IN 46802

B. Owner: Fort Wayne Parks and Recreation

1. Owner's Representative: Steve Schuhmacher, Deputy Director

C. Architect: Edward J. Welling, Grinsfelder Associates Architects, Inc.

D. Project Description: Project consists of removal of the existing and installation of a new source fountain in Headwaters Park

E. Construction Contract: Bids will be received for the following Work:

1. General Contract (all trades).

1.2 BID SUBMITTAL AND OPENING

A. Owner will receive sealed lump sum bids until the bid time and date at the location given below. Owner will consider bids prepared in compliance with the Instructions to Bidders issued by Owner, and delivered as follows:

1. Bid Date: September 26. 2024
2. Bid Time: 11:00 AM EDT
3. Location: Online bid submission to www.QuestCDN.com bid site

B. Bids will be thereafter publicly opened and read aloud.

1.3 PREBID MEETING

A. Prebid Meeting: A Prebid meeting for all bidders will be held at Fort Wayne Parks and Recreation Department, 705 E. State Blvd, Fort Wayne, IN 46805 on Tuesday, September 10, 2024, 1:00 p.m. local time. Prospective prime bidders are requested to attend.

1.4 DOCUMENTS

A. Printed Procurement and Contracting Documents: Obtain on date of advertisement, unless stated otherwise. Documents will be provided to prime bidders only; only complete sets of documents will be issued.

1. Documents shall be provided in electronic format and emailed to prime bidders as requested by prime bidder.

1.5 TIME OF COMPLETION & AND LIQUIDATED DAMAGES

A. Successful bidder shall begin the Work on receipt of the Notice to Proceed and shall complete the Work within the Contract Time.

1.6 BIDDER'S QUALIFICATIONS

A. Bidders must be properly licensed under the laws governing their respective trades and be able to obtain insurance required for the Work. Refer to Section 002113 "Instruction to Bidders" for specific requirements including bonds.

1.7 NOTIFICATION

A. This Advertisement for Bids document is issued by Steve Schuhmacher, Deputy Director of Park Maintenance, Fort Wayne Parks and Recreation.

END OF SECTION 001113

SECTION 001116 - INVITATION TO BID

1.1 PROJECT INFORMATION

A. Notice to Bidders: Qualified bidders are invited to submit bids for the Project as described in this Document according to the Instructions to Bidders.

B. Project Identification: Headwaters Park Fountain Improvement Project, Project Number: 2024022

1. Project Location: 333 S. Clinton Street, Fort Wayne, IN. 46802

C. Owner: City of Fort Wayne Parks and Recreation.

1. Owner's Representatives:

a. Steve Schuhmacher, Deputy Director
Steve.schuhmacher@cityoffortwayne.org
(260) 427-6401

b. Dave Weadock, Manager of Project Administration
david.weadock@cityoffortwayne.org
(260) 427-6417

D. Architect: Edward J. Welling, Grinsfelder Associates Architects, Inc. 520 S. Calhoun Street, Suite 201, Fort Wayne, IN 46802. Phone: 260-424-5942. edwelling@grinsfelderarchitects.com

E. Project Description: Work shall provide for a complete installation and shall be carried out in a timely manner according to the Contract Documents.

1. Base Bid: Removal of the existing and installation of a new source fountain in Headwaters Park.

2. Alternate Bid Number One (A-1): The amount as an ADD for all required to furnish and install receded light in bollards as shown.

3. Alternate Bid Number Two (A-2): The amount as a DEDUCT for all required to furnish and install stainless steel benches between bollards as shown.

4. Alternate Bid Number Three (A-3): The amount as a DEDUCT for all required to furnish and install shower and related drain structure and piping as shown.

F. Construction Contract: Bids will be received for the following Work:

1. General Contract (all trades).

1.2 BID SUBMITTAL AND OPENING

A. Owner will receive sealed bids until the bid time and date at the location indicated below. Owner will consider bids prepared in compliance with the Instructions to Bidders issued by Owner, and delivered as follows:

1. Bid Date: September 26, 2024
2. Bid Time: 11:00 AM EDT
3. Location: Online bid submission to www.QuestCDN.com website

B. Bids will be thereafter publicly opened and read aloud.

C. Refer to "Instructions to Bidders" Section 002113 for required submittal documents.

1.3 PREBID MEETING

A. A Prebid Meeting for all bidders will be held prior to bids due. Prospective bidders are requested to attend.

1. Location: 705 E. State Blvd., Fort Wayne, IN 46805
2. Date: Tuesday, September 10, 2024
3. Time: 1:00 p.m. local time

B. Attendance:

1. Prime Bidders: Attendance at Prebid meeting is recommended.
2. Subcontractors: Attendance at Prebid meeting is recommended.

C. Bidder Questions: Submit written questions to be addressed at Prebid meeting minimum of two business days prior to meeting.

D. Agenda: Prebid meeting agenda will include review of topics that may affect proper preparation and submittal of bids. Agenda will be available at the meeting.

1.4 DOCUMENTS

A. Electronic Documents: Contract Documents shall be available to prime bidders only via email as requested by the Contractor.

1.5 TIME OF COMPLETION

A. Successful bidder shall begin the Work on receipt of the Notice to Proceed and shall complete the Work within the Contract Time.

Substantial Completion date is April 15, 2025.

1.6 BIDDER'S QUALIFICATIONS

A. Bidders must be properly licensed under the laws governing their respective trades and be able to obtain insurance and bonds required for the Work. Refer to "Instructions to Bidders" Section 002113 for required documents including bonds.

END OF SECTION 001116

SECTION 002113 - INSTRUCTIONS TO BIDDERS

1.1 INSTRUCTIONS TO BIDDERS

A. BOARD OF PARK COMMISSIONERS
CITY OF FORT WAYNE, INDIANA
Non-Federally Funded Construction

B. Bids shall include labor, material, and all services necessary to complete the project in strict accordance with the Drawings and Specifications as prepared and on file in the office of the Owner.

C. Bids shall be submitted as lump sum on the Bid Form provided and will be received as a Unified Contract.

D. Indiana State Gross Retail and Use Tax are not to be included in the Bid Price, as Fort Wayne Parks and Recreation Department is tax exempt. The provision shall apply both to transactions between Fort Wayne Parks and Recreation Department and the Unified Contractor and any subcontractors and to transactions between the material to the Unified Contractor.

E. Bids shall not be modified, withdrawn or canceled, without the Owner's written consent, for a period of ninety (90) calendar days commencing from the day Bids are received.

F. The successful Bidder shall be required to furnish insurance covering Workmen's Compensation, Public Liability and Property Damage and any other which may be required before the issuance of the Contract.

G. The Owner reserves the right to waive any and all formalities and informalities or to reject any and all Bids. The Owner shall accept Bids which, in its judgement, are in its own best interests. Bids received after the time set to receive Bids shall be returned unopened.

H. The Contractor shall be responsible for obtaining required permits from local, state and federal agencies as required to perform and complete the work as indicated in the Contract Documents. Costs associated with permits shall be included in the Contractor's Bid.

[x] **INCLUSION OF CLAUSES**. If a clause in this Instruction to Bidders (ITB) has a box beside it [ ], the clause applies to the ITQ only if it contains a check mark or an "X". Any questions as to whether a clause is included or not, should be referred to the Fort Wayne Parks and Recreation Project Administration Section.

[x] **SUBMITTING A BID.** Before submitting a bid, each bidder shall examine the Drawings carefully and shall read the Specifications and all other proposed Contract Documents. Each bidder shall fully inform themselves prior to quoting as to the existing conditions and limitations under which the Work is to be performed and shall include in their bid a sum to cover all the cost of items necessary to perform the work as set forth in the proposed Contract Documents. No allowance will be made to a bidder because of lack of such examination or knowledge. The submission of a bid will be considered as conclusive evidence that the bidder has made such examination.

Bidders shall assume the responsibility, on behalf of his subcontractors and material suppliers for obtaining and verifying all measurements and their accuracy at the site which are applicable to any and all materials and labor to be furnished by them or furnished to others for installation. No request for additional compensation, or omission of work, from the contract which is due to failure of the Bidder in this regard, if ultimately awarded such, will be considered.

If a bidder finds discrepancies in, or omissions from, the bid document or has questions about the project, he should at once contact the Fort Wayne Parks and Recreation Project Administration Section. Interpretation or correction of proposed Contract Documents will be made only by Addendum and will be mailed or faxed to each General Contract Bidder of record. The Owner will not be responsible for any other explanations or interpretations of the proposed Contract Documents.

Bids shall be submitted via the www.QuestCDN.com website. Bid shall include completed forms and documents as required in the contract documents. The City of Fort Wayne will not accept any late filing regardless of reason, including technical difficulties. Bids shall include the exact quantities of each item shown on the quoting form for each section of the work, unless the Instructions to Bidders otherwise states. No bids received after the time fixed for receiving them will be considered. Late bids shall not be permitted for submission. Hardcopy, oral, telephonic or telegraphic bids are invalid and will not receive consideration.

No bid will be accepted from, or contract awarded to any person, firm, or corporation that is in arrears to the City of Fort Wayne, Indiana, upon any debt or contract, or, who has failed to execute, in whole or in part in a satisfactory manner, any contract with the City; or, who is a defaulter as to surety or otherwise, upon any obligation to the City of Fort Wayne, Indiana. The Fort Wayne Parks and Recreation may debar or suspend a participant and/or, affiliate from contract awards to protect the public interest and the City of Fort Wayne, for any of the clauses referenced in the Determination of Responsibility.
A bidder may withdraw their bid, either personally or by written request, at any time prior to the scheduled day and hour of bids being due. No bidder may withdraw their bid for a period of ninety (90) calendar days after the date set for opening thereof, and bids shall be subject to acceptance by the Owner during this period.

If the Bidder has any proprietary information that cannot be disclosed, the proprietary information should be submitted as a separate package. Bidder/Proposer must understand that all information submitted is subject to public records request after award is made. If proprietary information is requested bidder/proposer will be contacted and given an opportunity to defend its position that the information is proprietary.

[x] **LOCATION OF SUBMITTING A BID**

[x] Bids shall be submitted electronically via the www.QuestCDN.com website on or before the day and hour set forth in the Invitation to Bidders. No quote received after that time will be accepted.

[x] **BID BOND OR DEPOSIT**. Each bid must be accompanied by a bond executed by the bidder and surety satisfactory to the Fort Wayne Parks and Recreation in a sum of **five** percent **(5%)** of the aggregate amount of the bid, but in no case less than $100.00; or the bidder may deposit with the Fort Wayne Parks and Recreation in lieu of such bond, a certified check on a solvent bank in a sum of **five** percent **(5%)** of the aggregate bid or proposal, but in no case less than $100.00, which certified check

shall be payable to the Fort Wayne Board of Park Commissioners. The bid bond or certified check shall serve as a guarantee that should the said bid be accepted by the Fort Wayne Parks and Recreation, the bidder will, within ten (10) calendar days after the time he is notified of the acceptance of the bid, enter into a contract with the Fort Wayne Parks and Recreation Department for the work bid upon and give bond with surety to be approved by the Fort Wayne Parks and Recreation Department insuring the faithful completion of the contract.

In case a bid is not accepted, the obligation of the said bond shall be null and void or the certified check will be returned to the bidder, as the case may be. In case a bid is accepted, and the bidder does not enter into a contract with the Fort Wayne Parks and Recreation Department for the work bid upon within ten (10) days after notification of award, then the obligation of the bond or the certified check shall be forfeited to the Fort Wayne Parks and Recreation Department for ascertained and/or liquidated damages for failure to enter into a contract. Provided that the Fort Wayne Parks and Recreation's action in forfeiting the bond or retaining the certified check shall not preclude the Fort Wayne Parks and Recreation from taking any further action against the contractor to recover for all actual damage the Fort Wayne Parks and Recreation has suffered.

[x] **DOCUMENTS REQUIRED WITH EACH BID**. The following documents must be completed, endorsed, and submitted with each bid. See also section titled "VENDOR COMPLIANCE FORMS".

- [x] Bid Form
- [x] Bid Bond
- [x] *Affirmative Action Program - Certification of Non-segregated Facilities. Once received, these forms will be kept on record for a period of one (1) year. This will eliminate the need to submit these forms with each bid. Your bid will be considered incomplete if you fail to submit these documents to the Office of Vendor Compliance as required.
- [x] Certificate in lieu of Financial Statement
- [x] Emerging Business Enterprise (EBE) Declaration Form
- [x] Form 96, including all required attachments
- [x] Indiana Contractor Certification Form
- [x] Conflict of Interest (Submit on form provided or on company letterhead)
- [x] Drug Policy Acknowledgement Form
- [x] E-Verify Form
- [x] Non-Collusion Affidavit
- [x] Performance and Payment Bond (file at time of award)
- [x] List of Subcontractors and Suppliers
- [x] Affidavit and Waiver of Lien (file at time of invoice)
- [x] Schedule of Values
- [x] Estimated Construction Schedule

* Effective immediately, bidders are required to submit the following form annually to the Office of Vendor Compliance, Citizens Square, 200 East Berry Street, Suite 490, Fort Wayne, IN 46802.

[x] **ANTI-DISCRIMINATION UNDER INDIANA CODE CHAPTER 5-16-6-1.**

The contractor agrees as follows:

1. That in the hiring of employees for the performance of work under the contract or any subcontract hereunder, no contractor or subcontractor, nor any person acting on behalf of such contractor or subcontractor, shall, by reason of race, religion, color, sex, national origin or ancestry, discriminate against any resident of the State of Indiana who is qualified and available to perform the work to which the employment relates;

2. That no contractor, subcontractor, nor any person on his behalf shall in any manner discriminate against or intimidate any employee hired for the performance of work under the contract on account of race, religion, color, sex, national origin or ancestry;
3. That there may be deducted from the amount payable to the contractor by the City of Fort Wayne under the contract a penalty of five dollars ($5.00) per person for each calendar day during which such person is discriminated against or intimidated in violation of the provisions of the contract; and,
4. That the contract may be cancelled or terminated by the City or Fort Wayne and all money due or to become due hereunder may be forfeited for a second or any subsequent violation of the terms of conditions of this clause.

[x] **ANTI-DISCRIMINATION UNDER CODE OF THE CITY OF FORT WAYNE, SECTION 93.036**. In the performance of work under the contract or any subcontract hereunder the contract, subcontractor, and any person acting on behalf of such contractor or subcontractor will not discriminate against any person who is qualified and available to perform the work to which the employment relates.

1. The contractor, subcontractor, or any person acting on behalf of such contractor or subcontractor will not obstruct the enforcement of this provision.
2. The contractor, subcontractor, or any person acting on behalf of such parties will not retaliate against any person because of good faith, reasonable actions taken to overcome, alleviate, or report discrimination.
3. Enforcement of this chapter shall be through order of City of Fort Wayne in the following manner:
   a. Whenever any member of the Division of the City of Fort Wayne awarding this contract, or whenever a Compliance Officer of the City of Fort Wayne has reason to believe that any of the provisions of this clause and of Chapter 93.036 have been violated, the matter may be referred to the Metropolitan Human Relations Commission for investigation and initiation of discrimination charges against the contractor or subcontractor. Cases over which the Metropolitan Human Relations Commission has no jurisdiction shall be investigated by the Compliance Officer of the City.
   b. A final order of the Metropolitan Human Relations Commission shall be forwarded to the Compliance Officer of the City of Fort Wayne and to the Division awarding the contract which may invoke one of the remedies set forth in subsection (c) of the clause. If it is a matter over which the Metropolitan Human Relations Commission does not have jurisdiction, the Division awarding the contract shall conduct a hearing to determine whether there has been a breach of Ordinance Chapter 93.036.
   c. If the division awarding the contract determines that a contractor, subcontractor, or any person acting on behalf of such contractor or subcontractor has violated any provisions of Ordinance Chapter 93.038, whether discrimination, obstructing, retaliating, or otherwise, the Division awarding the contract may:
      1) Deduct from the amount of payable to the contractor by the City of Fort Wayne under such contract the sum of not less than ten dollars ($10.00) per day, nor more than one thousand dollars ($1,000.00) per day per each violation. Each day upon which the violations exist shall be deemed a separate offense.
      2) The Division of the City awarding the contract may cancel or terminate this contract, and all money due or to become due under the contract may be forfeited for a second or any subsequent violation of Chapter 93.038.

[x] **ASSISTANCE.** Questions regarding the instructions, special conditions, plans or specifications, shall be directed to the following offices:

1. Fort Wayne Parks and Recreation

   a. Steve Schuhmacher, Deputy Director
   steve.schuhmacher@cityoffortwayne.org
   (260) 427-6401

   b. Dave Weadock, Manager of Project Administration
   david.weadock@cityoffortwayne.org
   (260) 427-6417

2. Office of Vendor Compliance:
   a. Jessica Bucher, Compliance Officer, Purchasing
   jessica.bucher@cityoffortwayne.org
   (260) 427-2445

[x] **VENDOR COMPLIANCE FORMS.** The City's contract is with the Prime Contractor; therefore, the Prime Contractor is responsible for the compliance of all suppliers, subcontractors, and lower-tier subcontractors. It is also the responsibility of the Prime Contractor to ensure inclusion of applicable labor standard provisions, wage determinations, and compliance forms to the various firms. All documentation will be sent to the Prime Contractor, who shall carefully review payrolls & compliance information (including their own) before submitting the information to the Compliance Office. If the Prime Contractor suppliers, subcontractor, or lower-tier subcontractor, fails to provide the Office of Vendor Compliance with the required reporting documentation, or other requested information, any penalties or sanctions will apply to the Prime Contractor. The City of Fort Wayne Office of Vendor Compliance is the contact office for the following items, not the Fort Wayne Parks and Recreation Project Administration Section. 5% retainage will be withheld until the Contractor submits all required contract documentation and is found to be acceptable to the Office of Vendor Compliance.

In accordance with applicable Federal, State, and Local regulations, please be advised of the following required compliance forms:

[ ]WAGE SCALE REPORT: Prime and subcontractors submit prior to start of construction, and shall ensure all classifications are listed. If a classification is not present, the Prime Contractor must contact the Office of Vendor Compliance immediately with supporting data. Sub classifications must be specific (i.e., whenever laborers are paid different wage rates for "finish" than rough work, it must be separated and recorded on the wage scale report and payroll form.).

[x]SUBCONTRACTOR ELIGIBILITY FORM: Subcontractors and suppliers submit prior to start of construction. Prime Contractor shall not contract with subcontractor, lower-tier sub-contractor or supplier suspended or debarred by the State, or the City of Fort Wayne.

[x]MONTHLY EMPLOYMENT REPORT: Prime and subcontractors submit on a monthly basis for "this project only". The form references employee work hours by trade, based on race and sex for each month there was activity.

[x]MANPOWER UTILIZATION SUMMARY: Prime submits project-end report within ten (10) days "after" completion of project. The report comprises all firms who contracted on the project, including the total number of workforce hours broken down by race, sex, and minorities. Minority Business Enterprises, Women Business Enterprises, & Emerging Business Enterprises contract dollar amount and participation percentage is inclusive, if applicable.

[x]EMPLOYEE INTERVIEWS: Employee interviews may be done on site by Compliance staff.

[ ]APPRENTICE EMPLOYMENT: The Prime and / or subcontractor, is required to furnish the

Compliance Office with the apprentice appropriate wage rate and provide written evidence of the bona fide apprenticeship program of the 'first' payroll. Approved programs include those registered with the U. S. Department of Labor, Employment & Training Administration, Bureau of Apprenticeship and Training, or with an approved State apprenticeship agency.

[x] **AWARD OF CONTRACT**. After bids are opened and read, the Fort Wayne Parks and Recreation Department will examine to determine if they are responsive. In order to be responsive, the bidder must complete all blanks requiring completion and must submit all information required to be submitted. The Fort Wayne Parks and Recreation reserves the right to reject any and all bids for failure to comply with applicable laws and/or with the Instruction to Bidders. The Fort Wayne Parks & Rec. Dept. also reserves the right to waive any defect in any bid and to reject bid due to funding constraints.

Each Contractor and Subcontractor performing Work in connection with the Project shall meet one of the classifications in the Contractor Tier, as defined in the Supplementary Conditions.

Each Tier 1 Contractor shall contribute at least 15% of the Contract Price, as determined on the date the Contract is awarded, in (1) labor performed by the Tier 1 Contractor's employees; (2) materials supplied directly by the Tier 1 Contractor; (3) services supplied directly by the Tier 1 Contractor's employees; or (4) any combination of (1) through (3).

Prior to awarding any contract pursuant to this Bid, the Fort Wayne Parks and Recreation will make a determination of responsibility. An award of a contract to a bidder shall constitute an affirmative determination of responsibility.
In reaching a determination of responsibility, Fort Wayne Parks & Rec. may consider these factors:

(a) The Contractor's record of integrity.
(b) The Contractor's experience and past performance record in construction work.
(c) The Contractor's financial status.
(d) The Contractor's capability to perform the project.
(e) Whether the bidder is in arrears upon or in default of any debt, contract or other obligation to the City of Fort Wayne.
(f) Whether the bidder is debarred from Federal, State or City of Fort Wayne contracts.
(g) Whether the bidder is engaged in litigation with the City of Fort Wayne.

In arriving at a determination of responsibility, the Fort Wayne Parks and Recreation may institute a pre-award survey on any or all bidders. That pre-award survey may examine any of the considerations relating to a bidder's responsibility as set forth above. Bidder s will cooperate with the pre-award survey. Failure to cooperate can result in a finding of non-responsibility.

The Contract will be awarded to the lowest legal bidder complying with the conditions of the Contract Documents, provided their bid is reasonable, and it is in the interest of the Owner to accept it. If bids are otherwise equal, award will be made to that bidder granting the largest prompt payment discount. The Fort Wayne Parks and Recreation reserves the right to reduce any quantities as a result of funding constraints. The bidder, to whom the award is to be made, will be notified at the earliest possible date. The Owner, however, reserves the right to reject any and all bids, and waive any informality in bids received whenever such rejection or waiver is in the interest of the Owner.
[ ] It is the intent of the Owner to award the Contract to One Contractor.

[x] It is the intent of the Owner to award the Contract to One Contractor. The Owner reserves the right to accept all, none, or any of the requested Base Bids and Alternates.

[ ] The Owner reserves the right to award separate Contracts for each requested Base Bids if it is in the interest of the Owner to do so.

[ ] The Owner reserves the right to award separate Contracts for each requested Base Bids if it is in the interest of the Owner to do so. The Owner reserves the right to accept all, none, or any of the requested Alternates for each Base Bid.

[ ] **COMMON WAGE SCHEDULE PAYMENTS** - PURSUANT TO INDIANA CODE 5-16-7-1. All contractors and subcontractors working on the project awarded pursuant to this contract shall pay the common wage rates for skilled, semi-skilled, and unskilled laborers. This wage determination has been made in accordance with the procedures set forth in Indiana Code 5-16-7-1. This determination and the required wage rates are included in the Project Manual.
If a bidder is awarded a contract, he shall file a schedule of wages, on forms provided by the City of Fort Wayne Vendor Compliance Office. Penalties for failure to pay common construction wage rate are set forth in Indiana Code 5-16-7-3. The successful prime contractor shall be responsible for obtaining schedules from all subcontractors. All scheduling shall be filed before the contractor commences any work on the project.
In the event of failure or refusal of the Prime Contractor, Subcontractor, or lower-tier Subcontractor to comply with the appropriate employee wage rate, action will be taken to satisfy the wage discrepancy. This includes, but is not limited to, the withdrawal of the dollar amount "due" from the Prime Contractor's progress payment, and / or, withholding any progress or retainage payment.

[x] **PERFORMANCE AND PAYMENT BOND**. Approved Performance and Payment bonds guaranteeing faithful and proper performance of the work and materials, to be executed by an acceptable surety company, will be required of each Contractor, at his own expense, at the time he executes his contract. The bond will be in the amount of 100 percent (100%) of the contract price, and must be in full force and effect for a period of twelve (12) months from the date of acceptance of the final payment for the work. The Performance Bond shall contain the following clause: "The said Surety, for value received, hereby stipulates and agrees, that no change, extension of work to be performed thereunder, or the specifications accompanying the same, shall in any way affect its obligation on this bond, and it does hereby waive notice of any change, extension of time, alteration or addition to the terms of the contract, or to the work of specification."

[x] **COUNCILMANIC APPROVAL AND RATIFICATION OF CONTRACT.** If required by City Ordinance, the contract for the work specified herein, although executed on behalf of the City by the Mayor and the Board of Park Commissioners, shall not be binding upon the City; unless, and until the contract has been ratified and approved by the Common Council of the City of Fort Wayne, Indiana. And, if the Common Council fails to approve the contract within ninety (90) days after the date of bid opening, then the Contractor shall not be bound to the contract unless he elects to be so bound.

[ ] **LIQUIDATED DAMAGES.** It is hereby agreed by and between the Fort Wayne Parks and Recreation and Contractor, time is of the essence of this agreement. The agreement will include a stipulation that liquidated damages will be established in the amount of **$200.00 per calendar day** for each calendar day after the agreed completion date that the Work is not fully certified by the Owner's Representative as being Substantially Complete. Substantial Completion date is established as April 15, 2025.

The Contractor shall not be charged with liquidated damages or any excess cost when the Owner determines that the Contractor is without fault and the Contractor's reasons for the time extension are acceptable to the Owner; provided that the Contractor gives to the Owner a written request for time extension within ten (10) calendar days from the event giving rise to the claim. The parties further agree that causes beyond the control of the contractor may delay the completion date. Delays beyond the control of the Contractor are limited to the following: Acts of God, strikes, lockouts or industrial disturbances, acts of public enemies, restraining orders of any kind by the government of the United States of America, or, of the State of Indiana, or any of their departments, agencies, or officials, or any civil or military authority, insurrections, riots, landslides, earthquakes, fires, incapacitating storms, floods, and explosions.

[x] **EMERGING BUSINESS ENTERPRISE (EBE) PARTICIPATION GOAL.**

[x] Pursuant to Executive Order 90-01 (as amended 05/08/06), the City of Fort Wayne has established a 10% goal of the contract dollar amount on construction projects to Emerging Business Enterprises (EBE). If the Prime Contractor is unable to meet the goal, he must request a Waiver / Reduction Form from the City of Fort Wayne Office of Vendor Compliance, document the efforts taken, or other rationale for not complying with the Order, and return the form to the Compliance Office prior to request for final payment. If the explanations are unacceptable, a recommendation will be made to the Owner that the contract dollar amount be reduced by the undistributed 5% retainage. Contact the Office of Vendor Compliance, 427-1370 for more information. For a current list of companies that are EBE's, go to the City of Fort Wayne's website at: www.cityoffortwayne.org, then click on Public Works, then click on Vendor Compliance, then scroll down to Certified EBE/MBE Enterprise Directory.

[ ] The 10% Emerging Business Enterprise (EBE) and Minority Business Enterprise (MBE) participation goal has been waived by the City of Fort Wayne Vendor Compliance Office for this project. Participation from EBE and MBE Contractors, though not required, are still encouraged.

[x] **ESCROW AGREEMENT.** Pursuant to Indiana State Law IC 36-1-12-14, if the Contract is in excess of $100,000, the Contract will be subject to the standard City of Fort Wayne Board of Park Commissioners Escrow Agreement. Two separate Purchase Order numbers will be generated, 95% of the Contract price in the name of the Contractor, and 5% of the contract price in the name of the Contractor's Escrow Agent. 100% of the Contract price will be paid to the Contractor; however, payments to the Contractor are not to exceed 95% of the total Contract amount until the Owner has verified that the Contractor has completed all Punch List items, made good faith efforts to attain the EBE goal if it was required, and all Vendor Compliance documentation has been approved by the Office of Vendor Compliance. Payment of the final 5% of the Contract amount will be dependent upon good faith efforts to comply with the aforementioned sentence, and subject to reduction in the event of non-compliance. A Copy of a blank Escrow Agreement is included in this Project manual for review.

[x] **ALCOHOL AND DRUG POLICY.** The City of Fort Wayne has in place an Alcohol and Drug Policy that also applies to any Contractor doing business with the City of Fort Wayne. A copy of the policy is available for inspection in the office of Risk Management, Citizens Square, 200 E. Berry St., Fort Wayne, Indiana. The successful Contractor will be furnished a copy of said policy and as a condition of being awarded any contract, the successful Contractor shall execute and

acknowledgment of receipt of said policy and agree to be bound by the provisions of the policy that may be applicable.

[x] **E-Verify AFFIDAVIT.** Pursuant to IC 22-5-1.7, Contractor shall enroll in and verify the work eligibility status of all newly hired employees of Contractor through the E-Verify Program ("Program"). As a condition of being awarded any contract, the successful Bidder shall execute the E-Verify Affidavit, affirming that Contractor does not knowingly employ an unauthorized alien and further affirming that Contractor has enrolled and is participating in the E-Verify Program. The E-Verify Affidavit shall be submitted, by the successful bidder, with the signed Owner-Contractor Agreement.

END OF SECTION 002113

SECTION 002600 - PROCUREMENT SUBSTITUTION PROCEDURES

1.1 DEFINITIONS

A. Procurement Substitution Requests: Requests for changes in products, materials, equipment, and methods of construction from those indicated in the Procurement and Contracting Documents, submitted prior to receipt of bids.

B. Substitution Requests: Requests for changes in products, materials, equipment, and methods of construction from those indicated in the Contract Documents, submitted following Contract award. See Section 012500 "Substitution Procedures" for conditions under which Substitution requests will be considered following Contract award.

1.2 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.3 PROCUREMENT SUBSTITUTIONS

A. Procurement Substitutions, General: By submitting a bid, the Bidder represents that its bid is based on materials and equipment described in the Procurement and Contracting Documents, including Addenda. Bidders are encouraged to request approval of qualifying substitute materials and equipment when the Specifications Sections list materials and equipment by product or manufacturer name.

B. Procurement Substitution Requests will be received and considered by Owner when the following conditions are satisfied, as determined by Architect; otherwise, requests will be returned without action:

1. Extensive revisions to the Contract Documents are not required.
2. Proposed changes are in keeping with the general intent of the Contract Documents, including the level of quality of the Work represented by the requirements therein.
3. The request is fully documented and properly submitted.

1.4 SUBMITTALS

A. Procurement Substitution Request: Submit to Architect. Procurement Substitution Request must be made in writing by prime contract Bidder only in compliance with the following requirements:

1. Requests for substitution of materials and equipment will be considered if received no later than 7 days prior to date of bid opening. Fort Wayne Parks and Recreation reserves the right to deny requests for any reason.
2. Submittal Format: Submit Procurement Substitution Request via email and provide (1) copy in written format via regular mail. Include request on company letterhead.

    a. Identify the product or the fabrication or installation method to be replaced in each request. Include related Specifications Sections and drawing numbers.
    b. Provide complete documentation on both the product specified and the proposed substitute, including the following information as appropriate:

        1) Point-by-point comparison of specified and proposed substitute product data, fabrication drawings, and installation procedures.
        2) Copies of current, independent third-party test data of salient product or system characteristics.
        3) Samples where applicable or when requested by Architect.
        4) Detailed comparison of significant qualities of the proposed substitute with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
        5) Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
        6) Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, which will become necessary to accommodate the proposed substitute.

    c. Provide certification by manufacturer that the substitute proposed is equal to or superior to that required by the Procurement and Contracting Documents, and that its in-place performance will be equal to or superior to the product or equipment specified in the application indicated.
    d. Bidder, in submitting the Procurement Substitution Request, waives the right to additional payment or an extension of Contract Time because of the failure of the substitute to perform as represented in the Procurement Substitution Request.

B. Owner's Action:

1. Owner may request additional information or documentation necessary for evaluation of the Procurement Substitution Request. Architect will notify all bidders of acceptance of the proposed substitute by means of an Addendum to the Procurement and Contracting Documents.

C. Owner's approval of a substitute during bidding does not relieve Contractor of the responsibility to submit required shop drawings and to comply with all other requirements of the Contract Documents.

END OF SECTION 002600

SECTION 004113 - BID FORM - STIPULATED SUM (SINGLE-PRIME CONTRACT)

1.1 BID INFORMATION

A. Bid information available per Section 001116 Invitation to Bid. Bidder shall submit bid only on the QuestCDN online Bid Worksheet.

1.2 CERTIFICATIONS AND BASE BID

A. Base Bid (Single-Prime Contract): The undersigned Bidder, having carefully examined the Procurement and Contracting Requirements, Conditions of the Contract, Drawings, Specifications, and all subsequent Addenda, as prepared by Owner and its consultants, having visited the site, and being familiar with all conditions and requirements of the Work, hereby agrees to furnish all material, labor, equipment and services, including all scheduled allowances, necessary to complete the construction of the above-named project, according to the requirements of the Procurement and Contracting Documents.

BASE BID: Combined General, Mechanical, Electrical, and Plumbing required as shown and specified for the sum of:

_____

_____ AND _____
(amount in words)

$_____
(amount in figures)

B. Alternates Bid: If required, provide Bid for each alternate via the project's QuestCDN bid site. Alternate Bids shall be included in the contract at the Owner's discretion.

C. Contingency Allowance: The mandatory contingency allowance of $15,000.00 is automatically included in the final bid.

PART 2 – ALTERNATE BIDS

1. Alternate Bid Number One (A-1)
Add Alternate
The Contractor shall state the amount as an ADD for all of the labor, materials, services, transportation and equipment necessary to furnish and install recessed lights in bollards as shown on the drawings with plans, elevations, details, notes, specifications, and schedules.

Amount: _____

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2. Alternate Bid Number Two (A-2)
Deduct Alternate
The Contractor shall state the amount as a DEDUCT for all of the labor, materials, services, transportation, and equipment necessary to furnish and install powder coated aluminum benches between bollards as shown on the drawings with plans, elevations, details, notes, specifications, and schedules.

Amount: _____

3. Alternate Bid Number Three (A-3)
Deduct Alternate
The Contractor shall state the amount as a DEDUCT for all of the labor, materials, services, transportation, and equipment necessary to furnish and install the shower and related drain structure and piping as shown on the drawings with plans, elevations, details, notes, specifications, and schedules.

Amount: _____

1.3 TIME OF COMPLETION

A. The undersigned Bidder proposes and agrees hereby to commence the Work of the Contract Documents on a date specified in a written Notice of Award to be issued by Owner and shall fully complete the Work as required by Contract Documents.

Substantial Completion date is April 15, 2025.

1.4 ACKNOWLEDGMENT OF ADDENDA

A. The Bidder shall download addenda via the project's QuestCDN bid site. Failure to download prohibits the contractor from submitting a bid/Bid.

1.5 CONTRACTOR'S LICENSE

A. The undersigned further states that it is a duly licensed contractor, for the type of work proposed, in City of Fort Wayne, Allen County, State of Indiana and that all fees, permits, etc., pursuant to submitting this proposal have been paid in full.

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BIDDER hereby submits this Bid as set forth above:

Bidder:_____
(typed or printed name of organization)

By:_____
(individual's signature)

Name:_____
(typed or printed)

Title:_____
(typed or printed)

Date:_____
(typed or printed)

If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.

Attest:_____
(individual's signature)

Name:_____
(typed or printed)

Title:_____
(typed or printed)

Date:_____
(typed or printed)

Address for giving notices:_____

_____

Bidder's Contact:

Name:_____
(typed or printed)

Title:_____
(typed or printed)

Phone:_____

Email:_____

Address:_____

Bidder's Contractor License No.: (if applicable)_____

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Non-Common Wage Project

Office of Vendor Compliance
Pre-Construction Conference Presentation

Date: _____ **Place:** _____

Name: _____ **Number** _____

Prime Contractor: _____ **Award:** _____

Compliance Officer: **Jessica Bucher** **Email:** **Jessica.Bucher@cityoffortwayne.org**

Emerging Business Enterprise (EBE) Goal: The City of Fort Wayne has established a goal that 10% of the contract dollar amount on construction projects be contracted with Emerging Business Enterprises (EBEs). This goal can be met through the use of suppliers and/or subcontractors. **Effective November 5, 2018**, the City of Fort Wayne will allow the goal to be met through supplemental use of Disadvantaged Business Enterprises (DBEs) certified by the State of Indiana Department of Transportation or Minority and Women Business Enterprises certified by the Indiana Department of Administration.

Waiver/Reduction Form: If the prime contractor is unable to meet the goal, he/she must submit a Waiver Reduction Request form to the Vendor Compliance Office along with documentation of the efforts made and any other rationale for not complying with the Order. If the request is denied, a recommendation will be made to schedule a hearing with the Board of Public Works. If the denial is upheld the contract dollar amount may be reduced by up to 5%.

Prime Contractor Self Performance: The prime/general contractor must perform at least 15% of the total contract price with their own labor force, services or materials.

Contractor Insurance Requirements: Any contractor/subcontractor that performs work or provides a service on the project must maintain general liability insurance in at least the amount of $1 million for each occurrence and at least $2 million for the general aggregate.

Compensation in Cash: Contractors working on public works projects are prohibited from paying their employees in cash.

INDOT or IDOA Qualification: On contracts over $300,000 contractors must be qualified by the Indiana Department of Administration or the Indiana Department of Transportation before performing any work on a public works project.

Access to Training: A contractor on a public works project that employs 10 or more employees must provide access to training similar to the tasks to be performed. Training can be offered through any of the following programs: an apprenticeship, Ivy Tech, Vincennes University, a program established by or for the contractor; a program sponsored by the US Department of Labor; or similar.

Compliance Forms: The City's contract is with the prime contractor; therefore, the prime contractor is responsible for the compliance of all subcontractors and lower-tier subcontractors. It is the responsibility of the prime contractor to ensure the compliance report forms are given to all subcontractors. If the prime contractor, subcontractor, or lower-tier subcontractor fails to provide our office with the required reporting documents or other requested information, any penalties or sanctions will apply to the prime contractor.

In accordance with applicable Federal, State & City regulations, please be advised of the following required compliance forms:

Subcontractor/Supplier List: Prime Contractor will submit a list of subcontractors, lower-tier subcontractors, and suppliers **"prior"** to start of construction and include name of firm, contact person, phone, address, scope of work/service and dollar amount. The prime contractor shall not contract with a subcontractor, lower-tier subcontractor or supplier who is suspended or debarred by Federal, State Government or the City of Fort Wayne.

Monthly Employment Report: Prime contractor, subcontractors, and lower-tier subcontractors submit for each **month** work is performed (no monthly overlap).

Manpower Utilization Summary: Prime contractor submits project-end report within ten (10) days **after** completion of project.

Unauthorized Aliens: All contractors entering into a public contract with the City must enroll in and verify the work eligibility status of all newly hired employees of the contractor through the E-Verify program or any other system of legal residence verification approved by the United States Department of Homeland Security.

The contractor will also be required to sign an affidavit affirming that the contractor does not knowingly employ an unauthorized alien.

If the contractor uses a subcontractor to provide services or work the subcontractor shall certify to the prime contractor that he/she does not knowingly employ an unauthorized alien and has enrolled in and is participating in the E-Verify program or any other system of legal residence verification.

PERSONS RECEIVING CITY PRESENTATION:

Contractor: _____ **Date:** _____

Project Engineer: _____ **Date:** _____

Consultant: _____ **Date:** _____

Compliance Officer: _____ **Date:** _____

END OF SECTION 004580

CITY OF FORT WAYNE
AFFIRMATIVE ACTION PROGRAM

This Document may be completed electronically at the following website address
https://tinyurl.com/COFWAffirmativeAction

NAME OF COMPANY _____

ADDRESS _____ CITY, ZIP CODE _____

E-MAIL ADDRESS _____ PHONE #_____

FAX # _____

Identify by title and name the highest official within the facility who has the overall responsibility for the implementation of the Equal Employment Opportunity and Affirmative Action Program.

_____ _____
Name: (please print) Title:

_____ _____
Date: Signature:

1. Does your firm have a written Affirmative Action Program? _____ Yes _____ No

   A. **If so**, and it contains answers to the questions asked in this program, attach a copy and sign the Written Statement of Company Policy.

   B. **If not**, do you accept the following program in meeting the requirements of the City of Fort Wayne? _____ Yes _____ No

PLEASE KEEP IN MIND THAT FAILURE TO COMPLETE ALL SECTIONS OF THIS DOCUMENT WILL RESULT IN YOUR PROGRAM BEING REJECTED.

2. Will your firm make every effort to increase employment of minorities at all levels of its workforce with particular emphasis to categories where few, if any, minority people are employed? _____ Yes _____ No

3. Current number of employees _____

   Number of employees in **January of this Year** _____

4. If total minority employment is less than 20% give reasons why. (Do not include Females when you figure minority employment percentages.)

   _____
   _____
   _____
   _____

5. List minority recruitment sources below:

Agency	Contact Person	Date

6. Does this company anticipate an increase in employment this year? ____Yes ____No

   Approximately how many? _____

7. What specific goals can you achieve for the employment of minorities in the following labor classifications during this calendar year:

A.	Officials and Managers	_____%
B.	Professionals	_____%
C.	Technicians	_____%
D.	Sales	_____%
E.	Office and Clerical	_____%
F.	Skilled Craftsman	_____%
G.	Other	_____%

8. **WRITTEN STATEMENT OF COMPANY POLICY**

It is the policy of _____ that Equal Employment Opportunity is afforded to all qualified persons without regard to race, sex, religion, color, national origin, disability, age or veteran status.

In support of this policy, _____ will not discriminate against any employee or applicant for employment because of race, religion, sex, national origin, sex, age, disability or veteran status.

The _____will take affirmative action to insure that applicants are employed and that employees are treated during employment without regard to their race, religion, color, sex, national origin, disability, age or veteran status. Such action will include but not be limited to: Recruitment, advertising or solicitation for employment hiring, placement, upgrading transfer or demotion, selection for training including apprenticeship rates of pay or other forms of compensation, layoffs or termination.

_____ _____
Name of Company or Firm Date

_____
Signature of Highest Company Official

_____
Name and Title of Signer

Please type or print

STATISTICAL INFORMATION FOR AFFIRMATIVE ACTION / VENDOR COMPLIANCE

Name of Contractor or Supplier

(Information Given By)

Address and Telephone Number

Person Filling Out This Form and Data

EEOC CATAGORY	EMPLOYEES BY RACE/ETHNICITY/SEX									DISABLED EMPLOYEES									TOTAL EMPLOYEES
	W		BLK		H		OTHER			W		BLK		H		OTHER			
	M	F	M	F	M	F	M	F	(Designate)	M	F	M	F	M	F	M	F	(Designate)	
1. OFFICIAL & ADMINISTRATORS																			
2. PROFESSIONALS																			
3. TECHNICIANS																			
4. OPERATIVES																			
5. LABORER																			
6. OFFICE AND CLERICAL																			
7. SKILLED CRAFT WORKERS																			
8. SERVICE - MAINTENANCE WORKERS																			
9. SALES WORKERS																			
TOTALS																			
PERCENTAGES																			

CERTIFICATION OF NON-SEGREGATED FACILITIES

Each Bidder is required to file a fully executed Certificate of Non-Segregated Facilities once a year.

The bidder certifies further that he will not maintain or provide for his employees any segregated facilities at any of his establishments and he will not permit his employees to perform their services at any location under his control where segregated facilities are maintained. The Bidder agrees that a breach of this certification will be a violation of the Equal Opportunity clause in any contract resulting from acceptance of this bid. As used in this certification, the term "segregated facilities" means any waiting room, work area, restrooms and washrooms, restaurant or dress areas, parking lots, drinking fountains, recreation or entertainment areas, transportation and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, national origin, sex, age, disability or veteran status because of habit, local custom, or otherwise. The Bidder agrees that (except where the Bidder has obtained identical certification from proposed subcontractors for specific time periods) he will obtain identical certification from proposed subcontractors prior to the award of subcontracts exceeding $10,000 which are not exempt from the provisions of the Equal Opportunity clause and that he will retain such certification in his files.

Note: THE PENALTY FOR MAKING FALSE STATEMENTS IN OFFERS IS PRESCRIBED IN 18 U.S.C. 1001.

Date: _____, _____
month, day year

_____
Name of Bidder

By: _____

Title: _____
Official Address & Zip Code

END OF SECTION 004581

CERTIFICATE IN LIEU OF FINANCIAL STATEMENT

I, _____, the _____
Name

_____, of _____
Position Company

HEREBY CERTIFY THAT:

1. The Financial Statement of said Company, dated the____day of_____, 20_____, now on file in the office of Parks and Recreation Department of Fort Wayne, Indiana, made a part hereof, is a true and correct statement, and, accurately reflects the financial condition of said Company, as of the date hereof; and,

2. I am familiar with the books of said Company, showing its financial condition and am authorized to make this certificate on its belief.

DATE:_____

_____ _____
Signatory Printed Name of Signatory

ACKNOWLEDGED

SUBSCRIBED AND SWORN to before me, a Notary Public, in and for said County and State, this _____ day of _____, _____.

_____
NOTARY PUBLIC

_____
Notary Public Printed Name

A Resident of _____ County.

My Commission Expires _____

END OF SECTION 004582

EMERGING BUSINESS ENTERPRISE (E.B.E.) DECLARATION FORM
(For Federal Projects, this is an MBE/WBE Declaration Form)

BIDDER MUST CHECK EITHER "A", "B" OR "C" BELOW, TO DECLARE HIS/HER STATUS AS AN E.B.E., OR NON-E.B.E. CONTRACTOR:

A. _____ The undersigned firm declares that it is not an E.B.E. contractor.

B. _____ The undersigned firm declares that it is an E.B.E. contractor. Please specify percentage of the economically disadvantaged individual's ownership:_____%.

C. _____ The undersigned declares that it and the firm _____, a certified E.B.E., have entered a joint venture to perform this contract, and therefore will be considered to be an E.B.E. contractor for this project.

☐ **If the City has placed an "x" in this space, the project on which you are bidding is a federally funded project. Therefore, the bidder must also identify his/her status as a Minority Business Enterprise (MBE) or Woman Business Enterprise (WBE), if such status exists.**

D. _____ The undersigned firm declares that it is certified MBE Contractor.

E. _____ The undersigned firm declares that it is a Certified WBE Contractor.

Contractor:	Contractor:
_____	_____
By:_____	By:_____
Its:_____	Its:_____

NOTE: A successful, non-E.B.E. bidder will be required to sign an "E.B.E. Rider" attached to the final contract. In the Rider, the successful bidder must agree that he/she will make a good faith effort to subcontract 10% of the overall contract amount to E.B.E. – certified subcontractors. A percentage less than 10% may be stipulated by the Owner in the Instructions to Bidders, but it is the Owner's goal to strive for 10%, pursuant to Executive Order 90-01 (as amended 05/08/06) of the City of Fort Wayne.

The contract will be awarded to the lowest bidder who is responsive and responsible. E.B.E. commitment is not a part of the contract award. The successful bidder will be required to sign the E.B.E. Rider or the contract will not be signed by the Owner.

EBE/MBE/WBE WAIVER/REDUCTION APPLICATION

Type of Waiver Requested: _____ EBE _____ MBE _____ WBE

Project Resolution Number: _____

Project Name: _____

Submitted By: _____

Address: _____

City, State Zip Code: _____

Phone: _____ **Email**: _____

Each of the following elements must be present in order to determine whether or not a reduction or waiver is appropriate. Please provide adequate documentation and information to show why a reduction or waiver of the goal is being sought. (If the space given is not sufficient, please attach additional pages as needed.)

1. **Please give detailed statement of efforts to identify and select portions of the project to sub contract.**

2. **Please provide a list of your contact with EBE/M/WBE firms.**

☐ **Name of firm contacted**: _____

Address: _____

Phone: _____

Contact Date & Time: _____

Method: o Phone o Fax o Written o Other (explain): _____

☐ **Name of firm contacted**: _____

Address: _____

Phone: _____

Contact Date & Time: _____

Method: o Phone o Fax o Written o Other (explain): _____

☐ **Name of firm contacted**: _____

Address: _____

Phone: _____

Contact Date & Time: _____

Method: o Phone o Fax o Written o Other (explain): _____

[If more contacts were attempted, please attach additional pages of documentation]

COPIES OF ALL WRITTEN OR FAX SOLITIFICATIONS MUST BE ATTACHED

3. **If a reduction or waiver is being sought because of reasons other than prices, the contractor must provide the following information:**

   a. Detailed statement of WHY no EBE/M/WBE firm was subcontracted:

4. **If a reduction or waiver is being sought because prices quoted by EBE/M/WBE firms were higher than non-EBE/M/WBE firms, the contractor must provide the following information:**

   a. Price Quoted:

Contractor	**Price Quoted**
1.	1.
2.	2.
3.	3.
4.	4.

   b. **Detailed statement of the work identified for EBE/M/WBE participation for which the contractor asserts the EBE/M/WBE quote(s) was higher than non-EBE/M/WBE firms. Please summarize direct negotiations with EBE/M/WBE firms for specific portions of the work (and document the dates and time when negotiations occurred), and please indicate why negotiations were unsuccessful**:

   c. **Please include other documentations that demonstrate that the EBE/M/WBE quotes were higher than non-EBE/M/WBE firms**.

5. **Summary**:

   I, _____ of _____ (company) hereby

   request a reduction of _____ % from the EBE/M/WBE participation goal. This request is being sought for the reason explained above.

   (If the contractor desires to state further reason why the waiver should be accepted, please attach additional pages.)

   Signed:_____ **Date**:_____

   Title: _____

END OF SECTION 004583

CONTRACTOR'S BID FOR PUBLIC WORK - FORM 96

State Form 52414 (R2/2-13) / Form 96 (Revised 2013)
Prescribed by State Board of Accounts

PART I

(To be completed for all bids. Please type or print)

Date (*mo / dy / year*): _____

1. Governmental Unit (Owner): _____
2. County: _____
3. Bidder (Firm): _____

   Address: _____

   City / State / ZIP code: _____
4. 4. Telephone Number: _____
5. Agent of Bidder (if applicable): _____

Pursuant to notices given, the undersigned offers to furnish labor and/or material necessary to complete the public works project of _____ (Governmental Unit) in accordance with plans and specifications prepared by _____ and dated _____ for the sum of _____ $ _____

The undersigned further agrees to furnish a bond or certified check with this bid for an amount specified in the notice of the letting. If alternative bids apply, the undersigned submits a proposal for each in accordance with the notice. Any addendums attached will be specifically referenced at the applicable page.

If additional units of material included in the contract are needed, the cost of units must be the same as that shown in the original contract if accepted by the governmental unit. If the bid is to be awarded on a unit basis, the itemization of the units shall be shown on a separate attachment.

The contractor and his subcontractors, if any, shall not discriminate against or intimidate any employee, or applicant for employment, to be employed in the performance of this contract, with respect to any matter directly or indirectly related to employment because of race, religion, color, sex, national origin or ancestry. Breach of this covenant may be regarded as a material breach of the contract.

CERTIFICATION OF USE OF UNITED STATES STEEL PRODUCTS

(If applicable)

I, the undersigned bidder or agent as a contractor on a public works project, understand my statutory obligation to use steel products made in the United States (I.C. 5-16-8-2). I hereby certify that I and all subcontractors employed by me for this project will use U.S. steel products on this project if awarded. I understand that violations hereunder may result in forfeiture of contractual payments.

ACCEPTANCE

The above bid is accepted this _____ day of _____, 20_____subject to the following conditions: _____

_____

Contracting Authority Members:

_____ _____

_____ _____

_____ _____

PART II

(For projects of $150,000 or more - IC 36-1-12-4)

Governmental Unit:_____

Bidder (Firm): _____

Date (mo/dy/year): _____

These statements to be submitted under oath by each bidder with and as a part of his bid. Attach additional pages for each section as needed.

SECTION I EXPERIENCE QUESTIONNAIRE

1. What public works projects has your organization completed for the period of one (1) year prior to the date of the current bid?

Contract Amount	Class of Work	Completion Date	Name and Address of Owner

2. What public works projects are now in process of construction by your organization?

Contract Amount	Class of Work	Expected Completion Date	Name and Address of Owner

3. Have you ever failed to complete any work awarded to you? _____ If so, where and why?

_____

_____

_____

_____

_____

4. List references from private firms for which you have performed work.

_____

_____

SECTION II PLAN AND EQUIPMENT QUESTIONNAIRE

1. Explain your plan or layout for performing proposed work. (Examples could include a narrative of when you could begin work, complete the project, number of workers, etc. and any other information which you believe would enable the governmental unit to consider your bid.)

2. Please list the names and addresses of all subcontractors (i.e. persons or firms outside your own firm who have performed part of the work) that you have used on public works projects during the past five (5) years along with a brief description of the work done by each subcontractor.

3. If you intend to sublet any portion of the work, state the name and address of each subcontractor, equipment to be used by the subcontractor, and whether you will require a bond. However, if you are unable to currently provide a listing, please understand a listing must be provided prior to contract approval. Until the completion of the proposed project, you are under a continuing obligation to immediately notify the governmental unit in the event that you subsequently determine that you will use a subcontractor on the proposed project.

4. What equipment do you have available to use for the proposed project? Any equipment to be used by subcontractors may also be required to be listed by the governmental unit.

5. Have you entered into contracts or received offers for all materials which substantiate the prices used in preparing your proposal? If not, please explain the rationale used which would corroborate the prices listed.

_____

_____

_____

_____

SECTION III CONTRACTOR'S FINANCIAL STATEMENT

Attachment of bidder's financial statement is mandatory. Any bid submitted without said financial statement as required by statute shall thereby be rendered invalid. The financial statement provided hereunder to the governing body awarding the contract must be specific enough in detail so that said governing body can make a proper determination of the bidder's capability for completing the project if awarded.

SECTION IV CONTRACTOR'S NON- COLLUSION AFFIDAVIT

The undersigned bidder or agent, being duly sworn on oath, says that he has not, nor has any other member, representative, or agent of the firm, company, corporation or partnership represented by him, entered into any combination, collusion or agreement with any person relative to the price to be bid by anyone at such letting nor to prevent any person from bidding nor to include anyone to refrain from bidding, and that this bid is made without reference to any other bid and without any agreement, understanding or combination with any other person in reference to such bidding.

He further says that no person or persons, firms, or corporation has, have or will receive directly or indirectly, any rebate, fee, gift, commission or thing of value on account of such sale.

SECTION V OATH AND AFFIRMATION

I HEREBY AFFIRM UNDER THE PENALTIES FOR PERJURY THAT THE FACTS AND INFORMATION CONTAINED IN THE FOREGOING BID FOR PUBLIC WORKS ARE TRUE AND CORRECT.

Dated at _____ this _____ day of _____, 20_____.

_____
(Name of Organization)

By _____

_____
(Title of Person Signing)

ACKNOWLEDGEMENT

STATE OF _____)
) **SS**
COUNTYOF_____)

Before me, a Notary Public, personally appeared the above-named _____

and swore that the statements contained in the foregoing document are true and correct.

Subscribed and sworn to before me this _____ day of _____, 20_____.

_____
Notary Public

My Commission Expires: _____

County of Residence: _____

Part of State Form 52414 (R2 / 2-13) / Form 96 (Revised 2013)

BID OF

_____
(Contractor)

_____
(Address)

_____

FOR

PUBLIC WORKS PROJECTS

OF

_____

_____

_____

_____

Filed _____, _____

Action taken _____

END OF SECTION 004584

INDIANA CONTRACTOR QUALIFICATION CERTIFICATION

Pursuant to Indiana Code 5-16-13, Contractor hereby certifies that he/she shall be qualified under either IC 4-13-6.4 (Qualification for State Public Works Projects) or IC 8-23-10 (Qualifications of Bidders for Contracts) prior to performing any work on a City of Fort Wayne Board of Park Commissioners Project. Contractor further certifies that subcontractors of Contractor awarded subcontracts on a Public Works Contract in excess of $300,000 shall be qualified under the applicable statute. Contractor acknowledges that if he/she violates any of the foregoing qualification requirements, he/she shall be ineligible to bid on Public Works Contracts for such time period as the City determines.

_____
Name of Company

By:_____
(Signature)

_____
(Printed Name)

Title:_____

END OF SECTION 004585

CITY OF FORT WAYNE, INDIANA

_____
(Vendor Name)

VENDOR DISCLOSURE STATEMENT RELATING TO:

1. **FINANCIAL INTERESTS;**
2. **POTENTIAL CONFLICTS OF INTEREST;**
3. **CURRENT AND PENDING CONTRACTS OR PROCUREMENTS**

Vendors desiring to enter into certain contracts with the City of Fort Wayne, Indiana (the "City") shall disclose their financial interests, potential conflicts of interest and current and pending contract or procurement information as set forth below.

The following disclosures by Vendors are required for all contracts with annual payments by the City in the amount of $50,000 or more. Vendors shall disclose their financial interests, potential conflicts of interest and other contract and procurement information identified in Sections 1, 2 and 3 below as a prerequisite for consideration for a contract awarded by the City. This Disclosure Statement must be completed and submitted together with the Vendor's contract, bid, proposal or offer.

A publicly traded entity may submit its current 10K disclosure filing in satisfaction of the disclosure requirements set forth in Sections 1 and 2 below.

Section 1: Disclosure of Financial Interest in Vendor

a. If any individuals have either of the following financial interests in Vendor (or its parent), please check all that apply and provide their names and addresses (attach additional pages as necessary):

(i) Equity ownership exceeding 5% (____)

(ii) Distributable income share exceeding 5% (____)

(iii) Not Applicable (If N/A, go to Section 2) (____)

Name: _____ Name: _____

Address: _____ Address: _____

b. For each individual listed in Section 1a. show his/her type of equity ownership:

sole proprietorship (____) stock (____)
partnership interest (____) units (LLC) (____)
other (explain)_____

c. For each individual listed in Section 1a. show the percentage of ownership interest in Vendor (or its parent): ownership interest:

Name: _____ _____%

Name: _____ _____%

Section 2: Disclosure of Potential Conflicts of Interest (not applicable for vendors who file a 10K)

For each individual listed in Section 1a. check "Yes" or "No" to indicate which, if any, of the following potential conflict of interest relationships apply. If "Yes", please describe using space under applicable subsection (attach additional pages as necessary):

a. City employment, currently or in the previous 3 years, including contractual employment for services:
Yes _____ No _____

_____

_____

b. City employment of "Member of Immediate Family" (defined herein as: *Spouse, Child, Step Child, Parent or Step Parent, Father-in-law or Mother-in-law, Brother or Sister, Step Brother or Step Sister, Half Brother or Half Sister, Brother-in-law or Sister-in-law, Son-in-law or Daughter-in-law, Grandparent or Step Grandparent, Grandparent or Step Grandparent of Spouse, Grandchild)*
Including contractual employment for services in the previous 3 years:
Yes _____ No _____

_____

_____

c. Relationship to Member of Immediate Family holding <u>elective</u> City office currently or in the previous 3 years: Yes _____ No _____

_____

_____

Section 3: DISCLOSURE OF OTHER CONTRACT AND PROCUREMENT RELATED INFORMATION

a. Does Vendor have **<u>current</u>** contracts (including leases) with the City? Yes _____ No _____

If "Yes", identify each current contract with descriptive information including purchase order or contract reference number, contract date and City contact below (attach additional pages as necessary).

_____

_____

_____

b. Does Vendor have **<u>pending</u>** contracts (including leases), bids, proposals, or other pending procurement relationship with the City? Yes _____ No _____

If "Yes", identify each pending matter with descriptive information including bid or project number, contract date and City contact using space below (attach additional pages as necessary).

_____

_____

_____

c. Does vendor have any existing employees that are also employed by the City of Fort Wayne?

Yes _____ No _____

If "Yes", provide the employee's name, current position held at vendor, and employment payment terms (hourly, salaried, commissioned, etc.).

Name / Position / Payment Terms:

_____

Name / Position / Payment Terms:

_____

Name / Position / Payment Terms:

_____

d. Does vendor's representative, agent, broker, dealer or distributor (if applicable) have any existing employees that are also employed by the City of Fort Wayne? For each instance, please provide the name of the representative, agent, broker, dealer or distributor; the name of the City employee, and the payment terms (hourly, salaried, commissioned, etc.).

Company / Name / Payment Terms: _____

Company / Name / Payment Terms: _____

Section 4: CERTIFICATION OF DISCLOSURES

In connection with the disclosures contained in Sections 1, 2 and 3 Vendor hereby certifies that, except as described in attached Schedule A:

a. Vendor (or its parent) has not, within the five (5) year period preceding the date of this Disclosure Statement, been debarred, suspended, proposed for debarment declared ineligible or voluntarily excluded from any transactions by any federal, state or local unit of government;

b. No officer or director of Vendor (or its parent) or individual listed in Section 1a. is presently indicted for or otherwise criminally or civilly charged by a governmental entity (federal, state or local) with commission of any offense;

c. Vendor (or its parent) has not, within the five (5) year period preceding the date of this Disclosure Statement, had one or more public transactions (federal, state or local) terminated for cause or default;

d. No officer or director of Vendor (or its parent) or individual listed in Section 1a. has, within the five (5) year period preceding the date of this Disclosure Statement, been convicted, adjudged guilty, or found liable in any criminal or civil action instituted by the City, the federal or state government or any other unit of local government; and

e. Neither Vendor, nor its parent, nor any affiliated entity of Vendor, or any of their respective officers, directors, or individuals listed in Section 1a. is barred from contracting with any unit of any federal, state or local government as a result of engaging in or being convicted of: (i) bid-rigging; (ii) bid-rotating; or (iii) any similar federal or state offense that contains the same elements as the offense of bid-rigging or bid-rotating

f. Pursuant to IC 5-22-16.5, Vendor hereby certifies they do NOT provide $20 million dollars or more in goods or services to the energy sector of Iran. Vendor also certifies it is not a financial institution that extends $20 million dollars or more in credit that will provide goods or services to the energy sector of Iran or extends $20 million

dollars or more in credit to a person identified on the list as a person engaging in investment activities in Iran.

The disclosures contained Sections 1, 2 and 3 and the foregoing Certifications are submitted by

_____ (Name of Vendor)

_____
Address
(____) _____
Telephone
_____
E-Mail Address

The individual authorized to sign on behalf of Vendor represents that he/she: (a) is fully informed regarding the matters pertaining to Vendor and its business; (b) has adequate knowledge to make the above representations and disclosures concerning Vendor; and (c) certifies that the foregoing representations and disclosures are true and accurate to the best of his/her knowledge and belief.

Name (Printed) _____ Title _____

Signature _____ Date _____

NOTE: FAILURE TO COMPLETE AND RETURN THIS FORM WITH YOUR DOCUMENTATION MAY RESULT IN YOUR CONTRACT, OFFER, BID OR PROPOSAL BEING DISQUALIFIED FROM CONSIDERATION.

END OF SECTION 004586

Drug Policy Acknowledgement Form

FORT WAYNE PARKS AND RECREATION

Pursuant to Article 19.08B of the Instructions to Bidders, Contractor acknowledges the City of Fort Wayne has in place Drug and Alcohol Policy that applies to any Contractor doing business with the City. A copy of this policy is available for inspection on the City of Fort Wayne website at: http://www.citvoffortwayne.org/purchasing-home.html. As a condition of being awarded any contract, the successful Bidder shall sign this Drug Policy Acknowledgement and agree to be bound by those provisions of the policy that may be applicable. A copy of this form will be retained by the City of Fort Wayne.

The undersigned, on behalf of the Contractor deposes and states that the Contractor acknowledges the City of Fort Wayne's Alcohol and Drug Policy.

_____
Name of Company

_____
Name and Title

END OF SECTION 004587

E-Verify Affidavit

Pursuant to Indiana Code 22-5-1.7, Contractor agrees and shall enroll in and verify the work eligibility status of all newly hired employees of the contractor through the E-Verify program. E-Verify means the electronic verification of work authorization program of the Illegal Immigration Reform and Immigration Responsibility Act of 1996 (P.L. 104-208). Division C, Title IV, s.403(a), as amended, operated by the United States Department of Homeland Security or a successor work authorization program designated by the United States Department of Homeland Security or other federal agency authorized to verify the work authorization status of newly hired employees under the Immigration Reform and Control Act of 1986 (P.L. 99-603). Contractor is not required to verify the work eligibility status of all newly hired employees of Contractor through the E-verify program if the E-Verify program no longer exists.

The undersigned, on behalf of the Contractor, being first duly sworn, deposes and states that the Contractor does not knowingly employ an unauthorized alien. The undersigned further affirms that, prior to entering into its contract with the City, the undersigned Contractor will enroll in and agrees to verify the work eligibility status of all its newly hired employees through the E-Verify program.

_____
Name of Company

By: _____
Title

ACKNOWLEDGEMENT

STATE OF INDIANA)
) SS
COUNTY OF ALLEN)

Before me, a Notary Public, in and for said State and County, personally appeared the within named Company by Name, Title, who being first duly sworn upon his/her oath states that he/she is a duly authorized agent of the Contractor, and as such duly authorized to execute the foregoing Declaration, and acknowledged the same as his/her voluntary act and deed.

WITNESS my hand and sear this _____ day of _____, 20_____.

My Commission Expires: _____

_____
Signature of Notary Public

Resident of _____ County

_____
Printed Name

END OF SECTION 004588

Non-Collusion Affidavit

The undersigned bidder or agent, being duly sworn on oath, says that he/she has not, nor has any other member, representative, or agent of the firm, company, corporation or partnership represented by him, entered into any combination, collusion or agreement with any person relative to the price to be bid by anyone at such letting nor to prevent any person from bidding nor to include anyone to refrain from bidding, and that this bid is made without reference to any other bid and without any agreement, understanding or combination with any other person in reference to such bidding.

He/She further says that no person or persons, firms, or corporation has, have or will receive directly or indirectly, any rebate, fee gift, commission or thing of value on account of such sale.

OATH AND AFFIRMATION

I HEREBY AFFIRM UNDER THE PENALTIES FOR PERJURY THAT THE FACTS AND INFORMATION CONTAINED IN THE FOREGOING BID ARE TRUE AND CORRECT.

Dated this____day of _____,_____

_____
(Name of Organization)

_____
(Title of Person Signing)

_____
(Signature)

ACKNOWLEDGEMENT

STATE OF _____)
) ss
COUNTY OF _____)

Before me, a Notary Public personally appeared the above named and swore that the statements contained in the foregoing document are true and correct.

Subscribed and sworn to me this _____ day of _____, _____ .

_____
Notary Public Signature

My Commission Expires: _____

END OF SECTION 004589

SECTION 011000 - SUMMARY

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and General Provisions of Contract, including other Specification Sections, apply to this Section.

B. The Work of this Section shall be included as part of the Contract Document of the Prime Contractor and subcontractors on this Project.

1.2 PROJECT DESCRIPTION

A. Summary of Work: See Section 001116 "Invitation to Bid"

B. Job Conditions:

1. No part of this work shall be performed or installed in any location or manner which may endanger the health, safety, or welfare of the public now or in the future. Means, methods, techniques, sequencing, etc. are the sole responsibility of the contractor.

2. The contractor agrees that he/she shall assume sole and complete responsibility for his/her work, including safety of all persons and property; and that the contractor shall defend, indemnify, and hold the owner harmless from any and all liability, real or alleged, in connection with the contractor's performance of work on this project, excepting for liability arising from the sole negligence of the owner or tenants. Any facilities or property damaged or destroyed as a result of the contractor's operations at the sites shall be repaired or replaced at the contractor's expense.

3. Any requirement of this specification which conflicts with or is in violation of any government rule, ordinance, regulation, etc. shall be void. The contractor shall notify the owner immediately of any such requirement found in this specification.

4. The contractor shall, throughout the course of this work, comply with all rules, ordinances, regulations, etc. set forth by agencies having jurisdiction, which apply to the work site, the contractor, and/or his/her employees.

5. All debris (construction material, litter, etc.) shall be disposed of offsite at contractor's expense.

C. Inspection:

1. Contract work may be inspected for acceptance in portions as agreeable to Owner, provided each portion of work offered for inspection is complete.

2. When inspected, work which does not comply with requirements, replace rejected work until inspected by Owner and found to be acceptable. Remove materials promptly from project site.

1.3 CONTRACTOR USE OF PREMISES

A. During the construction period the Contractors and subcontractors shall have full use of the premises for construction operations, including use of the site. The contractor's use of the premises is limited only by the Owner's right to perform construction operations with its own forces or to employ separate contractors on portion of the project.

B. Limit use of the premises to construction activities in areas indicated; allow for Owner occupancy and use by the public.
   1. Confine operations to areas within Contract limits indicated. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.

   2. Keep driveways and entrances serving the premises clear and available to the Owner and the Owner's employees at all times. Do not use these areas for parking or storage of materials unless otherwise noted. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.

C. Each contractor shall limit his use of the premises for work and for storage, to allow for work by other contractors and Owner occupancy of adjacent buildings or building areas.

D. Coordinate use of the premises, under direction of the Owner's Representative.

E. Contractor shall assume complete responsibility for the protection and safekeeping of products under this Contract, stored on site.

F. Contractor shall move stored products which interfere with operation of the Owner or separate Contractor.

G. Contractor shall obtain and pay for the use of additional storage of work areas needed for operation.

1.4 TAXES

A. The City of Fort Wayne Board of Park Commissioners is not subject to federal excise taxes. Federal Tax Registry Number is 003120627 001 7. The City of Fort Wayne Board of Park Commissioners is not subject to the Indiana sales and use taxes on the purchase of goods and other materials.

1.5 PERMITS, FEES, AND NOTICES

A. The Prime Contractor shall secure the general building permit for the Owner. Each contractor shall secure and pay for other permits, governmental fees, and licenses necessary for the proper execution and completion of his Work, which are applicable at the time the bids are also received.

Each contractor shall be responsible for contacting the local governing agency for such cost information and requirements.

B. Inspection of installed work shall be performed by the governing authority as arranged for by the Prime Contractor. Work shall be covered until approved.

C. Each Contractor shall give notices and comply with laws, ordinances, rules, regulations, and orders of public authorities bearing on the performance of his Work. If a Contractor observes that the Contract Documents are at variance therewith, he shall promptly notify the Owner's Representative in writing, and necessary changes shall be adjusted by appropriate notifications. If a Contractor performs Work knowing it to be contrary to such laws, ordinances, rules, and regulations, and without such notice to the Owner's Representative, he shall assume full responsibility therefore and shall bear the costs attributable thereto.

1.6 LABOR AND MATERIALS

A. Unless otherwise specifically noted, each Contractor shall provide and pay for labor, material, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for the proper execution and completion of his Work, whether temporary or permanent and whether or not incorporated or to be incorporated at the Work.
B. Each Contractor shall enforce strict discipline and good working order among his employees or other persons carrying out Work of his Contract and shall not permit employment of unfit person or persons or anyone not skilled in the task assigned to them.

C. All materials used by the Contractor in the performance of the contract will, unless otherwise specified, be new, of a merchantable quality, and in no case less than the quality required by the specifications.

1.7 PROJECT COORDINATION

A. The Prime Contractor shall provide full-time, on-site supervision to coordinate all aspects of his Work with other Contractors' Work. It shall be the full responsibility to coordinate with all phases of Site Work, and other separate Contract Work. All Separate Contractors shall fully cooperate with each other and the Owner's Representative.

B. The Prime Contractor shall coordinate the performance of his subcontractors in the utilization of the site, as well as in the actual performance of their contractual obligations to the Owner.

C. Each Subcontractor shall cooperate with the Prime Contractor and all other Contractors who may be employed by the Owner.

D. None of the services covered by the Contract shall be sub-contracted or contracted out without the prior written approval of the Board. No subcontract will be awarded to Contractors who have been debarred or suspended from doing work for the City of Fort Wayne.

1.8 VERIFICATION OF DRAWING'S / SITE / EXISTING DIMENSIONS

A. Each Contractor shall verify all dimensions shown on the Drawings and obtain all measurements required for proper execution of the Work.

B. Before commencing Work, each Contractor shall examine all surfaces, and areas indicated on the Drawings to receive Work. Report necessary corrections in writing immediately to the Owner's Representative. Do not proceed until corrections (if any required) have been made. Commencing Work signifies this Contractor's acceptance of said spaces, surfaces, and areas, and of job Conditions.

1.9 PROJECT SECURITY AND PROTECTION

A. The Prime Contractor shall be responsible for developing and conduction a security program, specifically oriented for the protection of preventing damage, injury, or loss to the entire project site and other property at the site or adjacent thereto. This shall be acceptable to the Owner, and shall remain in effect through Substantial Completion of the Project.

B. Each Contractor shall be responsible for securing his work and equipment at the close of each workday.

C. It is recommended that the Contractor remove all equipment from the site at the end of each work day. Owner will not be responsible for any damage or theft to equipment left on the job site.

D. The Contractor shall be 100% fully responsible for any and all barricades and traffic control. The Owner reserves the right to request more protection if deemed necessary.

E. The Contractor shall obtain adequate protection of all work from possible damage, and shall protect the City's property from possible injury or damage arisen from the work to be done under or by the Contractor, its employees, agents and sub-contractors during the construction. He shall take all reasonable precaution for the safety of the employees on the job and shall comply with all applicable safety laws, building codes, and ordinances. The Contractor shall properly and fully guard all excavations and dangerous places and will use all due and proper precaution to prevent injury to any and all persons and property.

1.10 INSURANCE

A. Proof of Contractor's Liability Insurance will be required of each Contractor before a Contract is executed. The City of Fort Wayne has the following insurance requirements: Awarded bidder (s) will be required to submit a copy of Certificate of Insurance for General Liability with a $1,000,000 per occurrence and $2,000,000 per aggregate, Auto Liability with a $1,000,000 per occurrence. Products liability $1,000,000 per occurrence, completed operations liability $1,000,000 per occurrence. Workers Compensation per the Indiana Statute. The "City of Fort Wayne" shall be named as an additional insured. In the event of policy cancellation, the City of Fort Wayne shall be given 30 days prior written notice.

1.11 INDEMNIFICATION CLAUSE / WAIVER OF RIGHT TO MECHANICS LIENS

A. Prior to signing of agreement, the Contractor will be required to relinquish all right to claim or file notice of Mechanic's Lien upon the City of Fort Wayne Board of Park Commissioners, or any part or division of the Fort Wayne Parks and Recreation Department. The Contractor shall observe all laws, statues, and ordinances affecting this Work.

1.12 CLEAN-UP AND WASTE REMOVAL

A. Waste Material: Remove all waste material and debris at frequent intervals and at the end of each work day from the premises and keep premises clear. Remove waste at Owner's request.

B. Clean-Up: At the end of each work day, the job site is to be cleaned of all debris. Such debris shall be removed from the site. It is recommended that the Contractor remove all equipment from the site at the end of each work day. Owner will not be responsible for any damage or theft to equipment left on the job site. Contractor is not to use any of the Park Department trash containers, mops, mop buckets, brooms, etc. Contractor is to supply all cleaning equipment and materials to use during project clean-up.

C. Damage to Site: As stated above, Contractor will be responsible for any damage to the job site which shall include but not limited to shrubs, trees, walks, drives, buildings, utilities, and turf. At the completion of the project, Contractor will restore all areas to original or better condition.

1.13 SCHEDULING OF OPERATIONS

A. Work shall begin as soon as a purchase order has been awarded or as otherwise stated. Give the Fort Wayne Parks and Recreation Department a 48 hour notice prior to beginning any Work.

B. Pre-Construction Meeting: A Pre-Construction Meeting shall be set up between the Owner, Prime Contractor, and all sub contractors involved with the Work prior to commencing construction.

C. Progress Meetings: Progress meetings shall be held between the Owner, Prime Contractor, and all sub contractors involved with the current Work at a time and duration agreed to by the Owner and Prime Contractor. In no case shall the duration between meetings be more than two (2) weeks.

1.14 CHANGES TO THE CONTRACT

A. The Owner may, at any time, by written Change Order, make changes within the general scope of the Contract. If any change results in an increase or decrease in the cost of performance, time of performance, or any other material provision under the Contract price, the Owner shall make an equitable adjustment in the Contract price, time of performance, or other provision. Any claim by the Contractor for adjustment under this clause shall be submitted to the Owner in writing within thirty (30) days after the issuance of the Change Order. All such Change Orders and resultant compensation shall be incorporated as written modifications to the Contract.

1.15 PROGRESS PAYMENTS AND RETAINAGE

A. The Contractor may submit requests for payments no more often than every thirty (30) days for Work performed under the contract. If the Contractor is in compliance with the provisions of the contract, the Owner will make payments for such Work performed and completed. However, in any such case, the Owner will retain 5% (five percent), of the total amount owing to insure satisfactory completion of the Contract and to insure Contractor's compliance with the E.B.E. Rider, if required of this Contract. Payments to the Contractor are not to exceed 95% of the total Contract amount until the owner has verified that the Contractor has made good faith efforts to attain the E.B.E. goal stipulated in the E.B.E. Rider.

END OF SECTION 011000

SECTION 012100 - ALLOWANCES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements governing allowances.

B. Types of allowances include the following:

1. Contingency allowances.

1.2 CONTINGENCY ALLOWANCES

A. Use the contingency allowance only as directed by the Owner. A Change Order or Change Authorization shall be prepared by Owner prior to executing any changes that charge the contingency allowance.

B. A Contingency Allowance in the amount of $15,000.00 shall be included in the Contractor's Base Bid.

C. Change Orders authorizing use of funds from the contingency allowance will include Contractor's related costs and reasonable overhead and profit.

D. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

END OF SECTION 012100

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SECTION 012300 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the base bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.

C. Execute accepted alternates under the same conditions as other work of the Contract.

D. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

PART 4 - SCHEDULE OF ALTERNATES

4.1 SCHEDULE

A. Alternate Bid Number One (A-1)
Add Alternate
The Contractor shall state the amount as an ADD for all of the labor, materials, services, transportation and equipment necessary to furnish and install recessed lights in bollards as shown on the drawings with plans, elevations, details, notes, specifications, and schedules.

B. Alternate Bid Number Two (A-2)
Deduct Alternate
The Contractor shall state the amount as a DEDUCT for all of the labor, materials, services, transportation and equipment necessary to furnish and install powder coated aluminum benches between bollards as shown on the drawings with plans, elevations, details, notes, specifications, and schedules.

C. Alternate Bid Number Three (A-3)
Deduct Alternate
The Contractor shall state the amount as a DEDUCT for all of the labor, materials, services, transportation and equipment necessary to furnish and install the shower and related drain structure and piping as shown on the drawings with plans, elevations, details, notes, specifications, and schedules.

END OF SECTION 012300 ALTERNATES

SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

B. Related Requirements:

1. Document 002600 "Procurement Substitution Procedures" for requirements for substitution requests prior to award of Contract.
2. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

1.2 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

1.3 ACTION SUBMITTALS

A. Substitution Requests: Submit copies of each request for consideration via email. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use form acceptable to Owner.
2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

a. Statement indicating why specified product or fabrication or installation method cannot be provided, if applicable.
b. Coordination of information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
c. Detailed comparison of significant qualities of proposed substitutions with those of the Work specified. Include annotated copy of applicable Specification Section.

Significant qualities may include attributes, such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.

d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
e. Samples, where applicable or requested.
f. Certificates and qualification data, where applicable or requested.
g. List of similar installations for completed projects, with project names and addresses as well as name and address of Owner.
h. Material test reports from a qualified testing agency, indicating and interpreting test results for compliance with requirements indicated.
i. Detailed comparison of Contractor's construction schedule using proposed substitutions with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
j. Cost information, including a proposal of change, if any, in the Contract Sum.
k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents, except as indicated in substitution request, is compatible with related materials and is appropriate for applications indicated.
l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Owners Action: If necessary, Owner will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Owner will notify Contractor of acceptance or rejection of proposed substitution within 7 days of receipt of request.

a. Forms of Acceptance: Change Order, Construction Change Directive, or Owner's Supplemental Instructions for minor changes in the Work.
b. Use product specified if Owner does not issue a decision on use of a proposed substitution within time allocated.

1.4 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.5 PROCEDURES

A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

1.6 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.

1. Conditions: Owner will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Owner will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
b. Substitution request is fully documented and properly submitted.
c. Requested substitution will not adversely affect Contractor's construction schedule.
d. Requested substitution has received necessary approvals of authorities having jurisdiction.
e. Requested substitution is compatible with other portions of the Work.
f. Requested substitution has been coordinated with other portions of the Work.
g. Requested substitution provides specified warranty.
h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Owner will consider requests for substitution if received within 21 days after the Notice of Award. Requests received after that time may be considered or rejected at discretion of Owner.

1. Conditions: Owner will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Owner will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Owner for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
b. Requested substitution does not require extensive revisions to the Contract Documents.
c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
d. Substitution request is fully documented and properly submitted.
e. Requested substitution will not adversely affect Contractor's construction schedule.
f. Requested substitution has received necessary approvals of authorities having jurisdiction.
g. Requested substitution is compatible with other portions of the Work.
h. Requested substitution has been coordinated with other portions of the Work.
i. Requested substitution provides specified warranty.

j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for handling and processing Contract modifications.

1.2 MINOR CHANGES IN THE WORK

A. Owner will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time.

1. Work Change Proposal Requests issued by Owner are not instructions either to stop work in progress or to execute the proposed change.

1.3 PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: Owner will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. Work Change Proposal Requests issued by Owner are not instructions either to stop work in progress or to execute the proposed change.
2. Within 5 days after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.

a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
b. Indicate delivery charges, equipment rental, and amounts of trade discounts.
c. Include costs of labor and supervision directly attributable to the change.
d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Owner.

1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.

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2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.

1.4 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Work Change Proposal Request, Owner shall issue a Change Authorization denoting contract changes requiring acceptance signatures of Contractor and Owner. A Change Order shall be issued at the completion of the project.

1.5 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Change Directive: Owner may issue a Construction Change Directive. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

1.6 WORK CHANGE DIRECTIVE

A. Work Change Directive: Owner may issue a Work Change Directive. Work Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

1. Work Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

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B. Documentation: Maintain detailed records on a time and material basis of work required by the Work Change Directive.

1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

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SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.2 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.

1. Coordinate line items in the schedule of values with items required to be indicated as separate activities in Contractor's construction schedule.
2. Submit the schedule of values to Owner at earliest possible date, but no later than seven days before the date scheduled for submittal of initial Applications for Payment.

B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.

1. Arrange schedule of values consistent with format of AIA Document G703.
2. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
3. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.

    a. Differentiate between items stored on-site and items stored off-site.

4. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
5. Overhead Costs: Include total cost and proportionate share of general overhead and profit for each line item.
6. Overhead Costs: Show cost of temporary facilities and other major cost items that are not direct cost of actual work-in-place as separate line items.
7. Closeout Costs. Include separate line items under Contractor and principal subcontracts for Project closeout requirements in an amount totaling five percent of the Contract Sum and subcontract amount.

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8. Schedule of Values Revisions: Revise the schedule of values when Change Orders or Construction Change Directives result in a change in the Contract Sum. Include at least one separate line item for each Change Order and Construction Change Directive.

1.3 APPLICATIONS FOR PAYMENT

A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified and paid by the Owner.

B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.

C. Payment Application Times: Submit Application for Payment to Owner monthly. The period covered by each Application for Payment is one month ending on the last day of the month.

D. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 or AIA Document G732 and AIA Document G703 as form for Applications for Payment.

E. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Owner will return incomplete applications without action.

1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.

F. Transmittal: Submit two signed and notarized original copies of each Application for Payment to Owner by a method ensuring receipt within two days. One copy shall include waivers of lien and similar attachments if required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

G. Waivers of Mechanic's Lien: With each Application for Payment, submit Affidavit and Waiver of Lien, as included in the bid documents.

1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
2. When an application shows completion of an item, submit conditional final or full waivers.
3. Owner reserves the right to designate which entities involved in the Work must submit waivers.

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4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
5. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.

H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.
2. Schedule of values.
3. Contractor's construction schedule (preliminary if not final).
4. Products list (preliminary if not final).
5. Sustainable design action plans, including preliminary project materials cost data.
6. Submittal schedule (preliminary if not final).
7. List of Contractor's staff assignments.
8. List of Contractor's principal consultants.
9. Copies of building permits.
10. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
11. Initial progress report.
12. Report of preconstruction conference.
13. Certificates of insurance and insurance policies.
14. Performance and payment bonds.
15. Data needed to acquire Owner's insurance.

I. Application for Payment at Substantial Completion: After Owner issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

J. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. AIA Document G706.
5. AIA Document G706A.
6. AIA Document G707.
7. Evidence that claims have been settled.
8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.

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PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

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SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. General coordination procedures.
2. Coordination drawings.
3. RFIs.
4. Digital project management procedures.
5. Project meetings.

B. Related Requirements:

1. Section 017300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.

1.2 INFORMATIONAL SUBMITTALS

A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:

1. Name, address, telephone number, and email address of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.

1.3 GENERAL COORDINATION PROCEDURES

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's construction schedule.
2. Preparation of the schedule of values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.

1.4 COORDINATION DRAWINGS

A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely indicated on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.

1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:

   a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
   b. Indicate dimensions shown on Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternative sketches to Owner indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

B. Coordination Drawing Organization:

1. Review: Owner will review coordination drawings to confirm that, in general, the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility. If Owner determines that coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, Owner will so inform Contractor, who shall make suitable modifications and resubmit.

C. Coordination Digital Data Files: Prepare coordination digital data files according to the following requirements:

1. File Preparation Format: Same digital data software program, version, and operating system as original Drawings.
2. File Preparation Format: DWG, operating in Microsoft Windows operating system.

3. File Submittal Format: Submit or post coordination drawing files using PDF. Provide DWG file format as requested for Owner's records.
4. Owner will furnish Contractor one set of digital data files of Drawings for use in preparing coordination digital data files as requested.

    a. Owner makes no representations as to the accuracy or completeness of digital data files as they relate to Drawings.
    b. Digital Data Software Program: Drawings are available in DWG format.

1.5 REQUEST FOR INFORMATION (RFI)

A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.

1. Owner will return without response those RFIs submitted to Owner by other entities controlled by Contractor.
2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:

1. Owner name.
2. Owner's Project number.
3. Date.
4. Name of Contractor.
5. RFI number, numbered sequentially.
6. RFI subject.
7. Specification Section number and title and related paragraphs, as appropriate.
8. Drawing number and detail references, as appropriate.
9. Field dimensions and conditions, as appropriate.
10. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
11. Contractor's signature.
12. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.

C. RFI Forms: AIA Document G716.

D. Owner's Action: Owner will review each RFI, determine action required, and respond. Allow 7 days for Owner's response for each RFI. RFIs received by Owner after 3:00 p.m. will be considered as received the following working day.

1. The following Contractor-generated RFIs will be returned without action:

    a. Requests for approval of submittals.

b. Requests for approval of substitutions.
c. Requests for approval of Contractor's means and methods.
d. Requests for coordination information already indicated in the Contract Documents.
e. Requests for adjustments in the Contract Time or the Contract Sum.
f. Requests for interpretation of Owner's actions on submittals.
g. Incomplete RFIs or inaccurately prepared RFIs.

2. Owner's action may include a request for additional information, in which case Owner's time for response will date from time of receipt by Owner of additional information.
3. Owner's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."

a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Owner 5 days of receipt of the RFI response.

E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log as requested by Owner.

1. Project name.
2. Name and address of Contractor.
3. Name and address of Owner
4. RFI number including RFIs that were returned without action or withdrawn.
5. RFI description.
6. Date the RFI was submitted.
7. Date Owner's response was received.

F. On receipt of Owner's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Owner within 7 days if Contractor disagrees with response.

1.6 DIGITAL PROJECT MANAGEMENT PROCEDURES

A. Use of Owner's Digital Data Files: Digital data files of Owner's CAD drawings will be provided by Owner for Contractor's use during construction.

1. Digital data files may be used by Contractor in preparing coordination drawings, Shop Drawings, and Project record Drawings.
2. Owner makes no representations as to the accuracy or completeness of digital data files as they relate to Contract Drawings.
3. Digital Drawing Software Program: Contract Drawings are available in AutoCad.
4. Contractor shall execute a data licensing agreement in the form of AIA Document C106.
5. The following digital data files will be furnished for each appropriate discipline:

a. Floor plans.
b. Reflected ceiling plans.

B. PDF Document Preparation: Where PDFs are required to be submitted to Owner, prepare as follows:

1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
2. Name file with submittal number or other unique identifier, including revision identifier.
3. Certifications: Where digitally submitted certificates and certifications are required, provide a digital signature with digital certificate on where indicated.

1.7 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.

B. Preconstruction Conference: Owner will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Owner, but no later than 15 days after execution of the Agreement.

1. Attendees: Authorized representatives of Owner and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Discuss items of significance that could affect progress, including the following:

a. Responsibilities and personnel assignments.
b. Tentative construction schedule.
c. Phasing.
d. Critical work sequencing and long lead items.
e. Designation of key personnel and their duties.
f. Lines of communications.
g. Use of web-based Project software.
h. Procedures for processing field decisions and Change Orders.
i. Procedures for RFIs.
j. Procedures for testing and inspecting.
k. Procedures for processing Applications for Payment.
l. Distribution of the Contract Documents.
m. Submittal procedures.
n. Sustainable design requirements.
o. Preparation of Record Documents.
p. Use of the premises.
q. Work restrictions.
r. Working hours.
s. Owner's occupancy requirements.
t. Responsibility for temporary facilities and controls.
u. Procedures for moisture and mold control.
v. Procedures for disruptions and shutdowns.
w. Construction waste management and recycling.

x. Parking availability.
y. Office, work, and storage areas.
z. Equipment deliveries and priorities.
aa. First aid.
bb. Security.
cc. Progress cleaning.

3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity when required by other sections and when required for coordination with other construction.

1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Owner of scheduled meeting dates.
2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:

a. Contract Documents.
b. Options.
c. Related RFIs.
d. Related Change Orders.
e. Purchases.
f. Deliveries.
g. Submittals.
h. Sustainable design requirements.
i. Review of mockups.
j. Possible conflicts.
k. Compatibility requirements.
l. Time schedules.
m. Weather limitations.
n. Manufacturer's written instructions.
o. Warranty requirements.
p. Compatibility of materials.
q. Acceptability of substrates.
r. Temporary facilities and controls.
s. Space and access limitations.
t. Regulations of authorities having jurisdiction.
u. Testing and inspecting requirements.
v. Installation procedures.
w. Coordination with other work.
x. Required performance results.
y. Protection of adjacent work.
z. Protection of construction and personnel.

3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

D. Progress Meetings: Contractor will conduct progress meetings as determined at the pre-installation meeting.

1. Coordinate dates of meetings with preparation of payment requests.
2. Attendees: In addition to representatives of Owner, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

    a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

        1) Review schedule for next period.

    b. Review present and future needs of each entity present, including the following:

        1) Interface requirements.
        2) Sequence of operations.
        3) Resolution of BIM component conflicts.
        4) Status of submittals.
        5) Status of sustainable design documentation.
        6) Deliveries.
        7) Off-site fabrication.
        8) Access.
        9) Site use.
        10) Temporary facilities and controls.
        11) Progress cleaning.
        12) Quality and work standards.
        13) Status of correction of deficient items.
        14) Field observations.
        15) Status of RFIs.
        16) Status of Proposal Requests.
        17) Pending changes.

18) Status of Change Orders.
19) Pending claims and disputes.
20) Documentation of information for payment requests.

4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.

   a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Submittal schedule requirements.
2. Administrative and procedural requirements for submittals.

1.2 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Owner's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."

B. Informational Submittals: Written and graphic information and physical samples that do not require Owner's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

1.3 SUBMITTAL SCHEDULE

A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Owner and additional time for handling and reviewing submittals required by those corrections.

1.4 SUBMITTAL FORMATS

A. Submittal Information: Include the following information in each submittal:

1. Project name.
2. Date.
3. Name of Owner.
4. Name of Contractor.
5. Name of firm or entity that prepared submittal.
6. Names of subcontractor, manufacturer, and supplier.
7. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier; and alphanumeric suffix for resubmittals.

8. Category and type of submittal.
9. Submittal purpose and description.
10. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
11. Drawing number and detail references, as appropriate.
12. Indication of full or partial submittal.
13. Location(s) where product is to be installed, as appropriate.
14. Other necessary identification.
15. Remarks.
16. Signature of transmitter.

B. Options: Identify options requiring selection by Owner.

C. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Owner on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.

D. Electronic Submittals: This is the owner's preferred method. Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number. Email to Fort Wayne Parks Project representative.

E. Paper Submittals:

1. Place a permanent label or title block on each submittal item for identification; include name of firm or entity that prepared submittal.
2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Owner.
3. Action Submittals: Submit two paper copies of each submittal unless otherwise indicated. Owner will return one copy.
4. Informational Submittals: Submit two paper copies of each submittal unless otherwise indicated. Owner will not return copies.
5. Transmittal for Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using AIA Document G810 transmittal form.

1.5 SUBMITTAL PROCEDURES

A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

1. Email: Prepare submittals as PDF package and transmit to Owner by sending via email. Include PDF transmittal form. Include information in email subject line as requested by Owner.
2. Paper: Prepare submittals in paper form and deliver to Owner.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.

C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Owner's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 7 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Owner will advise Contractor when a submittal being processed must be delayed for coordination.
2. Resubmittal Review: Allow 7 days for review of each resubmittal.

D. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

E. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

F. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Owner's action stamp.

1.6 SUBMITTAL REQUIREMENTS

A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

    a. Manufacturer's catalog cuts.
    b. Manufacturer's product specifications.
    c. Standard color charts.
    d. Statement of compliance with specified referenced standards.
    e. Testing by recognized testing agency.
    f. Application of testing agency labels and seals.
    g. Notation of coordination requirements.
    h. Availability and delivery time information.

4. For equipment, include the following in addition to the above, as applicable:

    a. Wiring diagrams that show factory-installed wiring.

b. Printed performance curves.
c. Operational range diagrams.
d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

5. Submit Product Data before Shop Drawings, and before or concurrent with Samples.

B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

a. Identification of products.
b. Schedules.
c. Compliance with specified standards.
d. Notation of coordination requirements.
e. Notation of dimensions established by field measurement.
f. Relationship and attachment to adjoining construction clearly indicated.
g. Seal and signature of professional engineer if specified.

2. Paper Sheet Size: Except for templates, patterns, and similar full-size Drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 24 by 36 inches.

a. Two opaque (bond) copies of each submittal. Owner will return one copy.

C. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other materials.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Permanently attach label on unexposed side of Samples that includes the following:

a. Project name and submittal number.
b. Generic description of Sample.
c. Product name and name of manufacturer.
d. Sample source.
e. Number and title of applicable Specification Section.
f. Specification paragraph number and generic name of each item.

3. Email Transmittal: Provide PDF transmittal. Include digital image file illustrating Sample characteristics, and identification information for record.
4. Paper Transmittal: Include paper transmittal including complete submittal information indicated.
5. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

6. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.

   a. Number of Samples: Submit **one** full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Owner will return submittal with options selected.

7. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

   a. Number of Samples: Submit two sets of Samples. Owner retain one Sample set; remainder will be returned.

      1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
      2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

E. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of Owners and owners, and other information specified.

F. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.

G. Certificates:

1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be

signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.

2. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
4. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
5. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
6. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

1.7 CONTRACTOR'S REVIEW

A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Owner.

B. Contractor's Approval: Indicate Contractor's approval for each submittal with a uniform approval stamp. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

1. Owner will not review submittals received from Contractor that do not have Contractor's review and approval.

1.8 OWNER'S REVIEW

A. Action Submittals: Owner will review each submittal, indicate corrections or revisions required, and return it.

1. PDF Submittals: Owner will indicate, via markup on each submittal, the appropriate action.

2. Paper Submittals: Owner will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.

B. Informational Submittals: Owner will review each submittal and will not return it, or will return it if it does not comply with requirements. Owner will forward each submittal to appropriate party.

C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Owner.

D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

E. Owner will return without review or discard submittals received from sources other than Contractor.

F. Submittals not required by the Contract Documents will be returned by Owner without action.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013300

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for quality assurance and quality control.

B. If required, testing and inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements. Owner shall provide notice to "Invitation to Bid" section 001116 if testing is required.

1. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
2. Requirements for Contractor to provide quality-assurance and quality-control services required by Owner or authorities having jurisdiction are not limited by provisions of this Section.

1.2 DEFINITIONS

A. Experienced: When used with an entity or individual, "experienced" unless otherwise further described means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

B. Field Quality-Control Tests and Inspections: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

C. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, assembly, and similar operations.

1. Use of trade-specific terminology in referring to a Work result does not require that certain construction activities specified apply exclusively to specific trade(s).

D. Mockups: Full-size physical assemblies that are constructed on-site either as freestanding temporary built elements or as part of permanent construction. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.

1. Integrated Exterior Mockups (if applicable): Mockups of the exterior envelope constructed on-site as indicated in-place portions of permanent construction, consisting of multiple products, assemblies, and subassemblies, with cutaways enabling inspection of concealed portions of the Work.
2. Product Mockups: Mockups that may include multiple products, materials, or systems specified in a single Section.
3. In-Place Mockups: Mockups constructed on-site in their actual final location as part of permanent construction.

E. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria. Unless otherwise indicated, copies of reports of tests or inspections performed for other than the Project do not meet this definition.

F. Product Tests: Tests and inspections that are performed by a nationally recognized testing laboratory (NRTL) according to 29 CFR 1910.7, by a testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program (NVLAP), or by a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

G. Source Quality-Control Tests and Inspections: Tests and inspections that are performed at the source; for example, plant, mill, factory, or shop.

H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall have the same meaning as testing agency.

I. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

J. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Contractor's quality-control services do not include contract administration activities performed by Owner[**or Construction Manager**].

1.3 CONFLICTING REQUIREMENTS

A. Conflicting Standards and Other Requirements: If compliance with two or more standards or requirements is specified and the standards or requirements establish different or conflicting requirements for minimum quantities or quality levels, inform the Owner regarding the conflict and obtain clarification prior to proceeding with the Work. Refer conflicting requirements that are different, but apparently equal, to Owner for clarification before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as

appropriate, for the context of requirements. Refer uncertainties to Owner for a decision before proceeding.

1.4 INFORMATIONAL SUBMITTALS

A. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

B. Permits, Licenses, and Certificates: For Owner's record, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents established for compliance with standards and regulations bearing on performance of the Work.

1.5 QUALITY ASSURANCE

A. Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units. As applicable, procure products from manufacturers able to meet qualification requirements, warranty requirements, and technical or factory-authorized service representative requirements.

C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Installer Qualifications: A firm or individual experienced in installing, erecting, applying, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.

F. Specialists (if applicable): Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

G. Testing and Inspecting Agency Qualifications (if applicable): An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspection indicated, as documented according to ASTM E329; and with additional qualifications specified

in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.

H. Manufacturer's Technical Representative Qualifications (if applicable): An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

I. Preconstruction Testing (if applicable): Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:

J. Mockups (if applicable): Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

1. Build mockups of size indicated.
2. Build mockups in location indicated or, if not indicated, as directed by Owner.
3. Notify Owner 7 days in advance of dates and times when mockups will be constructed.
4. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed to perform same tasks during the construction at Project.
5. Demonstrate the proposed range of aesthetic effects and workmanship.
6. Obtain Owner's approval of mockups before starting corresponding work, fabrication, or construction.

    a. Allow 7 days for initial review and each re-review of each mockup.

7. Promptly correct unsatisfactory conditions noted by Owner's preliminary review, to the satisfaction of the Owner, before completion of final mockup.
8. Approval of mockups by the Owner does not constitute approval of deviations from the Contract Documents contained in mockups unless Owner specifically approves such deviations in writing.
9. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
10. Demolish and remove mockups when directed unless otherwise indicated.

K. Integrated Exterior Mockups (if applicable): Construct integrated exterior mockup according to approved Shop Drawings. Coordinate installation of exterior envelope materials and products for which mockups are required in individual Specification Sections, along with supporting materials. Comply with requirements in "Mockups" Paragraph.

1.6 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services at Owner's discretion.

B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities, whether specified or not, to verify and document that the Work complies with requirements.

1. Engage a qualified testing agency to perform quality-control services.

    a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.

2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspection will be performed.
3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
4. Testing and inspection requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

D. Testing Agency Responsibilities: Cooperate with Owner and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Owner and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the locations from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections and state in each report whether tested and inspected Work complies with or deviates from requirements.
4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
6. Do not perform duties of Contractor.

E. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 013300 "Submittal Procedures."

F. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in pre-installation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.

G. Contractor's Associated Requirements and Services: Cooperate with agencies and representatives performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspection. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Preliminary design mix proposed for use for material mixes that require control by testing agency.
6. Security and protection for samples and for testing and inspection equipment at Project site.

H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspection.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

1.7 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections (if applicable): Owner will engage a qualified testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, as indicated in Contract Documents.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG (if applicable)

A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Owner.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Owner's reference during normal working hours.

1. Submit log at Project closeout as part of Project Record Documents.

3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspection, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 017300 "Execution."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

B. Related Requirements:

1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.

1.2 USE CHARGES

A. Installation, removal, and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities engaged in the Project to use temporary services and facilities without cost, including, but not limited to, Owner, Occupants of Project, testing agencies, and authorities having jurisdiction.

B. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

C. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.3 INFORMATIONAL SUBMITTALS

A. Site Utilization Plan: Show temporary facilities, temporary utility lines and connections, staging areas, construction site entrances, vehicle circulation, and parking areas for construction personnel.

B. Project Identification and Temporary Signs: Show fabrication and installation details, including plans, elevations, details, layouts, typestyles, graphic elements, and message content.

C. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.

D. Moisture- and Mold-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage and mold. Describe delivery, handling, storage, installation, and protection provisions for materials subject to water absorption or water damage.

1.4 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

C. Accessible Temporary Egress: Comply with applicable provisions in the United States Access Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.

1.5 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 TEMPORARY FACILITIES

A. Field Offices: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.

B. Common-Use Field Office (if applicable): Of sufficient size to accommodate needs of Owner, and construction personnel office activities and to accommodate Project meetings specified in other Division 01 Sections. Keep office clean and orderly. Furnish and equip offices as follows:

2.2 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

B. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.

1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
2. Heating, Cooling, and Dehumidifying Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction, and marked for intended location and application.
3. Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return-air grille

in system and remove at end of construction and clean HVAC system as required in Section 017700 "Closeout Procedures."

C. Air-Filtration Units: Primary and secondary HEPA-filter-equipped portable units with four-stage filtration. Provide single switch for emergency shutoff. Configure to run continuously.

PART 3 - EXECUTION

3.1 TEMPORARY FACILITIES, GENERAL

A. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

3.2 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.3 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.

1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.

1. Connect temporary sewers to system as directed by authorities having jurisdiction.

C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.

D. Sanitary Facilities: Provide temporary toilets, wash facilities, safety shower and eyewash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

E. Temporary Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.

1. Provide temporary dehumidification systems when required to reduce ambient and substrate moisture levels to level required to allow installation or application of finishes and their proper curing or drying.

F. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.

G. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

H. Telephone Service: Use Contractor's mobile phone service.

3.4 SUPPORT FACILITIES INSTALLATION

A. Comply with the following:

1. Provide construction for temporary field offices, shops, and sheds located within construction area or within 30 feet (9 m) of building lines that is noncombustible according to ASTM E136. Comply with NFPA 241.
2. Utilize designated area within existing building for temporary field offices.
3. Maintain support facilities until Owner schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas as indicated on Drawings.

1. Provide dust-control treatment that is nonpolluting and nontracking. Reapply treatment as required to minimize dust.

C. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

D. Parking: Use designated areas of Owner's existing parking areas for construction personnel.

E. Storage and Staging: Use designated areas of Project site for storage and staging needs.

F. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.

1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
2. Remove snow and ice as required to minimize accumulations.

G. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.

1. Identification Signs: Provide Project identification signs as indicated on Drawings.
2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.

    a. Provide temporary, directional signs for construction personnel and visitors.

3. Maintain and touch up signs so they are legible at all times.

H. Waste Disposal Facilities: Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."

I. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Section 017300 "Execution."

J. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

K. Existing Stair Usage: Use of Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.

1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.

3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.

B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

C. Temporary Erosion and Sedimentation Control: Comply with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent and requirements specified in Section 311000 "Site Clearing."

D. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.

1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree- or plant-protection zones.
2. Inspect, repair, and maintain erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
3. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from Project site during the course of Project.
4. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

E. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.

F. Tree and Plant Protection: Comply with requirements specified in Section 015639 "Temporary Tree and Plant Protection."

G. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people from easily entering site except by entrance gates.

1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Furnish one set of keys to Owner.

H. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each workday.

I. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

J. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.

1. Prohibit smoking in construction areas. Comply with additional limits on smoking specified in other Sections.
2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.6 MOISTURE AND MOLD CONTROL

A. Moisture and Mold Protection: Protect stored materials and installed Work in accordance with Moisture and Mold Protection Plan.

B. Exposed Construction Period: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:

1. Protect porous materials from water damage.
2. Protect stored and installed material from flowing or standing water.
3. Keep porous and organic materials from coming into prolonged contact with concrete.

3.7 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

END OF SECTION 015000

SECTION 015639 - TEMPORARY TREE AND PLANT PROTECTION

PART 1 - GENERAL

1.1 SUMMARY

A. Fort Wayne Parks and Recreation Considers tree and plant protection imperative for maintaining the legacy of the park system. It is the contractor's responsibility to protect trees for duration of project.

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

1.2 DEFINITIONS

A. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction and indicated on Drawings.

B. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction and indicated on Drawings.

1.3 PREINSTALLATION MEETINGS

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

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings:

1. Include plans, elevations, sections, and locations of protection-zone fencing and signage, showing relation of equipment-movement routes and material storage locations with protection zones.

C. Samples: For each type of the following:

1. Organic Mulch: Sealed plastic bags labeled with composition of materials by percentage of weight and source of mulch.
2. Protection-Zone Fencing: Assembled Samples.
3. Protection-Zone Signage: Full-size Samples.

D. Tree Pruning Schedule: Written schedule detailing scope and extent of pruning of trees to remain that interfere with or are affected by construction.

1. Contractor shall obtain written permission to prune trees from Owner.

1.5 INFORMATIONAL SUBMITTALS

A. Certification: From arborist, certifying that trees indicated to remain have been protected during construction according to recognized standards and that trees were promptly and properly treated and repaired when damaged.

B. Maintenance Recommendations: From arborist, for care and protection of trees affected by construction during and after completing the Work.

C. Existing Conditions: Documentation of existing trees and plantings indicated to remain, which establishes preconstruction conditions that might be misconstrued as damage caused by construction activities.

1.6 QUALITY ASSURANCE

A. Arborist Qualifications: Certified Arborist as certified by ISA, licensed arborist in jurisdiction where Project is located, current member of ASCA, or registered Consulting Arborist as designated by ASCA, if applicable.

1.7 FIELD CONDITIONS

A. The following practices are prohibited within protection zones:

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

B. Do not direct vehicle or equipment exhaust toward protection zones.

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

PART 2 - PRODUCTS

2.1 MATERIALS

A. Protection-Zone Fencing: Fencing fixed in position and meeting one of the following requirements: Previously used materials may be used when approved by Owner.

1. Chain-Link Protection-Zone Fencing: Galvanized-steel fencing fabricated from minimum 2-inch (50-mm) opening, 0.148-inch- (3.76-mm-) diameter wire chain-link fabric; with pipe posts, minimum 2-3/8-inch- (60-mm-) OD line posts, and 2-7/8-inch- (73-mm-) OD corner and pull posts; with 1-5/8-inch- (42-mm-) OD top rails and 0.177-inch- (4.5-mm-) diameter bottom tension wire; with tie wires, hog ring ties, and other accessories for a complete fence system.

    a. Height: 72 inches

2. Plastic Protection-Zone Fencing: Plastic construction fencing constructed of high-density extruded and stretched polyethylene fabric with 2-inch (50-mm) maximum opening in pattern and supported by tubular or T-shape galvanized-steel posts spaced not more than 96 inches (2400 mm) apart. High-visibility orange color.

    a. Height: 48 inches

3. Gates: Swing access gates matching material and appearance of fencing, to allow for maintenance activities within protection zones.

B. Protection-Zone Signage: Shop-fabricated, rigid plastic or metal sheet with attachment holes pre-punched and reinforced; legibly printed with nonfading lettering.

C. Caution tape shall not be an acceptable barricade.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Erosion and Sedimentation Control: Examine the site to verify that temporary erosion- and sedimentation-control measures are in place. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.

3.2 PREPARATION

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

3.3 PROTECTION ZONES

A. Protection-Zone Fencing: Install protection-zone fencing along edges of protection zones in a manner that will prevent people from easily entering protected areas except by entrance gates.

1. Chain-Link Fencing: Install to comply with ASTM F567 and with manufacturer's written instructions.

2. Posts: Provide appropriate means of post support acceptable to Owner.
3. Access Gates: As required for site accessibility.

B. Protection-Zone Signage: Install protection-zone signage in visibly prominent locations in a manner approved by Owner.

C. Maintain protection zones free of weeds and trash.

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

3.4 EXCAVATION

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

B. Trenching within Protection Zones: Where utility trenches are required within protection zones, excavate under or around tree roots by hand or with air spade, or tunnel under the roots by drilling, auger boring, or pipe jacking. Do not cut main lateral tree roots or taproots; cut only smaller roots that interfere with installation of utilities. Cut roots as required for root pruning.

C. Do not allow exposed roots to dry out before placing permanent backfill.

3.5 ROOT PRUNING

A. Obtain written consent from Owner.

3.6 CROWN PRUNING

A. Obtain written consent from Owner.

3.7 REGRADING

A. Lowering Grade: Where new finish grade is indicated below existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.

B. Raising Grade: Where new finish grade is indicated above existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.

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

3.8 FIELD QUALITY CONTROL

A. Inspections: Engage a qualified arborist to direct plant-protection measures in the vicinity of trees, shrubs, and other vegetation indicated to remain and to prepare inspection reports.

3.9 REPAIR AND REPLACEMENT

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

1. Perform repairs of damaged trunks, branches, and roots within 24 hours according to arborist's written instructions.
2. Replace trees and other plants that cannot be repaired and restored to full-growth status, as determined by Architect.

3.10 DISPOSAL OF SURPLUS AND WASTE MATERIALS

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

END OF SECTION 015639

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

B. Related Requirements:

1. Section 012500 "Substitution Procedures" for requests for substitutions.

1.2 DEFINITIONS

A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
2. New Products: Items that have not previously been incorporated into another project or facility. Salvaged items or items reused from other projects are not considered new products. Items that are manufactured or fabricated to include recycled content materials are considered new products, unless indicated otherwise.
3. Comparable Product: Product by named manufacturer that is demonstrated and approved through the comparable product submittal process described in Part 2 "Comparable Products" Article, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Basis-of-Design Product Specification: A specification in which a single manufacturer's product is named and accompanied by the words "basis-of-design product" or "or approved equal", including make or model number or other designation. Published attributes and characteristics of basis-of-design product establish salient characteristics of products.

1. Evaluation of Comparable Products: In addition to the basis-of-design product description, product attributes and characteristics may be listed to establish the significant qualities related to type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other special features and requirements for purposes of evaluating comparable products of additional manufacturers named in the specification.

C. Subject to Compliance with Requirements: Where the phrase "Subject to compliance with requirements" introduces a product selection procedure in an individual Specification Section, provide products qualified under the specified product procedure. In the event that a named product or product by a named manufacturer does not meet the other requirements of the specifications, select another named product or product from another named manufacturer that does meet the requirements of the specifications; submit a comparable product request or substitution request, if applicable.

D. Comparable Product Request Submittal: An action submittal requesting consideration of a comparable product, including the following information:

1. Identification of basis-of-design product or fabrication or installation method to be replaced, including Specification Section number and title and Drawing numbers and titles.
2. Data indicating compliance with the requirements specified in Part 2 "Comparable Products" Article.

E. Basis-of-Design Product Specification Submittal: An action submittal complying with requirements in Section 013300 "Submittal Procedures."

F. Substitution: Refer to Section 012500 "Substitution Procedures" for definition and limitations on substitutions.

1.3 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products, using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

1.5 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Written standard warranty form furnished by individual manufacturer for a particular product and issued in the name of the Owner or endorsed by manufacturer to Owner.

2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner and issued in the name of the Owner or endorsed by manufacturer to Owner.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties meeting requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," Owner will make selection.
5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.

B. Product Selection Procedures:

1. Limited List of Products: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered unless otherwise indicated.

    a. Limited list of products may be indicated by the phrase "Subject to compliance with requirements, provide one of the following."

2. Non-Limited List of Products: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed or an unnamed product that complies with requirements.

    a. Non-limited list of products is indicated by the phrase "Subject to compliance with requirements, available products that may be incorporated in the Work include, but are not limited to, the following."
    b. Provision of an unnamed product is not considered a substitution, if the product complies with requirements.

3. Limited List of Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered unless otherwise indicated.

a. Limited list of manufacturers is indicated by the phrase "Subject to compliance with requirements, provide products by one of the following."

4. Non-Limited List of Manufacturers: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed or a product by an unnamed manufacturer that complies with requirements.

   a. Non-limited list of manufacturers is indicated by the phrase "Subject to compliance with requirements, available manufacturers whose products may be incorporated in the Work include, but are not limited to, the following."
   b. Provision of products of an unnamed manufacturer is not considered a substitution, if the product complies with requirements.

5. Basis-of-Design or "or approved equal" Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications may additionally indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

   a. For approval of products by unnamed manufacturers, comply with requirements in Section 012500 "Substitution Procedures" for substitutions for convenience.

C. Visual Matching Specification: Where Specifications require the phrase "match Owner's sample," provide a product that complies with requirements and matches Owner's sample. Owner's decision will be final on whether a proposed product matches.

1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.

D. Visual Selection Specification: Where Specifications include the phrase "as selected by Owner from manufacturer's full range" or a similar phrase, select a product that complies with requirements. Owner will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

A. Conditions for Consideration of Comparable Products: Owner will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Owner may return requests without action, except to record noncompliance with the following requirements:

1. Evidence that proposed product does not require revisions to the Contract Documents, is consistent with the Contract Documents, will produce the indicated results, and is compatible with other portions of the Work.

2. Detailed comparison of significant qualities of proposed product with those of the named basis-of-design product. Significant product qualities include attributes, such as type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other specific features and requirements.
3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects, with project names and addresses and names and addresses of Owners and owners, if requested.
5. Samples, if requested.

B. Owner's Action on Comparable Products Submittal: If necessary, Owner will request additional information or documentation for evaluation, as specified in Section 013300 "Submittal Procedures."

1. Form of Approval of Submittal: As specified in Section 013300 "Submittal Procedures."
2. Use product specified if Owner does not issue a decision on use of a comparable product request within time allocated.

C. Submittal Requirements, Two-Step Process: Approval by the Owner of Contractor's request for use of comparable product is not intended to satisfy other submittal requirements. Comply with specified submittal requirements.

D. Submittal Requirements, Single-Step Process: When acceptable to Owner, incorporate specified submittal requirements of individual Specification Section in combined submittal for comparable products. Approval by the Owner of Contractor's request for use of comparable product and of individual submittal requirements will also satisfy other submittal requirements.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes general administrative and procedural requirements governing execution of the Work, including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. Installation of the Work.
4. Cutting and patching.
5. Coordination of Owner's portion of the Work.
6. Coordination of Owner-installed products.
7. Progress cleaning.
8. Starting and adjusting.
9. Protection of installed construction.

B. Related Requirements:

1. Section 011000 "Summary" for coordination of Owner-furnished products, Owner-performed work, Owner's separate contracts, and limits on use of Project site.
2. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, replacing defective work, and final cleaning.
3. Section 024119 "Selective Demolition" for demolition and removal of selected portions of the building.

1.2 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of subsequent work.

B. Patching: Fitting and repair work required to restore construction to original conditions after installation of subsequent work.

1.3 INFORMATIONAL SUBMITTALS

A. Certified Surveys (if applicable): Submit 2 copies signed by land surveyor.

1.4 CLOSEOUT SUBMITTALS

A. Final Property Survey: Submit two paper copies and one PDF electronic copy showing the Work performed and record survey data.

1.5 QUALITY ASSURANCE

A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.

B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

1. Structural Elements: When cutting and patching structural elements, or when encountering the need for cutting and patching of elements whose structural function is not known, notify Owner of locations and details of cutting and await directions from Owner before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Owner's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

C. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of specified products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Comply with requirements specified in other Sections.

1. For projects requiring compliance with sustainable design and construction practices and procedures, use products for patching that comply with sustainable design requirements.

B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Owner for the visual and functional performance of in-place materials. Use materials that are not considered hazardous.

C. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, gas service piping, and water-service piping; underground electrical services; and other utilities.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

1. Description of the Work, including Specification Section number and paragraph, and Drawing sheet number and detail, where applicable.
2. List of detrimental conditions, including substrates.
3. List of unacceptable installation tolerances.
4. Recommended corrections.

D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to local utility and Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Owner in accordance with requirements in Section 013100 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks and existing conditions. If discrepancies are discovered, notify Owner and Owner's Consultant promptly.

B. Engage a land surveyor or professional engineer experienced in laying out the Work, using the following accepted surveying practices:

1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
2. Establish limits on use of Project site.
3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
4. Inform installers of lines and levels to which they must comply.
5. Check the location, level and plumb, of every major element as the Work progresses.
6. Notify Owner when deviations from required lines and levels exceed allowable tolerances.

7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.

C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.

D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Owner.

3.4 FIELD ENGINEERING

A. Identification: Owner will identify existing benchmarks, control points, and property corners.

B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.

1. Do not change or relocate existing benchmarks or control points without prior written approval of Owner. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Owner before proceeding.
2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

C. Benchmarks: Establish and maintain a minimum of **two** permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.

1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

D. Certified Survey (if applicable): On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.

E. Final Property Survey (if applicable): Engage a land surveyor or professional engineer to prepare a final property survey showing significant features (real property) for Project. Include

on the survey a certification, signed by land surveyor or professional engineer, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.

1. Show boundary lines, monuments, streets, site improvements and utilities, existing improvements and significant vegetation, adjoining properties, acreage, grade contours, and the distance and bearing from a site corner to a legal point.

3.5 INSTALLATION

A. Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
4. Maintain minimum headroom clearance of 96 inches (2440 mm) in occupied spaces and 90 inches (2300 mm) in unoccupied spaces, unless otherwise indicated on Drawings.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure satisfactory results as judged by Owner. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations, so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy of type expected for Project.

E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on-site and placement in permanent locations.

F. Tools and Equipment: Select tools or equipment that minimize production of excessive noise levels.

G. Templates: Obtain and distribute to the parties involved templates for Work specified to be factory prepared and field installed. Check Shop Drawings of other portions of the Work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions with manufacturer.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Owner.
2. Allow for building movement, including thermal expansion and contraction.

3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

I. Joints: Make joints of uniform width. Where joint locations in exposed Work are not indicated, arrange joints for the best visual effect, as judged by Owner. Fit exposed connections together to form hairline joints.

J. Repair or remove and replace damaged, defective, or nonconforming Work.

1. Comply with Section 017700 "Closeout Procedures" for repairing or removing and replacing defective Work.

3.6 CUTTING AND PATCHING

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

C. Temporary Support: Provide temporary support of Work to be cut.

D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching in accordance with requirements in Section 011000 "Summary."

F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.

G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
6. Proceed with patching after construction operations requiring cutting are complete.

H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as practicable, as judged by Owner. Provide materials and comply with installation requirements specified in other Sections, where applicable.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

    a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    b. Restore damaged pipe covering to its original condition.
3. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.7 COORDINATION OF OWNER'S PORTION OF THE WORK

A. Site Access: Provide access to Project site for Owner's construction personnel and Owner's separate contractors.

1. Provide temporary facilities required for Owner-furnished, Contractor-installed products.
2. Refer to Section 011000 "Summary" for other requirements for Owner-furnished, Contractor-installed products

B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel and Owner's separate contractors.

1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable

timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.

3.8 PROGRESS CLEANING

A. Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

    a. Use containers intended for holding waste materials of type to be stored.

4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where Work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 015000 "Temporary Facilities and Controls" and Section 017419 "Construction Waste Management and Disposal."

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.9 STARTING AND ADJUSTING

A. Coordinate startup and adjusting of equipment and operating components with requirements in Section 019113 "General Commissioning Requirements."

B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.

D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

E. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

3.10 PROTECTION AND REPAIR OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Repair Work previously completed and subsequently damaged during construction period. Repair to like-new condition.

C. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.

D. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 017300

SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Salvaging nonhazardous demolition and construction waste.
2. Disposing of nonhazardous demolition and construction waste.

B. Related Requirements:

1. Section 011200 "Multiple Contract Summary" for coordination of responsibilities for waste management.
2. Section 311000 "Site Clearing" for disposition of waste resulting from site clearing and removal of above- and below-grade improvements.

1.2 DEFINITIONS

A. Construction Waste: Building, structure, and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

B. Demolition Waste: Building, structure, and site improvement materials resulting from demolition operations.

C. Disposal: Removal of demolition or construction waste and subsequent salvage, sale, recycling, or deposit in landfill, incinerator acceptable to authorities having jurisdiction, or designated spoil areas on Owner's property.

D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.3 SALVAGING DEMOLITION WASTE

A. Comply with requirements in Section 024119 "Selective Demolition" if applicable.

B. Salvaged Items for Reuse in the Work:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
3. Store items in a secure area until installation.
4. Protect items from damage during transport and storage.
5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.

C. Salvaged Items for Sale and Donation: Not permitted on Project site.

D. Salvaged Items for Owner's Use:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area designated by Owner.
5. Protect items from damage during transport and storage.

1.4 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged or recycled, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. General: Except for items or materials to be salvaged or recycled, remove waste materials and legally dispose of at designated spoil areas on Owner's property.

C. Burning: Do not burn waste materials.

END OF SECTION 017419

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for Contract closeout, including, but not limited to, the following:

1. Substantial Completion procedures.
2. Final completion procedures.
3. Warranties.
4. Final cleaning.

B. Related Requirements:

1. Section 017823 "Operation and Maintenance Data" for additional operation and maintenance manual requirements.
2. Section 017839 "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
3. Section 017900 "Demonstration and Training" for requirements to train the Owner's maintenance personnel to adjust, operate, and maintain products, equipment, and systems.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of cleaning agent.

B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.

C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.3 CLOSEOUT SUBMITTALS

A. Certificates of Release: From authorities having jurisdiction.

B. Certificate of Insurance: For continuing coverage.

1.4 SUBSTANTIAL COMPLETION PROCEDURES

A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's "punch list"), indicating the value of each item on the list and reasons why the Work is incomplete.

B. Submittals Prior to Substantial Completion: Complete the following a minimum of 7 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction, permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
2. Submit closeout submittals specified in other Division 01 Sections, including Project Record Documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Owner. Label with manufacturer's name and model number.
5. Submit testing, adjusting, and balancing records, if required.
6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.

C. Procedures Prior to Substantial Completion: Complete the following a minimum of 7 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Advise Owner of pending insurance changeover requirements.
2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
3. Complete startup and testing of systems and equipment with facility representative and Owner's representative in attendance.
4. Perform preventive maintenance on equipment used prior to Substantial Completion.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
6. Advise Owner of changeover in utility services.
7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
9. Complete final cleaning requirements.
10. Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.

D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 7 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Owner will either proceed with inspection or notify Contractor of unfulfilled requirements. Owner will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Owner, that must be completed or corrected before certificate will be issued.

1.5 FINAL COMPLETION PROCEDURES

A. Submittals Prior to Final Completion: Before requesting final inspection for determining Final Completion, complete the following:

1. Submit a final Application for Payment in accordance with Section 012900 "Payment Procedures."
2. Certified List of Incomplete Items: Submit certified copy of Owner's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Owner. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Submit pest-control final inspection report.

B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 7 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Owner will either proceed with inspection or notify Contractor of unfulfilled requirements. Owner will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1.6 LIST OF INCOMPLETE ITEMS

A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor, listed by room or space number.
2. Organize items applying to each space by major element, including categories for ceilings, individual walls, floors, equipment, and building systems.
3. Include the following information at the top of each page:

    a. Project name.
    b. Date.
    c. Name of Owner.
    d. Name of Contractor.
    e. Page number.

4. Submit list of incomplete items in the following format:

    a. MS Excel Electronic File: Owner will return annotated file.
    b. PDF Electronic File: Owner will return annotated file.

1.7 SUBMITTAL OF PROJECT WARRANTIES

A. Time of Submittal: Submit written warranties on request of Owner for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.

B. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.

C. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

D. Warranties in Paper Form:

1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (215-by-280-mm) paper.

E. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:

a. Clean Project site of rubbish, waste material, litter, and other foreign substances.

b. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
c. Remove debris and surface dust from limited-access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
d. Clean flooring, removing debris, dirt, and staining; clean according to manufacturer's recommendations.
e. Vacuum and mop concrete.
f. Remove labels that are not permanent.
g. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint, and other foreign substances.
h. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
i. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
j. Clean ducts, blowers, and coils.
k. Clean luminaires, lamps, globes, and reflectors to function with full efficiency.
l. Clean strainers.
m. Leave Project clean and ready for occupancy.

C. Construction Waste Disposal: Comply with waste-disposal requirements in Section 015000 "Temporary Facilities and Controls."

D. Complete repair and restoration operations required by Section 017300 "Execution" before requesting inspection for determination of Substantial Completion.

END OF SECTION 017700

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:

1. Operation and maintenance documentation directory manuals.
2. Emergency manuals.
3. Systems and equipment operation manuals.
4. Systems and equipment maintenance manuals.
5. Product maintenance manuals.

1.2 CLOSEOUT SUBMITTALS

A. Submit operation and maintenance manuals. Provide content for each manual as specified in individual Specification Sections, and as reviewed and approved at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.

B. Format: Submit operation and maintenance manuals in the following format:

1. Submit .PDF format to Owner.
2. Submit two paper copies. Owner will return one marked up copy either via email or mail.

C. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 7 days before commencing demonstration and training. Owner will return copy with comments.

1. Correct or revise each manual to comply with Owner's comments. Submit copies of each corrected manual within 7 days of receipt of Owner's comments and prior to commencing demonstration and training.

D. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

1.3 FORMAT OF OPERATION AND MAINTENANCE MANUALS

A. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.

1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
2. File Names and Bookmarks: Bookmark individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

B. Manuals, Paper Copy: Submit manuals in the form of hard-copy, bound and labeled volumes.

1. Binders: Heavy-duty, three-ring, vinyl-covered, binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch (215-by-280-mm) paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
2. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.

    a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
    b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

1.4 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

A. Organization of Manuals: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:

1. Title page.
2. Table of contents.
3. Manual contents.

B. Title Page: Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Name and address of Owner.
4. Date of submittal.
5. Name and contact information for Contractor.
6. Name and contact information for Construction Manager.
7. Name and contact information for Owner.
8. Name and contact information for Commissioning Authority.
9. Names and contact information for major consultants to the Owner that designed the systems contained in the manuals.
10. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

1.5 EMERGENCY MANUALS

A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.

B. Content: Organize manual into a separate section for each of the following:

1. Type of emergency.
2. Emergency instructions.
3. Emergency procedures.

C. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:

1. Fire.
2. Flood.
3. Gas leak.
4. Water leak.
5. Power failure.
6. Water outage.
7. System, subsystem, or equipment failure.
8. Chemical release or spill.

D. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

E. Emergency Procedures: Include the following, as applicable:

1. Instructions on stopping.
2. Shutdown instructions for each type of emergency.
3. Operating instructions for conditions outside normal operating limits.
4. Required sequences for electric or electronic systems.
5. Special operating instructions and procedures.

1.6 SYSTEMS AND EQUIPMENT OPERATION MANUALS

A. Systems and Equipment Operation Manual: Assemble a complete set of data indicating operation of each system, subsystem, and piece of equipment not part of a system. Include information required for daily operation and management, operating standards, and routine and special operating procedures.

B. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
2. Performance and design criteria if Contractor has delegated design responsibility.
3. Operating standards.
4. Operating procedures.
5. Operating logs.
6. Wiring diagrams.
7. Control diagrams.
8. Piped system diagrams.
9. Precautions against improper use.
10. License requirements including inspection and renewal dates.

C. Descriptions: Include the following:

1. Product name and model number. Use designations for products indicated on Contract Documents.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

D. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

E. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

F. Piped Systems: Diagram piping as installed, and identify color coding where required for identification.

1.7 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

A. Systems and Equipment Maintenance Manuals: Assemble a complete set of data indicating maintenance of each system, subsystem, and piece of equipment not part of a system. Include manufacturers' maintenance documentation, preventive maintenance procedures and frequency, repair procedures, wiring and systems diagrams, lists of spare parts, and warranty information.

B. Content: For each system, sub-system, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranties and bonds, as described below.

C. Manufacturers' Maintenance Documentation: Include the following information for each component part or piece of equipment:

1. Standard maintenance instructions and bulletins; include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

    a. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
3. Identification and nomenclature of parts and components.
4. List of items recommended to be stocked as spare parts.

D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:

1. Test and inspection instructions.
2. Troubleshooting guide.
3. Precautions against improper maintenance.
4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
5. Aligning, adjusting, and checking instructions.
6. Demonstration and training video recording, if available.

E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

G. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

H. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.

1.8 PRODUCT MAINTENANCE MANUALS

A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

B. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 017823

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for Project Record Documents, including the following:

1. Record Drawings.
2. Record specifications.
3. Record Product Data.

B. Related Requirements:

1. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.2 CLOSEOUT SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit one set of marked-up record prints.
2. Number of Copies: Submit copies of Record Drawings as follows:
    a. Initial Submittal:
        1) Submit one set paper-copy set(s) of marked-up record prints.
        2) Submit PDF electronic files of scanned record prints and one set of file prints.
        3) Owner will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
    b. Final Submittal:
        1) Submit two paper-copy set(s) of marked-up record prints.
        2) Submit PDF electronic files of scanned Record Prints and one set of file prints.
        3) Print each drawing, whether or not changes and additional information were recorded.

B. Record Specifications: Submit annotated PDF electronic files and paper copies of Project's Specifications, including addenda and Contract modifications.

C. Record Product Data: Submit annotated PDF electronic files and directories and paper copies of each submittal.

1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

1.3 RECORD DRAWINGS

A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.

1. Preparation: Mark record prints to show the actual installation, where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.

    a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    b. Accurately record information in an acceptable drawing technique.
    c. Record data as soon as possible after obtaining it.
    d. Record and check the markup before enclosing concealed installations.
    e. Cross-reference record prints to corresponding photographic documentation.

2. Content: Types of items requiring marking include, but are not limited to, the following:

    a. Dimensional changes to Drawings.
    b. Revisions to details shown on Drawings.
    c. Depths of foundations.
    d. Locations and depths of underground utilities.
    e. Revisions to routing of piping and conduits.
    f. Revisions to electrical circuitry.
    g. Actual equipment locations.
    h. Duct size and routing.
    i. Locations of concealed internal utilities.
    j. Changes made by Change Order or [**Construction**] [**Work**] Change Directive.
    k. Changes made following Owner's written orders.
    l. Details not on the original Contract Drawings.
    m. Field records for variable and concealed conditions.
    n. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
4. Mark record prints with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Owner[**and Construction Manager**]. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:

1. Format: Same digital data software program, version, and operating system as for the original Contract Drawings.
2. Format: DWG, Version 2018 or newer, Microsoft Windows operating system.
3. Format: Annotated PDF electronic file.
4. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
5. Refer instances of uncertainty to Owner for resolution.
6. Owner will furnish Contractor with one set of digital data files of the Contract Drawings for use in recording information.

C. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize record prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
2. Format: Annotated PDF electronic file.
3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
4. Identification: As follows:
    a. Project name.
    b. Date.
    c. Designation "PROJECT RECORD DRAWINGS."
    d. Name of Owner.
    e. Name of Contractor.

1.4 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation, where installation varies from that indicated in Specifications, addenda, and Contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
4. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
5. Note related Change Orders, Record Product Data, and Record Drawings where applicable.

B. Format: Submit record specifications as scanned PDF electronic file(s) of marked-up paper copy of Specifications.

1.5 RECORD PRODUCT DATA

A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and revisions to Project Record Documents as they occur; do not wait until end of Project.

B. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, Record Specifications, and Record Drawings where applicable.

C. Format: Submit Record Product Data as scanned PDF electronic file(s) of marked-up paper copy of Product Data.

1. Include Record Product Data directory organized by Specification Section number and title, electronically linked to each item of Record Product Data.

1.6 MAINTENANCE OF RECORD DOCUMENTS

A. Maintenance of Record Documents: Store Record Documents in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Owner's reference during normal working hours.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 017839

SECTION 017900 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:

1. Instruction in operation and maintenance of systems, subsystems, and equipment.

1.2 QUALITY ASSURANCE

A. Facilitator Qualifications: An individual experienced with installed equipment and in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.

1.3 COORDINATION

A. Coordinate instruction/demonstration schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.

1.4 INSTRUCTION PROGRAM

A. Training: Include instruction for the following as applicable to the system, equipment, or component:

1. Basis of System Design, Operational Requirements, and Criteria: Include the following:

a. System, subsystem, and equipment descriptions.
b. Performance and design criteria if Contractor is delegated design responsibility.
c. Operating standards.
d. Regulatory requirements.
e. Equipment function.
f. Operating characteristics.
g. Limiting conditions.
h. Performance curves.

2. Documentation: Review the following items in detail:

a. Emergency manuals.
b. Systems and equipment operation manuals.

c. Systems and equipment maintenance manuals.
d. Product maintenance manuals.
e. Project Record Documents.
f. Identification systems.
g. Warranties and bonds.
h. Maintenance service agreements and similar continuing commitments.

3. Emergencies: Include the following, as applicable:

a. Instructions on meaning of warnings, trouble indications, and error messages.
b. Instructions on stopping.
c. Shutdown instructions for each type of emergency.
d. Operating instructions for conditions outside of normal operating limits.
e. Sequences for electric or electronic systems.
f. Special operating instructions and procedures.

4. Operations: Include the following, as applicable:

a. Startup procedures.
b. Equipment or system break-in procedures.
c. Routine and normal operating instructions.
d. Regulation and control procedures.
e. Control sequences.
f. Safety procedures.
g. Instructions on stopping.
h. Normal shutdown instructions.
i. Operating procedures for emergencies.
j. Operating procedures for system, subsystem, or equipment failure.
k. Seasonal and weekend operating instructions.
l. Required sequences for electric or electronic systems.
m. Special operating instructions and procedures.

5. Adjustments: Include the following:

a. Alignments.
b. Checking adjustments.
c. Noise and vibration adjustments.
d. Economy and efficiency adjustments.

6. Troubleshooting: Include the following:

a. Diagnostic instructions.
b. Test and inspection procedures.

7. Maintenance: Include the following:

a. Inspection procedures.
b. Types of cleaning agents to be used and methods of cleaning.
c. List of cleaning agents and methods of cleaning detrimental to product.

d. Procedures for routine cleaning.
e. Procedures for preventive maintenance.
f. Procedures for routine maintenance.
g. Instruction on use of special tools.

8. Repairs: Include the following:

a. Diagnosis instructions.
b. Repair instructions.
c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
d. Instructions for identifying parts and components.
e. Review of spare parts needed for operation and maintenance.

1.5 PREPARATION

A. Perform necessary steps to prepare for demonstration(s).

1.6 INSTRUCTION

A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.

B. Scheduling: Provide instruction at mutually agreed-on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.

C. Training/Demonstration Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.

PART 2 - PRODUCTS

PART 3 - EXECUTION

END OF SECTION 017900

SECTION 024116 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Demolition and removal of selected portions of building or structure (this includes both the building exterior and interior).
2. Demolition and removal of selected elements.
3. Salvage of existing items to be reused or recycled.

B. Summary of Work Description Includes:

1. The selective demolition work shall include, but is not limited to, all of the required removal and disposal offsite of existing interior and exterior construction as shown on the drawings and specified herein.

2. The selective demolition items shall include, but are not limited to the following:

a. Concrete paving and reservoir trenches.
b. Precast concrete curbs.
c. Fountain feature piping and spray nozzles.
d. Fiberglass grating.
e. Fountain system pups, piping, and control.
f. Mechanical and electrical equipment as shown and required.

3. Selective Demolition and salvage shall include the careful removal and salvage and protection of any full-length sections of precast curbs required to be removed and not re-used.

1.2 MATERIALS OWNERSHIP

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

1.3 PREINSTALLATION MEETINGS

A. Pre-demolition Conference: Conduct conference at Project Site.

1.4 FIELD CONDITIONS

A. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

B. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

C. Storage or sale of removed items or materials on-site is not permitted.

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

1.5 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials and using approved contractors so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Identify and examine any potential safety hazards found on the roof areas resulting from the demolition work being near electrical power features, which shall include, but are not limited to, existing or abandoned power drops, low hung power lines etc. Take all necessary precautions dictated by code and or as required to ensure safe working conditions for the duration of the project.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services / Systems to Remain: Maintain services / systems indicated to remain and protect them against damage.

3.3 PROTECTION

A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

B. Protect existing grass, landscaping, exterior sidewalks, paving, concrete patio areas, parked vehicles, equipment etc. during the demolition and construction phase.

C. Protect existing equipment and materials etc. during the demolition and construction phase.

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

3.4 DEMOLITION

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

1. Neatly cut openings and holes plumb, square and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
4. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors or framing.
5. Dispose of demolished items and materials promptly.
6. Stop demolition work and notify the Architect immediately if the demolition work uncovers or exposes any structural condition or utility work that may cause a dangerous or unsafe and hazardous condition. Do not continue demolition work until given notification to proceed by the architect.

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

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

3.5 CLEANING

A. Remove demolition waste materials from Project Site.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn demolished materials.

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

END OF SECTION 024116

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:

1. Extent of concrete work is shown in Drawings

1.2 DEFINITIONS

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

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Design Mixtures: For each concrete mixture submit mix designs prepared in accordance with ACI 301. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1. Include the following items with each mix design submitted:

a. Intended use of the mix
b. Concrete compressive strength data used for standard deviation calculations
c. History of performance of the mix
d. Cement mill test reports
e. Mill test reports of fly ash chemical and physical analysis and certification of compliance with ASTM C 618 Class C
f. Coarse aggregate gradation, deleterious substances and physical property report (ASTM C 33, class designation)
g. Coarse aggregate soundness test reports (ASTM C88)
h. Certification aggregate are uniform in quality, gradation, colors and quantity
i. Fine aggregate gradation, deleterious substances and physical property report (ASTM C 33)
j. Admixture compatibility certification letter
k. Admixture Manufacturer's "Product Data Sheets" and "Material Safety Data Sheets"
l. Admixture Manufacturer's certification of conformance with appropriate ASTM standards

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

C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.

1. Beams and Walls: ¼" scale elevations of all beams and walls shall be provided with all reinforcing shown on the elevations, not scheduled.
2. Slabs and Mats: Reinforcing for all concrete slabs shall be shown on a floor plan. Reinforcing shall not be scheduled.
3. Slabs and Mats: A support system plan for all slabs shall be provided. Supports for slab top and bottom bars shall be shown in number and location.
4. Columns: Full height elevations for all columns shall be provided with all floor elevations marked.
5. Sections shall be provided to clearly show bar positions and clearances to forms.
6. On wall sections indicate spacers used to maintain clearances.
7. Shop drawings shall include all details, sections, and installation instructions indicated on the structural drawings that are required by the contractor to place the reinforcement without using the structural drawings.

D. Formwork Shop Drawings: Prepared by or under the supervision of a qualified professional engineer detailing fabrication, assembly, and support of formwork.

1. Shoring and Reshoring: Indicate proposed schedule and sequence of stripping formwork, shoring removal, and reshoring installation and removal.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data.

B. Welding Certificates.

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

1. Cementitious materials.
2. Admixtures.
3. Form materials and form-release agents.
4. Steel reinforcement and accessories.
5. Waterstops.
6. Curing compounds.
7. Floor and slab treatments.
8. Bonding agents.
9. Adhesives.
10. Vapor retarders.
11. Joint-filler strips.
12. Repair materials.

D. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:

1. Aggregates.

E. Field quality-control reports.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.

B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."

C. Testing Agency Qualifications: An independent agency, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.

1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.
2. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician - Grade I. Testing Agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician - Grade II.

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

E. Welding Qualifications: Qualify procedures and personnel according to AWS D1.4, "Structural Welding Code - Reinforcing Steel."

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

1. ACI 301, "Specifications for Structural Concrete,"
2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

G. Concrete Testing Service: The Owner shall engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.

Materials and installed work may require testing and retesting, as directed by Engineer at any time during progress of work. Allow free access to material stockpiles and facilities. Test, including retesting of rejected materials and installed work, shall be done at Contractor's expense.

1.6 FIELD CONDITIONS (REFER TO PART 3 – EXECUTION PAR 3.8 CONCRETE PLACEMENT)

A. Cold-Weather Placement: Comply with ACI 306.1

1. Do Not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

B. Hot-Weather Placement: Comply with ACI 301 (ACI 301M).

1.7 DELIVERY, STORAGE, AND HANDLING

A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.

B. Waterstops: Store waterstops under cover to protect from moisture, sunlight, dirt, oil, and other contaminants.

PART 2 - PRODUCTS

2.1 FORM-FACING MATERIALS

A. Provide from material with sufficient thickness to withstand pressure of newly-placed concrete without bow or deflection.

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

1. Plywood, metal, or other approved panel materials.
2. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:

a. High-density overlay, Class 1 or better.
b. Medium-density overlay, Class 1 or better; mill-release agent treated and edge sealed.
c. Structural 1, B-B or better; mill oiled and edge sealed.
d. B-B (Concrete Form), Class 1 or better; mill oiled and edge sealed.

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

D. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch, minimum (or as indicated on Drawings).

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

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

1. Formulate form-release agent with rust inhibitor for steel form-facing materials.

G. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.

1. Furnish units that will leave no corrodible metal closer than 1 inch to the plane of exposed concrete surface.
2. Furnish ties that, when removed, will leave holes no larger than 1 inch in diameter in concrete surface.
3. Furnish ties with integral water-barrier plates to walls indicated to receive damp proofing or waterproofing.

2.2 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A 615, Grade 60, deformed.

B. Low-Alloy-Steel Reinforcing Bar (where bars are to be welded to structural steel): ASTM A 706, deformed.

C. Plain-Steel Welded Wire Reinforcement: ASTM A 185, plain, fabricated from as-drawn steel wire into flat sheets.

2.3 REINFORCEMENT ACCESSORIES

A. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60, plain-steel bars, cut true to length with ends square and free of burrs.

B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:

1. For slabs-on-grade, use supports with sand plates or horizontal runners where base material will not support chair legs.
2. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports.

2.4 CONCRETE MATERIALS

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

1. Portland Cement: ASTM C 150, Type I, unless otherwise acceptable to Engineer.
2. Fly Ash: ASTM C 618, Class C.
   a. Fly ash shall not alter specified levels of air entrainment nor reduce strength requirements for any mix
3. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.
4. Silica Fume: ASTM C 1240, amorphous silica.

B. Normal-Weight Aggregates: ASTM C 33, and as herein specified.

1. Provide aggregates from a single source.
2. Maximum Coarse-Aggregate Size: Per ACI requirements (3/4" nominal maximum).
3. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
4. For exterior exposed surfaces, do not use fine or coarse aggregate containing spalling-causing deleterious substances.
5. Local aggregates not complying with ASTM C 33, but which have been shown by special test or actual service to produce concrete of adequate strength and durability may be used when acceptable to Engineer.

C. Water: ASTM C 94, Clean, free of oil, acids, alkalis, and organic matter, and potable.

2.5 ADMIXTURES

A. Admixtures shall be used to provide proper workability, finish-ability, and setting times at low water-cement ratios and to increase compressive strength, of concrete as approved by Engineer. However, cement content shall not be reduced.

B. Air-Entraining Admixture: ASTM C 260.

C. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.

1. Water-Reducing Admixture: ASTM C 494, Type A.

    a. Concrete Slump: 4"-5"
    b. Use shall not change the requirement of:

        1) Water/cementitious ratio
        2) Concrete Strength
        3) Air content
        4) Specification for placing, finishing, and curing

2. High-Range, Water-Reducing Admixture: ASTM C 494, Type F or G.

    a. Concrete Slump: 6"-8"
    b. Use shall not change the requirement of:

        1) Water/cementitious ratio
        2) Concrete Strength
        3) Air content
        4) Specification for placing, finishing, and curing

3. Plasticizing and Retarding Admixture: ASTM C 1017, Type I or II.

    a. Concrete Slump: 6"-9"
    b. Use shall not change the requirement of:

        1) Concrete Strength
        2) Air content
        3) Specification for placing, finishing, and curing

4. Non-corrosive non-chloride accelerator: ASTM C 494, Type C or E

    a. Admixture shall not contain more chloride ions than are present in municipal drinking water. Admixture Manufacturer must have long-term test data from an independent testing laboratory (at least a year's duration) using an acceptable accelerated corrosion test method such as that using electrical potential measures.

2.6 WATERSTOPS

A. Self-Expanding Butyl Strip Waterstops: Manufactured rectangular or trapezoidal strip, butyl rubber with sodium bentonite or other hydrophilic polymers, for adhesive bonding to concrete, 3/4 by 1 inch.

2.7 VAPOR RETARDERS

A. Sheet Vapor Retarder: Provide vapor retarding cover under slabs-on-grade unless otherwise noted. Unless otherwise directed in Division 7, provide a polyethylene sheet not less than 15 mils thick which is resistant to decay when tested in accordance with ASTM E 1745, Class A. Include manufacturer's recommended adhesive or pressure-sensitive tape.

2.8 CURING MATERIALS

A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.

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

C. Moisture-Retaining Cover: ASTM C 171
   1. Polyethylene film
   2. White burlap-polyethylene sheet.

D. Water: Potable.

E. Curing Compounds:

   1. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.

2.9 RELATED MATERIALS

A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.

B. Bonding Agent: ASTM C 1059/C 1059M, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

C. Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows:

   1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

2.10 GROUT

A. Non-precision, non-shrink, non-stain, non-metallic grout in strict accordance with Manufacturer's recommendations.

1. ASTM C 1107
2. Color of cured grout shall match surrounding concrete color.

2.11 CONCRETE MIXTURES, GENERAL

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

1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.

B. Submit each proposed mix design to the Engineer at least 15 days prior to the start of Work. Do not begin concrete production until mixes have been reviewed by Engineer.

C. Cementitious Materials: Limit percent by weight of total cementitious material weight in mix design as follows:

1. Fly Ash: 20 percent.
2. Combined Fly Ash and Pozzolan: 20 percent.
3. Ground Granulated Blast-Furnace Slag: 50 percent.
4. Combined Fly Ash or Pozzolan and Ground Granulated Blast-Furnace Slag: 50 percent portland cement minimum, with fly ash or pozzolan not exceeding 20 percent.
5. Silica Fume: 10 percent.
6. Combined Fly Ash, Pozzolans, and Silica Fume: 35 percent with fly ash or pozzolans not exceeding 20 percent and silica fume not exceeding 10 percent.
7. Combined Fly Ash or Pozzolans, Ground Granulated Blast-Furnace Slag, and Silica Fume: 50 percent with fly ash or pozzolans not exceeding 20 percent and silica fume not exceeding 10 percent.
8. Weight of fly ash, silica fume, and GGBS additives shall be included with the weight of cement to determine water-cementitious material ratio.

D. Limit water-soluble, chloride-ion content in hardened concrete to the following percent by weight of cement.

1. Exterior Slabs on Grade: 0.15 percent
2. Unless noted otherwise: 1.00 percent

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

1. Use admixture in concrete, as required, for placement and workability.
2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
3. Use non-chloride accelerating admixture in concrete slabs placed at ambient temperatures below 50°F (10°C).

4. Use water-reducing admixture in pumped concrete, and concrete with a water-cementitious materials ratio below 0.50.
5. Use air-entraining admixture in exposed exterior concrete unless otherwise indicated. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having total air content of 6 percent plus or minus 1 percent.

2.12 CONCRETE MIXTURES FOR BUILDING ELEMENTS

A. Proportion normal-weight concrete mixtures as specified on Drawings.

B. Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant; at no additional cost to Owner and as accepted by Engineer. Laboratory test data for revised mix design and strength results must be submitted to and accepted by Engineer before using in work.

2.13 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.14 CONCRETE MIXING

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

1. All concrete trucks shall not have concrete build-up on drum or have worn fins. Engineer may require inspections to verify conformance to NRMCA Quality Control Manual, Section 3.

2. Time of discharge after batching shall not exceed 90 minutes or be after drum has revolved 300 revolutions, unless otherwise approved by Engineer.

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

4. Batch ticket information shall include:

a. Type of aggregate
b. Total water content
c. Water withheld (if any)
d. Air Entrainment
e. Slump
f. Fly ash (if used) content per cubic yard of concrete
g. Water-cementitious material ratio
h. Water reducing admixture

B. Slump adjustment

1. Concrete mix designs without any water reducing admixtures shall have a slump as shown on Drawings.
2. ASTM C 143. Contractor will provide slump guidelines adhering to strength and water/cementitious ratio requirements. Mix design shall provide slump for concrete prior to and after addition of superplasticizers.
3. Water is not to be added at site to meet specified slump, unless specifically indicated as being withheld on batch ticket and approved by Engineer.
4. High range water reducing admixtures (superplasticizers), if added at batch plant, may be redosed at job site. Manufacturers should provide a redosage chart for this purpose. If superplasticizers are added at batch plant, concrete delivery time, placement, and finishing procedures shall account for limited time affect. If superplasticizer is added at site after verification of initial slump, concrete shall be completely retested after proper mixing. All concrete containing superplasticizer shall have a maximum 9" slump unless otherwise approved by Engineer.

PART 3 - EXECUTION

3.1 FORMWORK

A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.

B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

C. Limit concrete surface irregularities, designated by ACI 347 as abrupt or gradual, as follows:

1. Class A, 1/8 inch for smooth-formed finished surfaces.
2. Class B, 1/4 inch for rough-formed finished surfaces.

D. Construct forms tight enough to prevent loss of concrete mortar.

E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.

1. Install keyways, reglets, recesses, and the like, for easy removal.
2. Do not use rust-stained steel form-facing material.

F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.

G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

H. Chamfer exterior corners and edges of permanently exposed concrete. Use 3/4" chamfer unless otherwise indicated.

I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.

J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.2 EMBEDDED ITEMS

A. Coordinate Work with other trades to allow reasonable time to set sleeves, inserts, and other accessories.

B. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC's "Code of Standard Practice for Steel Buildings and Bridges."

3.3 REMOVING AND REUSING FORMS

A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete. Concrete has to be hard enough to not be damaged by form-removal operations and curing and protection operations need to be maintained.

1. Leave formwork for beam soffits, joists, slabs, and other structural elements that supports weight of concrete in place until concrete has achieved at least 70 percent of its 28-day design compressive strength.
2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.

B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.

C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

3.4 VAPOR RETARDERS

A. Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder according to ASTM E 1643 and manufacturer's written instructions.

1. Lap joints 6 inches and seal with manufacturers recommended tape.
2. Seal around all pipe penetrations and any other tears, penetrations, or holes in the vapor retarder per the manufacturer's recommendations.
3. Terminate perimeter of vapor retarder at the perimeter foundation or grade wall. Turn vapor retarder up and seal to the concrete foundation or grade wall using a tape or termination bar. The method of termination shall be per the manufacturer's recommendations and shall be approved by the Architect.

3.5 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.

1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.

C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.

1. Weld reinforcing bars, only where specifically shown on Drawings, according to AWS D1.4.

D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

E. Install welded wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

3.6 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Engineer.

1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
2. Form keyed joints in construction joints in walls, slabs, and as indicated on Drawings. Embed keys at least 1-1/2 inches into concrete.

3. Locate joints for beams, slabs, joists, and girders in the middle third of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
4. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
5. Space vertical joints in walls as indicated or approved by Engineer. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.
6. Use a bonding agent or epoxy bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

C. Contraction (Control) Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness as follows:

1. Exterior Slabs: Tooled Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.
2. Interior Slabs: Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.
3. Install elastomeric sealants when temperature is in the lower third of temperature range recommended by manufacturer for installation.
4. Joint sealant manufacturers include:

    a. Dow Corning Corp. (Midland, Michigan)
    b. General Electric Co. (Waterford, N.Y.)
    c. Trenco, Inc. (Cleveland, Ohio)
    d. W.R. Meadows, Inc. (Elgin, Illinois)

D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.

1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface unless otherwise indicated.
2. Terminate full-width joint-filler strips not less than 1/2 inch or more than 1 inch below finished concrete surface where joint sealants are indicated.
3. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.

E. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.

3.7 WATERSTOPS

A. Self-Expanding Strip Waterstops: Install in construction joints and at other locations indicated, according to manufacturer's written instructions, adhesive bonding, mechanically fastening, and firmly pressing into place. Install in longest lengths practicable.

3.8 CONCRETE PLACEMENT

A. General: Comply with ACI 304 "Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete," and as herein specified.

B. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.

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

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

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

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

1. Place concrete in forms in horizontal layers not deeper than 24" and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints.
2. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
3. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
4. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

F. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.

1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
2. Maintain reinforcement in position on chairs during concrete placement.
3. Screed slab surfaces with a straightedge and strike off to correct elevations.
4. Slope surfaces uniformly to drains where required.
5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

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

1. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.
4. Record air temperature no less than twice per 24-hour period.
5. Cast expendable thermostats or thermo-couplers in concrete at a rate of at least one per 100 cubic yards of concrete placed for supported structure. Monitor internal temperature of concrete at twelve-hour maximum intervals throughout the curing process.
6. Specified non-corrosive accelerator may be used.
7. Do not place concrete unless air temperature is at least 20° F and rising.
8. Use evaporation retarder or water fog after finishing to assure that plastic shrinkage cracking of concrete surface does not occur.
9. Cure shall consist of visqueen and insulated blankets placed on slab as soon as possible after concrete will support them without deformation.
10. Do not wet cure concrete placed under cold weather conditions.
11. Curing of supported slabs (continuous presence of visqueen and blankets) shall be maintained no less than 10 days.
12. Measures will be required to ensure that the formwork and concrete do not freeze during the curing process.

H. Hot-Weather Placement: Comply with ACI 305 and as follows:

1. Maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.
3. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedment in concrete.
4. Protect flatwork during finishing operations as follows:

    a. Immediately following screeding, apply an evaporator retarding agent in accordance with recommendations of Manufacturer. Additional applications of evaporation retarding agent may be required.
    b. Continuously fog spray air above slab between finishing operations.
    c. Cover concrete with an approved moisture-retaining cover as soon as concrete will support it without deformation. Keep mats constantly wet for 7 days minimum. Leave mats in place for 3 additional days after discontinuing wetting process.

3.9 FINISHING FORMED SURFACES

A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

1. Apply to concrete surfaces not exposed to view.

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

1. Apply to concrete surfaces exposed to view, to receive a rubbed finish, to be covered with a coating or covering material applied directly to concrete.

C. Rubbed Finish: Apply the following to vertical surfaces of smooth-formed finished as-cast concrete where exposed to view:

1. Smooth-Rubbed Finish: Not later than one day after form removal, moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.

D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

3.10 FINISHING FLOORS AND SLABS

A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture.

1. Apply float finish to surfaces to receive trowel finish, and to be covered with fluid-applied or sheet waterproofing, built-up or membrane roofing, or sand-bed terrazzo.

C. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects.

1. Apply a trowel finish to surfaces exposed to view, and inside of new tanks.
2. Finish surfaces to the following tolerances, according to ASTM E 1155, for a randomly trafficked floor surface:

a. Specified overall values of flatness, F(F) 25; and of levelness, F(L) 20; with minimum local values of flatness, F(F) 17; and of levelness, F(L) 15.

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

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

3.11 MISCELLANEOUS CONCRETE ITEMS

A. Filling In: Fill in holes and openings left in concrete structures after work of other trades is in place unless otherwise indicated. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

C. Equipment Bases and Foundations:

1. Coordinate sizes and locations of concrete bases with actual equipment provided.
2. Minimum Compressive Strength: 4000 psi at 28 days.
3. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on 18-inch centers around the full perimeter of concrete base.
4. For supported equipment, install anchor bolts per supplier requirements.
5. Prior to pouring concrete, place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
6. Cast anchor-bolt insert into bases. Install anchor bolts to elevations required for proper attachment to supported equipment.

D. Grout base plates and foundations as indicated, using specified non-shrink grout. Use non-metallic grout for exposed conditions, unless otherwise indicated.

3.12 CONCRETE PROTECTING AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Curing shall maintain moisture content and temperature to insure strength gain and prevent undesirable cracking, dusting, scaling and crazing. Comply with ACI 306.1 for cold-weather protection and ACI 305 for hot-weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.

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

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

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:

a. Water.
b. Continuous water-fog spray.
c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.

2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

   a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
   b. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
   c. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies will not interfere with bonding of floor covering used on Project.

3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

   a. Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer unless manufacturer certifies curing compound will not interfere with bonding of floor covering used on Project.

4. Curing and Sealing Compound: Apply uniformly to exterior slabs and curbs in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.
5. Curing methods shall be compatible with slab finishes to be applied at a later date. Verify with floor finish and Architect prior to use.

3.13 JOINT FILLING

A. Prepare, clean, and install joint filler according to manufacturer's written instructions.

   1. Do not fill joints until construction traffic has permanently ceased.

B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.

C. Install joint filler full depth in saw-cut joints and at least 2 inches deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

3.14 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch defective areas when approved by Engineer/Architect. Remove and replace concrete that cannot be repaired and patched to Engineer's/Architect's approval.

B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.

C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.

1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension to solid concrete. Limit cut depth to 3/4 inch. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Engineer.

D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
2. After concrete has cured at least 14 days, correct high areas by grinding.
3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.
5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.

6. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
7. Repair random cracks and single holes 1 inch or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

E. Perform structural repairs of concrete, subject to Engineer's approval, using epoxy adhesive and patching mortar.

F. Repair materials and installation not specified above may be used, subject to Engineer's approval.

3.15 FIELD QUALITY CONTROL

A. Testing and Inspecting: Unless provided in other applicable portions of these specifications, engage a qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.

B. Inspections:

1. Steel reinforcement placement.
2. Verification of use of required design mixture.
3. Concrete placement, including conveying and depositing.
4. Curing procedures and maintenance of curing temperature.

C. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:

1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd, but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.

    a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

2. Slump: ASTM C 143; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
3. Air Content: ASTM C 231, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
4. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
5. Compression Test Specimens: ASTM C 31.

a. Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample.
b. Cast and field cure two sets of two standard cylinder specimens for each composite sample.

6. Compressive-Strength Tests: ASTM C 39; test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days.

   a. Test one set of two field-cured specimens at 7 days and one set of two specimens at 28 days.
   b. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.

7. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
8. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
9. Test results shall be reported in writing to Engineer, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
10. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Engineer but will not be used as sole basis for approval or rejection of concrete.
11. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Engineer. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42 or by other methods as directed by Engineer.
12. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
13. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

D. Measure floor and slab flatness and levelness according to ASTM E 1155 within 48 hours of finishing.

END OF SECTION 033000

SECTION 034500 0 PRECAST ARCHITECTURAL CONCRETE

1.1 SUMMARY

A. Section Includes:

1. Architectural precast concrete units.

1.2 DEFINITIONS

A. Design Reference Sample: Sample of approved architectural precast concrete color, finish and texture, preapproved by Architect.

1.3 SUBMITTALS

A. Shop Drawings showing layout, dimensions, and identification of precast units; details of inserts, connections, joints, and special reinforcement and lifting devices necessary for handling and erection.

B. Sample, full-size, of each type precast unit required, delivered to job site. Acceptable samples may be incorporated in construction. Architects review will be for color, texture, finish, and general condition only.

C. Submit samples approximately 12" x 12" x 2" to illustrate quality, texture, and color of other than as-cast surface finishes.

D. Manufacturer's Data: Submit manufacturer's specifications with installation instructions for proprietary materials including reinforcement and forming accessories, admixtures, joint materials, hardeners, curing materials, and other as requested by Architect.

E. Laboratory Reports: Submit laboratory test or evaluation reports for concrete materials and mix designs. PCI recommends review of preproduction sample panels. Revise number and size of sample panels in "Sample Panels" Paragraph below to suit Project.

F. Concrete testing services: Employ acceptable testing laboratory to perform materials evaluation, testing, and design of concrete mixes.

G. Certificates, signed by material producer and Contractor, may be submitted in lieu of material testing when acceptable to Architect.

H. Quality Control: Performing sampling and Testing during concrete placement, as follows:
1. Sampling: ASTM C172
2. Slump: ASTM C143, one test for each load at point of discharge.
3. Air Content: ASTM C31, one for each set of compressive strength specimens.
4. Compressive Strength: ASTM C39, one set for each 10 precast units, or less, cast in any one day. Two specimens tested at 7 days, 3 specimens tested at 28 days, and one retained for later testing if required.

5. When total quantity of a given class of concrete is less than 50 cu. Yds., strength tests may be waived by Architects if field experience indicates evidence of satisfactory strength.
6. Report test results in writing to Architects, Contractor, and precast unit manufacturer on same day tests are made.
7. Delivery, Storage, and Handling: Deliver precast units to project site in such quantities and at such times to assure continuity of installation. Store units to prevent cracking, warping, staining, or other damage. Lift and support precast units only at designated lifting or supporting points.

1.4 FORM MATERIALS

A. Provide form work of sufficient strength to withstand pressures due to concrete operations and, when prestressed, pretensioning and detensioning operationsl. Maintain form work to provide units of the size, shape, lines and dimensions indicated, with continuous, straight, smooth surfaces free of honeycomb or other deficiencies.

B. Provide formed openings in precast units for holes larger than 10" diameter or 10" square.

C. Reinforcing Materials:
1. Reinforcing bars: ASTM A 615, Grade 60
2. Low-Alloy Steel Reinforcing Bars: ASTM A 706
3. Galvanized Reinforcing Bars: ASTM A767, Class 2
4. Welded Wire Fabric: ASTM A 185
5. Steel Wire: ASTM A 82
6. Steel Inserts and Connections: ASTM A36, galvanized after fabrication where exposed to weather.

1.5 CONCRETE MATERIALS

A. Portland Cement: ASTM C 150, type as required

B. Aggregates: ASTM C33, except local aggregates of proven durability may be used when acceptable to Architect.

C. Water: potable

D. Air-Entraining Admixture: ASTM C260

E. Water-Reducing Admixture: ASTM C494, type as required

F. Mix Proportions and Design: Proportion mixes by either laboratory trial batch or field experience method.

G. Submit written report to Architect for each proposed concrete mix at least 15 days prior to start of work. Do not begin precast concrete production until mixes have been reviewed and are accdeptable to Architect.

H. Mix designs may be adjusted when material characteristics, job conditions, weather, test results, or other circumstances warrant. Do not use revised concrete mixes until submitted to and accepted by Architect.

I. Use air-entraining admixture in concrete.

J. Cure compression test cylinders using same procedures as used in manufacturing process for precast units.

K. Produce standard-weight concrete consisting of Portland cement, aggregates, admixtures, and water to produce the following properties:

1. Compressive strength not less than 5000 psi at 28 days. Total air content not less than 4 percent nor more than 6 percent.

L. Fabrication: Fabricate precast concrete units complying with PCI MNL-116 for structural units and MNL-117 for architectural finished exposed units, including dimensional tolerances.

M. Installation of Embedded Items: Set and build into precast units anchorage and connection devices, and other items required for other work that is attached to, or supported by, precast units.Retain "Welding certificates" Paragraph below if retaining "Welding Qualifications" Paragraph in "Quality Assurance" Article.

1.6 CONCRETE PLACEMENT

A. Comply with ACI 301

B. Place concrete in continuous operation to prevent formation of seams or plans of weakness in precast units, using internal and external vibration for consolidation.

C. Consolidate placed concrete using mechanical vibrating equipment with hand rodding and tamping, so that concrete is worked around reinforcement and other embedded items and into forms.

D. Protect concrete from physical damage or reduced strength due to weather extremes during mixing, placement, and curing.

E. Provide permanent markings in precast units to identify pick-up points and orientation in structure. Imprint date of casting on each unit where it will not show in finished structure.

F. Cure precast units by low-pressure stream, steam vapor, radiant heat and moisture, or other similar process.

G. Fabricate units to provide finishes on exposed surfaces to match acceptable control samples.

H. Erection: Do not erect precast units until concrete has attained its design ultimate compressive strength.

I. Place units plumb, level, and in alignment. Provide necessary bolts, clips, hangers, and other accessories required for installation of precast units, galvanized after fabrication.

J. Anchor units in final position by bolting, welding, and grouping, as indicated.

K. At bolted connections, use lock washers or other acceptable means to prevent loosening of nuts.

L. At welded connections, apply touch-up coat of primer on painted surfaces and galvanizing repair material on galvanized surfaces.

M. Performance Evaluation: In addition to Quality Control tests and evaluations, precast units may be rejected for any of the following:

1. Defects as listing in PCI MNL-116 and 117, as applicable.
2. Exposed-to-view surfaces with finish deficiencies.
3. Excessive dimensional variations.
4. Repair or replace unacceptable precast unit as directed by Architects

END OF SECTION 034500

SECTION 057000 - DECORATIVE METAL

1.1 SUMMARY

A. Section Includes:

1. Custom fabricated aluminum benches.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product, including finishing materials.

B. Shop Drawings: Show fabrication and installation details for decorative metal.

1. Indicate materials, finishes, fasteners, anchorages, and accessory items.

C. Samples: For each type of exposed finish.

PART 2 - PRODUCTS

2.1 DECORATIVE METAL FABRICATORS

A. Bo-Mar Custom Metal Fabrication
3838 S. Arlington Avenue
Indianapolis, IN 46203
(800) 221-6684

B. Approved equal.

2.2 ALUMINUM

A. Fabricate products from alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with strength and durability properties for each aluminum form required not less than that of alloy and temper designated below.

B. Bars and Shapes: ASTM B 221, Alloy 6063-T5/T52.

C. Plate and Sheet: ASTM B 209, Alloy 3003-H14

2.3 FASTENERS

A. Fastener Materials: Unless otherwise indicated, provide the following:

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1. Aluminum Items: Type 304 stainless-steel fasteners.

B. Provide tamper-resistant flat-head machine screws for exposed fasteners unless otherwise indicated.

C. Post-Installed Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC193.
1. Material for Exterior Locations and Where Stainless Steel Is Indicated: Alloy Group 1 (A1) stainless-steel bolts, ASTM F 593 and nuts, ASTM F 594.

2.4 MISCELLANEOUS MATERIALS

A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

2.5 FABRICATION, GENERAL

A. Form decorative metal to required shapes and sizes, true to line and level with true curves and accurate angles and surfaces. Finish exposed surfaces to smooth, sharp, well-defined lines and arris.

B. Mill joints to a tight, hairline fit. Cope or miter corner joints. Fabricate connections that will be exposed to weather in a manner to exclude water.

C. Comply with AWS for recommended practices in shop welding. Weld behind finished surfaces without distorting or discoloring exposed side. Clean exposed welded joints of flux, and dress exposed and contact surfaces.

1. Where welding cannot be concealed behind finished surfaces, finish joints to comply with NOMMA's "Voluntary Joint Finish Standards" for Type 1 Welds: no evidence of a welded joint.

2.6 CUSTOM FABRICATED ALUMINUM BENCHES

A. Fabricate custom BENCHES from aluminum tube stock of profile indicated, fabricated to shapes indicated. Form curves by bending to produce uniform curvature of radii indicated; maintain profile of member throughout entire bend without buckling,

2.7 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

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B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

2.8 ALUMINUM FINISHES

A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.

Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 1.5 mils. Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.

1. Color and Gloss: As selected by Architect from manufacturer's full range.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Provide anchorage devices and fasteners where needed to secure decorative metal to in-place construction.

B. Set products accurately in location, alignment, and elevation, measured from established lines and levels.

C. Fit exposed connections accurately together to form tight, hairline joints or, where indicated, uniform reveals and spaces for sealants and joint fillers.

D. Do not cut or abrade finishes that cannot be completely restored in the field. Return items with such finishes to the shop for required alterations, followed by complete refinishing, or provide new units as required.

E. Restore protective coverings that have been damaged during shipment or installation. Remove protective coverings only when there is no possibility of damage from other work.

F. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

1. Coat concealed surfaces of aluminum that will be in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.

END OF SECTION 057000

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SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Silicone joint sealants.
2. Urethane joint sealants.
3. Latex joint sealants.
4. Preformed joint sealants.

B. Application: The joint sealants included in this Section shall include, but are not limited to, the following application:

1. Exterior joints in the following vertical surfaces and horizontal non-traffic surfaces:

a. Construction joints in cast-in-place concrete.
b. Joints between different materials listed above.
c. Other Joints as indicated.

2. Exterior Joints in the following horizontal traffic surfaces:

a. Isolation and contraction joints in cast-in-place concrete slabs.
b. Joints between different materials listed above.
c. Other joints as indicated.

1.2 PERFORMANCE REQUIREMENTS

A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.

1.3 SUBMITTALS

A. Product Data: For each joint-sealant product indicated.

B. Samples: For each kind and color of joint sealant required.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized installer who is approved or licensed for installation of elastomeric sealants required for this Project.

B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.

1.5 PROJECT CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F (5 deg C).
2. When joint substrates are wet.
3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.6 WARRANTY

A. Special Installer's Warranty: Manufacturer's standard form in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

B. Special Manufacturer's Warranty: Manufacturer's standard form in which joint-sealant manufacturer agrees to furnish joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Twenty years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Additional Manufacturer: Explanation

1. Additional Manufacturer's approved to bid this project are listed herein. Being a pre-qualified manufacturer does not release the manufacturer from providing a similar product that meets the performance criteria as listed in the specification, It is the responsibility of the manufacturers to provide evidence of meeting with specification parameters.

B. VOC Content of Interior Sealants: Provide sealants and sealant primers for use inside the weatherproofing system that comply with the following limits for VOC content when calculated according to 40 CFR 59, Part 59, Subpart D (EPA Method 24):

1. Architectural Sealants: 250 g/L.
2. Sealant Primers for Nonporous Substrates: 250 g/L.
3. Sealant Primers for Porous Substrates: 775 g/L.

C. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.

1. Suitability for Immersion in Liquids. Where sealants are indicated for Use I for joints that will be continuously immersed in liquids, provide products that have undergone testing according to ASTM C 1247. Liquid used for testing sealants is deionized water, unless otherwise indicated.

2.2 ELASTOMERIC JOINT SEALANTS

A. Elastomeric Sealants: comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.

B. Basis-of-Design Product: Subject to compliance with requirements, provide the following products by Dow Corning or a comparable product by one of the following: (Silicone Products)

1. G.E. Advanced Materials - Silicones:
2. Sika Corporation; Construction Products Division.

C. Basis-of-Design Explanation: Any manufacturer, product, or system that a bidder or interested party requests be included in the specifications must be received and approved during the bidding process. Any manufacturer, product, or system that is not specified as the Basis-of-Design and/or is not approved during the bidding process via addendum shall not be acceptable. In other words, it shall not be represented in the bid proposal.

2.3 ELASTOMERIC JOINT SEALANTS APPLICATION

A. Application: Exterior building joints, all vertical walls and non-traffic horizontal joints. (Silicone)

1. Basis-of-Design Product: Subject to compliance with requirements, provide Dow Corning 795 or approved equal.
2. Neutral-curing Silicone Joint Sealant: ASTM C 920.
3. Type: Single component (S).
4. Grade: Nonsag (NS).
5. Class: 25.
6. Users Related to Exposure: T, NT, M, G, A, and O.

B. Application: Traffic bearing-concrete slab-sawed joint caulking. Perimeter and isolation joint caulking.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Sonneborne SL-1 or approved equal.
2. Type: One-part elastomeric self-leveling polyurethane.

2.4 PREFORMED JOINT SEALANTS

A. Preformed Foam Joint Sealant: Manufacturer's standard preformed, precompressed, open-cell foam sealant manufactured from urethane foam with minimum density of 10 lb/cu. ft. (160 kg/cu. m) and impregnated with a nondrying, water-repellent agent. Factory produce in precompressed sizes in roll or stick form to fit joint widths indicated; coated on one side with a pressure-sensitive adhesive and covered with protective wrapping.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    a. Dayton Superior Specialty Chemicals.
    b. EMSEAL Joint Systems, Ltd.
    c. Or approved equal.

2.5 JOINT SEALANT BACKING

A. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

B. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer.

2.6 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials.

C. Masking Tape: Non-staining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions.
    1. Remove laitance and form-release agents from concrete.
    2. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.2 INSTALLATION

A. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

B. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.
2. Do not stretch, twist, puncture, or tear sealant backings.
3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.

F. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

G. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION 07920 JOINT SEALANTS

SECTION 083100 – FLOOR ACCESS DOORS (BILCO TYPE J-AL)

PART 1 - GENERAL

1.1 SUMMARY

A. Work Included: Provide factory-fabricated floor access doors.

1.2 SUBMITTALS

A. Product Data: Submit manufacturer's product data.

B. Shop Drawings: Submit shop drawings including profiles, accessories, location, adjacent construction interface, and dimensions.

C. Warranty: Submit executed copy of manufacturer's standard warranty.

1.3 QUALITY ASSURANCE

A. Manufacturer: A minimum of 5 years experience manufacturing similar products.

B. Installer: A minimum of 2 years experience installing similar products.

C. Manufacturer's Quality System: Registered to ISO 9001 Quality Standards including in-house engineering for product design activities.

1.4 DELIVERY, STORAGE AND HANDLING

A. Deliver products in manufacturer's original packaging. Store materials in a dry, protected, well-vented area. Inspect product upon receipt and report damaged material immediately to delivering carrier and note such damage on the carrier's freight bill of lading.

1.5 WARRANTY

A. Manufacturer's Warranty: Provide manufacturer's standard warranty. Materials shall be free of defects in material and workmanship for a period of twenty five years from the date of purchase. Should a part fail to function in normal use within this period, manufacturer shall furnish a new part at no charge.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Basis-of-Design Manufacturer: Type J-AL Access Door by The BILCO Company, P.O. Box 1203, New Haven, CT 06505, 1-800-366-6530, Fax: 1-203-535-1582, Web: www.bilco.com.

2.2 ACCESS DOOR

A. Furnish and install where indicated on plans vault access door Type J-AL, size width 30" x length 30". Length denotes hinge sides. The floor access door shall be single leaf and pre-assembled from the manufacturer.

B. Performance characteristics:

1. Cover: Shall be reinforced to support a minimum live load of 300 psf (1464 kg/m^2) with a maximum deflection of 1/150th of the span.
2. Operation of the cover shall be smooth and easy with controlled operation throughout the entire arc of opening and closing.
3. Operation of the cover shall not be affected by temperature.
4. Entire door, including all hardware components, shall be highly corrosion resistant.

C. Cover: Shall be 1/4" (6mm) aluminum diamond pattern.

D. Frame: Channel frame shall be extruded aluminum with bend down anchor tabs around the perimeter.

E. Hinges: Shall be specifically designed for horizontal installation and shall be through bolted to covers with tamperproof Type 316 stainless steel lock bolts and shall be through bolted to the frame with Type 316 stainless steel bolts and locknuts.

F. Drain Coupling: Provide a 1-1/2" (38mm) drain coupling located in the right front corner of the channel frame.

G. Lifting mechanisms: Manufacturer shall provide the required number and size of compression spring operators enclosed in telescopic tubes to provide, smooth, easy, and controlled cover operation throughout the entire arc of opening and to act as a check in retarding downward motion of the covers when closing. The upper tube shall be the outer tube to prevent accumulation of moisture, grit, and debris inside the lower tube assembly. The lower tube shall interlock with a flanged support shoe fastened to a formed 1/4" (6mm) gusset support plate.

H. A removable exterior turn/lift handle with a spring loaded ball detent shall be provided to open the cover and the latch release shall be protected by a flush, gasketed, removable screw plug.

I. Hardware:

1. Hinges: Heavy forged Type 316 stainless steel hinges, each having a minimum 1/4" (6mm) diameter Type 316 stainless steel pin, shall be provided and shall pivot so the covers do not protrude into the channel frame.
2. Cover shall be equipped with a hold open arm which automatically locks each cover in the open position.
3. Cover shall be fitted with the required number and size of compression spring operators. Springs and spring tubes shall be Type 316 stainless steel.
4. A Type 316 stainless steel snap lock with fixed handle shall be mounted on the underside of one cover.
5. Hardware: Shall be Type 316 stainless steel throughout.

J. Finishes: Factory finish shall be mill finish aluminum with bituminous coating applied to the exterior of the frame.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and openings for compliance with requirements for installation tolerances and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install products in strict accordance with manufacturer's instructions and approved submittals. Locate units level, plumb, and in proper alignment with adjacent work.

1. Test units for proper function and adjust until proper operation is achieved.
2. Repair finishes damaged during installation.
3. Restore finishes so no evidence remains of corrective work.

3.3 ADJUSTING AND CLEANING

A. Clean exposed surfaces using methods acceptable to the manufacturer which will not damage finish.

END OF SECTION 083100

SECTION 311000 – SITE CLEARING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Protecting existing vegetation to remain.
2. Removing existing vegetation.
3. Clearing and grubbing.
4. Stripping and stockpiling topsoil.
5. Temporary erosion and sedimentation control measures.

1.2 DEFINITIONS

A. Subsoil: All soil beneath the topsoil layer of the soil profile and typified by the lack of organic matter and soil organisms.

B. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil; but in disturbed areas such as urban environments, the surface soil can be subsoil.

C. Topsoil: Natural or cultivated surface-soil layer containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 2 inches in diameter; and free of subsoil and weeds, roots, toxic materials, or other nonsoil materials.

D. Tree Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction and defined by the drip line of individual trees or the perimeter drip line of groups of trees, unless otherwise indicated.

E. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.3 MATERIAL OWNERSHIP

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

B. The Owner may retain any large boulders found during excavation. The Contractor shall request that the Owner inspect boulders to determine if they shall remain on-site. Contractor must dispose of any boulders not retained by the Owner off the Owner's property.

1.4 SUBMITTALS

A. Existing Conditions: Documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.

1. Use sufficiently detailed photographs or videotape.
2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.

B. Record Drawings: If applicable Identifying and accurately showing locations of capped utilities and other subsurface structural, electrical, and mechanical conditions.

C. Product Data: For each type of the following manufactured products required:

1. Erosion control materials.

1.5 QUALITY ASSURANCE

A. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1.6 PROJECT CONDITIONS

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

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

B. Salvable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises where directed by the Owner.

C. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.

D. Do not commence site clearing operations until temporary erosion and sedimentation control and tree protection measures are in place.

E. The following practices are prohibited within protection zones:

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

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

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

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. Satisfactory Soil Materials: Requirements for satisfactory soil materials are specified in Division 31 Section "Earth Moving."

1. Obtain approved borrow soil materials off-site when satisfactory soil materials are not available on-site. No borrow pits may be excavated on-site unless otherwise noted on plans.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect and maintain benchmarks and survey control points from disturbance during construction.

B. Locate and clearly flag trees and vegetation to remain or to be relocated.

C. Protect existing site improvements to remain from damage during construction.

1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

A. Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction and the Erosion Control Plans, Specifications, and Details found within the project plans.

B. Inspect, maintain, and repair erosion and sedimentation control measures during construction until permanent vegetation has been established.

C. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.3 TREE PROTECTION

A. Erect and maintain temporary fencing around tree protection zones before starting site clearing. Remove fence when construction is complete.

1. Maintain fenced area free of weeds and trash.

B. Where excavation for new construction is required within tree protection zones, hand clear and excavate to minimize damage to root systems. Use narrow-tine spading forks, comb soil to expose roots, and cleanly cut roots as close to excavation as possible.

1. Cover exposed roots with burlap and water regularly.
2. Temporarily support and protect roots from damage until they are permanently redirected and covered with soil.
3. Coat cut faces of roots more than 1-1/2 inches in diameter with an emulsified asphalt or other approved coating formulated for use on damaged plant tissues.
4. Backfill with soil as soon as possible.

C. Repair or replace trees and vegetation indicated to remain that are damaged by construction operations, in a manner approved by Architect.

1. Employ an arborist, licensed in jurisdiction where Project is located, to submit details of proposed repairs and to repair damage to trees and shrubs.
2. Replace trees that cannot be repaired and restored to full-growth status, as determined by Architect.

D. Protect all trees not indicated to be removed.

3.4 EXISTING UTILITIES

A. Locate, identify, disconnect, and seal or cap off utilities indicated to be removed or abandoned.

1. Arrange with utility companies to shut off indicated utilities.
2. Owner will arrange to shut off private utilities when requested by Contractor.

B. Interrupting Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Architect not less than two days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Architect's written permission.

C. Excavate for and remove underground utilities indicated to be removed.

3.5 CLEARING AND GRUBBING

A. Remove obstructions, trees, shrubs, grass, and other vegetation to permit installation of new construction.

1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated without prior approval from the Architect.
2. Cut minor roots and branches of trees indicated to remain in a clean and careful manner where such roots and branches obstruct installation of new construction.
3. Grind stumps and remove roots, obstructions, and debris extending to a depth of 18 inches below exposed subgrade.
4. Use only hand methods for grubbing within tree protection zone.
5. Chip removed tree branches and dispose of off-site.

B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.

1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches and compact each layer to a density equal to adjacent original ground.

3.6 TOPSOIL STRIPPING

A. Remove sod and grass before stripping topsoil.

B. Strip topsoil to whatever depths are encountered in a manner to prevent intermingling with underlying subsoil or other waste materials.

1. Remove subsoil and nonsoil materials from topsoil, including clay lumps, gravel, and other objects more than 2 inches in diameter; trash, debris, weeds, roots, and other waste materials.

2. Report consistent discrepancies between observed topsoil thickness and thicknesses noted in the geotechnical report immediately.

C. Stockpile topsoil away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust and erosion by water.

1. Stockpile shown on plans is shown for approvals only. Only temporary stockpiling will be allowed on the site. Obtain approval of temporary stockpile location from Owner and Engineer prior to construction. Permanent stockpiling may only occur within borrow pits, if borrow pits are shown on plans. No borrow pits will be permitted unless shown on plans.
2. Limit height of topsoil stockpiles to 72 inches. Maximum side slop is 4:1.
3. Do not stockpile topsoil within tree protection zones.
4. Dispose of surplus topsoil. Surplus topsoil is that which exceeds quantity indicated to be permanently stockpiled or reused.

3.7 SITE IMPROVEMENTS

A. Remove existing above- and below-grade improvements as indicated and as necessary to facilitate new construction.

B. Remove slabs, paving, curbs, gutters, and aggregate base as indicated. Or required.

1. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut along line of existing pavement to remain before removing adjacent existing pavement. Saw-cut faces vertically.
2. Paint cut ends of steel reinforcement in concrete to remain with two coats of antirust coating, following coating manufacturer's written instructions. Keep paint off surfaces that will remain exposed.

3.8 DISPOSAL

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

B. Separate recyclable materials produced during site clearing from other nonrecyclable materials. Store or stockpile without intermixing with other materials and transport them to recycling facilities. Do not interfere with other Project work. Retain subparagraph below where recycling programs exist and recycling facilities can accept materials such as concrete or asphalt paving.

END OF SECTION 311000

SECTION 312000 - EARTH MOVING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:
   1. Preparing subgrades for slabs-on-grade, walks, pavements, lawns and grasses, and exterior plants.
   2. Excavating and backfilling for buildings and structures.
   3. Drainage course for slabs-on-grade.
   4. Subbase course for concrete walks and pavements.
   5. Subbase and base course for asphalt paving.
   6. Subsurface drainage backfill for walls and trenches.
   7. Excavating and backfilling trenches for utilities and pits for buried utility structures.

1.2 DEFINITIONS

A. Backfill: Soil material or controlled low-strength material used to fill an excavation.
   1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
   2. Final Backfill: Backfill placed over initial backfill to fill a trench.

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

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

D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill. On-site borrow material may be available if requested prior to submission of bids.

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

F. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.
   1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Architect. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
   2. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Architect. Unauthorized excavation, as well as remedial work directed by Architect, shall be without additional compensation.

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

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

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

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

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

1.3 SUBMITTALS

A. Product Data: For the following:

1. Geotextile.
2. Detectable warning tapes.

B. Material Test Reports: For each on-site and borrow soil material proposed for fill and backfill as follows:

1. Classification according to ASTM D 2487.
2. Laboratory compaction curve according to ASTM D 1557.

C. Pre-excavation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by earth moving operations. Submit before earth moving begins.

1.4 QUALITY ASSURANCE

A. Geotechnical Testing Agency Qualifications: Qualified according to ASTM E 329 and ASTM D 3740 for testing indicated.

B. Pre-excavation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section 013100 "Project Management and Coordination."

1.5 PROJECT CONDITIONS

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

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

B. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted in writing by Architect and then only after arranging to provide temporary utility services according to requirements indicated.

1. Notify Architect not less than two days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Architect's written permission.

C. Utility Locator Service: Notify utility locator service for area where Project is located before beginning earth moving operations.

D. Do not commence earth moving operations until temporary erosion and sedimentation control measures are in place.

E. Do not commence earth moving operations until plant-protection measures are in place.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

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

B. Satisfactory Soils: Soil Classification Groups GW, GP, GM, SW, SP, and SM according to ASTM D 2487, or a combination of these groups; free of rock or gravel larger than 2 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.

C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487, or a combination of these groups.

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

D. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.

E. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 95 percent passing a 2-inch sieve and not more than 8 percent passing a No. 200 sieve.

F. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 2-inch sieve and not more than 12 percent passing a No. 200 sieve. On-site soil material complying with the gradation requirements stated above and approved by the geotechnical engineer/testing agency for fill shall be accepted as engineered fill for use on the project.

G. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; except with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve.

H. Drainage Course: As noted in the project geotechnical report or structural plans. If no requirements are given, material matching Engineered Fill or Sand descriptions.

I. Filter Material: Narrowly graded mixture of natural or crushed gravel, or crushed stone and natural sand; ASTM D 448; coarse-aggregate grading Size 67; with 100 percent passing a 1-inch sieve and 0 to 5 percent passing a No. 4 sieve.

J. Sand: ASTM C 33; fine aggregate, natural, or manufactured sand.

K. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

2.2 GEOTEXTILES

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

1. Survivability: Class 2; AASHTO M 288.
2. Grab Tensile Strength: 157 lbf; ASTM D 4632.
3. Sewn Seam Strength: 142 lbf; ASTM D 4632.
4. Tear Strength: 56 lbf; ASTM D 4533.
5. Puncture Strength: 56 lbf; ASTM D 4833.
6. Apparent Opening Size: No. 60 sieve, maximum; ASTM D 4751.
7. Permittivity: 0.2 per second, minimum; ASTM D 4491.
8. UV Stability: 50 percent after 500 hours' exposure; ASTM D 4355.

B. Separation Geotextile: Woven geotextile fabric, manufactured for separation applications, made from polyolefins or polyesters; with elongation less than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:

1. Survivability: Class 2; AASHTO M 288.
2. Grab Tensile Strength: 247 lbf; ASTM D 4632.
3. Sewn Seam Strength: 222 lbf; ASTM D 4632.
4. Tear Strength: 90 lbf; ASTM D 4533.
5. Puncture Strength: 90 lbf; ASTM D 4833.
6. Apparent Opening Size: No. 60 sieve, maximum; ASTM D 4751.
7. Permittivity: 0.02 per second, minimum; ASTM D 4491.
8. UV Stability: 50 percent after 500 hours' exposure; ASTM D 4355.

2.3 ACCESSORIES

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

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

PART 3 - EXECUTION

3.1 PREPARATION

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

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

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

D. Preparation of subgrade for earthwork operations including removal of vegetation, topsoil, debris, obstructions, and deleterious materials from ground surface is specified in Division 31 Section 311000 "Site Clearing."

3.2 DEWATERING

A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.

1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.
2. Install a dewatering system, specified in Division 31 Section "Dewatering," to keep subgrades dry and convey ground water away from excavations. Maintain until dewatering is no longer required.

3.3 EXPLOSIVES

A. Explosives: Do not use explosives.

3.4 EXCAVATION, GENERAL

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

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

3.5 EXCAVATION FOR STRUCTURES

A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.

1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
2. Excavation for Underground Tanks, Basins, and Mechanical or Electrical Utility Structures: Excavate to elevations and dimensions indicated within a tolerance of plus or minus 1 inch. Do not disturb bottom of excavations intended as bearing surfaces.

B. Excavations at Edges of Tree- and Plant-Protection Zones:

1. Excavate by hand to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.
2. Cut and protect roots according to requirements in Division 31.

3.6 EXCAVATION FOR WALKS AND PAVEMENTS

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

3.7 EXCAVATION FOR UTILITY TRENCHES

A. Excavate trenches to indicated gradients, lines, depths, and elevations. Beyond building perimeter, excavate trenches in accordance with information indicated on the utility plans.

B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit, unless otherwise indicated.

1. Clearance: A minimum of 12 inches each side of pipe or conduit.

C. Trench Bottoms: Excavate trenches a minimum of 4 inches deeper than bottom of pipe and conduit elevations to allow for bedding course. Hand-excavate deeper for bells of pipe.

D. Trenches in Tree- and Plant-Protection Zones:

1. Hand-excavate to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.
2. Do not cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities.

3.8 SUBGRADE INSPECTION

A. Notify Architect and geotechnical engineer when excavations have reached required subgrade.

B. If Architect or representative determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.

C. Proof-roll subgrade below the building slabs and pavements with a pneumatic-tired and loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.
   1. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph.
   2. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.

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

E. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Architect, without additional compensation.

3.9 UNAUTHORIZED EXCAVATION

A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by Architect.
   1. Fill unauthorized excavations under other construction, pipe, or conduit as directed by Architect.

3.10 STORAGE OF SOIL MATERIALS

A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
   1. Stockpile shown on plans is shown for approvals only. Only temporary stockpiling will be allowed on the site. Obtain approval of temporary stockpile location from Owner and Engineer prior to construction. Permanent stockpiling may only occur within borrow pits, if borrow pits are shown on plans. No borrow pits will be permitted unless shown on plans.
   2. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.11 BACKFILL

A. Place and compact backfill in excavations promptly, but not before completing the following:
   1. Construction below finish grade including, where applicable, subdrainage, dampproofing, waterproofing, and perimeter insulation.
   2. Surveying and documenting locations of underground utilities for Record Documents.
   3. Testing and inspecting underground utilities.
   4. Removing concrete formwork.
   5. Removing trash and debris.
   6. Removing temporary shoring and bracing, and sheeting.
   7. Installing permanent or temporary horizontal bracing on horizontally supported walls.

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

3.12 UTILITY TRENCH BACKFILL

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

B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.

C. Backfill trenches excavated under footings and within 18 inches of bottom of footings with satisfactory soil; fill with concrete to elevation of bottom of footings.

D. Provide 4-inch- thick, concrete-base slab support for piping or conduit less than 30 inches below surface of roadways. After installing and testing, completely encase piping or conduit in a minimum of 4 inches of concrete before backfilling or placing roadway subbase.

E. Backfill voids with satisfactory soil while removing shoring and bracing.

F. Place and compact initial backfill of subbase material, free of particles larger than 1 inch in any dimension, to a height of 12 inches over the utility pipe or conduit.

1. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of utility piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.

G. Place and compact final backfill of satisfactory soil to final subgrade elevation.

H. Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

3.13 SOIL FILL

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

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

1. Under grass and planted areas, use satisfactory soil material.
2. Under walks and pavements, use satisfactory soil material.
3. Under steps and ramps, use engineered fill.
4. Under building slabs, use engineered fill as approved by the geotechnical and structural engineer.
5. Under footings and foundations, use engineered fill as approved by the geotechnical and structural engineer.

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

3.14 SOIL MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.

1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
2. Remove and replace or scarify and air dry otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.15 COMPACTION OF SOIL BACKFILLS AND FILLS

A. Place backfill and fill soil materials in layers not more than 6" in loose depth for material compacted by heavy compaction equipment, and not more than 4" in loose depth for material compacted by hand-operated tampers.

B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.

C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 1557:

1. Under structures, building slabs, steps, and pavements, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent.
2. Under lawn or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 90 percent.
3. For utility trenches, compact each layer of initial and final backfill soil material at 90 percent.

3.16 GRADING

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

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

B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:

1. Lawn or Unpaved Areas: Plus or minus 1 inch.
2. Walks: Plus or minus 1 inch.
3. Pavements: Plus or minus 1/2 inch.

C. Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch when tested with a 10-foot straightedge.

3.17 SUBBASE AND BASE COURSES UNDER PAVEMENTS AND WALKS

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

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

1. Place base course material over subbase course under hot-mix asphalt pavement.
2. Shape subbase course and base course to required crown elevations and cross-slope grades.
3. Place subbase course and base course 6 inches or less in compacted thickness in a single layer.
4. Place subbase course and base course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
5. Compact subbase course and base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D 1557.

C. Pavement Shoulders: Place shoulders along edges of subbase course and base course to prevent lateral movement. Construct shoulders, at least 12 inches wide, of satisfactory soil materials and compact simultaneously with each subbase and base layer to not less than 95 percent of maximum dry unit weight according to ASTM D 1557.

3.18 DRAINAGE COURSE

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

B. On prepared subgrade, place and compact drainage course under cast-in-place concrete slabs-on-grade as follows:

1. Install subdrainage geotextile on prepared subgrade according to manufacturer's written instructions, overlapping sides and ends.
2. Place drainage course 6 inches or less in compacted thickness in a single layer.
3. Place drainage course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
4. Compact each layer of drainage course to required cross sections and thicknesses to not less than 95 percent of maximum dry unit weight according to ASTM D 698.

3.19 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a qualified special inspector to perform the following special inspections:

1. Determine prior to placement of fill that site has been prepared in compliance with requirements.
2. Determine that fill material and maximum lift thickness comply with requirements.
3. Determine, at the required frequency, that in-place density of compacted fill complies with requirements.

B. Testing Agency: Owner will engage a qualified geotechnical engineering testing agency to perform tests and inspections.

C. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earthwork only after test results for previously completed work comply with requirements.

D. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Architect.

E. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable. Tests will be performed at the following locations and frequencies:

1. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least 1 test for every 2000 sq. ft. or less of paved area or building slab, but in no case fewer than three tests.
2. Foundation Wall Backfill: At each compacted backfill layer, at least one test for every 100 feet or less of wall length, but no fewer than two tests.
3. Trench Backfill: At each compacted initial and final backfill layer, at least one test for each 150 feet or less of trench length, but no fewer than two tests.

F. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

3.20 PROTECTION

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

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

1. Scarify or remove and replace soil material to depth as directed by Architect; reshape and recompact.

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

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

3.21 DISPOSAL OF SURPLUS AND WASTE MATERIALS

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

END OF SECTION 312000 EARTH MOVING

SECTION 321313 - CONCRETE PAVING

PART 1 - GENERAL

1.1 SUMMARY

This Section includes exterior cement concrete pavement for the following:

1. Fountain Slab.
2. Walks.
3. Curbs.
4. Concrete pavement around new reservoir tanks.

1.2 DEFINITIONS

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

1.3 ACTION SUBMITTALS

A. Product Data: For each type of manufactured material and product indicated.

B. Design Mixtures: For each concrete pavement mixture. Include alternate mixture designs when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1.4 INFORMATIONAL SUBMITTALS

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

B. Field quality-control reports.

C. Minutes of preinstallation conference.

1.5 QUALITY ASSURANCE

A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities" (Quality Control Manual - Section 3, "Plant Certification Checklist").
2. Manufacturer registered with and approved by authorities having jurisdiction or the DOT of state in which Project is located.

B. ACI Publications: Comply with ACI 301 unless otherwise indicated.

1.6 PROJECT CONDITIONS

A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

PART 2 - PRODUCTS

2.1 CONCRETE GENERAL

A. ACI Publications: Comply with ACI 301 (ACI 301M) unless otherwise indicated.

2.2 FORMS

A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, and smooth exposed surfaces.

1. Use flexible or uniformly curved forms for curves with a radius of 100 feet or less. Do not use notched and bent forms.

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

2.3 STEEL REINFORCEMENT

A. Plain-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, fabricated from as-drawn steel wire into flat sheets.

B. Reinforcing Bars: ASTM A 615/A 615M, Grade 60; deformed.

C. Plain Steel Wire: ASTM A 82, as drawn.

D. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified, and as follows:

1. Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.
2. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.

2.4 CONCRETE MATERIALS

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

1. Portland Cement: ASTM C 150, Type I/II, gray.

B. Normal-Weight Aggregates: ASTM C 33, Class 4S coarse aggregate, uniformly graded. Provide aggregates from a single source with documented service record data of at least 10 years' satisfactory service in similar pavement applications and service conditions using similar aggregates and cementitious materials.

1. Maximum Coarse-Aggregate Size: 1 inch nominal.
2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

C. Water: ASTM C 94/C 94M.

D. Air-Entraining Admixture: ASTM C 260.

E. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.

1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
2. Retarding Admixture: ASTM C 494/C 494M, Type B.
3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

2.5 CURING MATERIALS

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

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

C. Water: Potable.

D. Evaporation Retarder: Waterborne, monomolecular film forming; manufactured for application to fresh concrete.

1. Available Products:
   a. Axim Concrete Technologies; Cimfilm.
   b. Burke by Edeco; BurkeFilm.
   c. ChemMasters; Spray-Film.
   d. Conspec Marketing & Manufacturing Co., Inc.; Aquafilm.
   e. Dayton Superior Corporation; Sure Film.
   f. Euclid Chemical Company (The); Eucobar.
   g. Kaufman Products, Inc.; Vapor Aid.
   h. Lambert Corporation; Lambco Skin.
   i. L&M Construction Chemicals, Inc.; E-Con.
   j. MBT Protection and Repair, ChemRex Inc.; Confilm.
   k. Meadows, W. R., Inc.; Sealtight Evapre.
   l. Metalcrete Industries; Waterhold.
   m. Nox-Crete Products Group, Kinsman Corporation; Monofilm.
   n. Sika Corporation, Inc.; SikaFilm.
   o. Symons Corporation; Finishing Aid.
   p. Vexcon Chemicals, Inc.; Certi-Vex EnvioAssist.

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

1. Available Products:

a. Anti-Hydro International, Inc.; AH Curing Compound #2 DR WB.
b. Burke by Edoko; Aqua Resin Cure.
c. ChemMasters; Safe-Cure Clear.
d. Conspec Marketing & Manufacturing Co., Inc.; W.B. Resin Cure.
e. Dayton Superior Corporation; Day Chem Rez Cure (J-11-W).
f. Euclid Chemical Company (The); Kurez DR VOX.
g. Kaufman Products, Inc.; Thinfilm 420.
h. Lambert Corporation; Aqua Kure-Clear.
i. L&M Construction Chemicals, Inc.; L&M Cure R.
j. Meadows, W. R., Inc.; 1100 Clear.
k. Nox-Crete Products Group, Kinsman Corporation; Resin Cure E.
l. Symons Corporation; Resi-Chem Clear.
m. Tamms Industries Inc.; Horncure WB 30.
n. Unitex; Hydro Cure 309.
o. Vexcon Chemicals, Inc.; Certi-Vex Enviocure 100.

2.6 RELATED MATERIALS

A. Joint Fillers: ASTM D 1751, asphalt-saturated cellulosic fiber in preformed strips.

2.7 DETECTABLE WARNING MATERIALS

A. As noted in plans.

2.8 WHEEL STOPS

A. Wheel Stops: Per detail in plans.

2.9 CONCRETE MIXTURES

A. Prepare design mixtures, proportioned according to ACI 301, for each type and strength of normal-weight concrete determined by either laboratory trial mixes or field experience.

1. Use a qualified independent testing agency for preparing and reporting proposed concrete mixture designs for the trial batch method.
2. When automatic machine placement is used, determine design mixtures and obtain laboratory test results that meet or exceed requirements.

B. Proportion mixtures to provide normal-weight concrete with the following properties:

1. Compressive Strength (28 Days): 4000 psi.
2. Maximum Water-Cementitious Materials Ratio at Point of Placement: 0.45.
3. Slump Limit: 4 inches, plus or minus 1 inch.

C. Add air-entraining admixture at manufacturer's prescribed rate to result in normal-weight concrete at point of placement having an air content as follows:

1. Air Content: 6 percent plus or minus 1.5 percent for 1-inch nominal maximum aggregate size.

D. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.

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

1. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

F. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement according to ACI 301 requirements for concrete exposed to deicing chemicals.

1. Fly Ash or Pozzolan: 25 percent.

2.10 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M and ASTM C 1116. Furnish batch certificates for each batch discharged and used in the Work.

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

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine exposed subgrades and subbase surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.

B. Proof-roll prepared subbase surface below concrete paving to identify soft pockets and areas of excess yielding.

1. Completely proof-roll subbase in one direction and repeat in perpendicular direction. Limit vehicle speed to 3 mph.
2. Proof-roll with a pneumatic-tired and loaded, 10-wheel, tandem-axle dump truck weighing not less than 15 tons.
3. Correct subbase with soft spots and areas of pumping or rutting exceeding depth of 1/2 inch according to requirements in Division 31 Section "Earth Moving."

C. Proceed with concrete pavement operations only after nonconforming conditions have been corrected and subgrade is ready to receive pavement.

3.2 PREPARATION

A. Remove loose material from compacted subbase surface immediately before placing concrete.

3.3 EDGE FORMS AND SCREED CONSTRUCTION

A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.

B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.4 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.

C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.

D. Install welded wire reinforcement in lengths as long as practicable. Lap adjoining pieces at least one full mesh, and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

E. Install fabricated bar mats in lengths as long as practicable. Handle units to keep them flat and free of distortions. Straighten bends, kinks, and other irregularities, or replace units as required before placement. Set mats for a minimum 2-inch overlap of adjacent mats.

3.5 JOINTS

A. General: Form construction, isolation, and contraction joints and tool edgings true to line with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline, unless otherwise indicated.

1. When joining existing pavement, place transverse joints to align with previously placed joints, unless otherwise indicated.

B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.

1. Continue steel reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of pavement strips, unless otherwise indicated.
2. Provide tie bars at sides of pavement strips where indicated.
3. Butt Joints: Use epoxy bonding adhesive at joint locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
4. Keyed Joints: Provide preformed keyway-section forms or bulkhead forms with keys, unless otherwise indicated. Embed keys at least 1-1/2 inches into concrete.

5. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.

C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.

1. Locate expansion joints at intervals of 50 feet, unless otherwise indicated.
2. Extend joint fillers full width and depth of joint.
3. Terminate joint filler not less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.
4. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
5. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
6. Protect top edge of joint filler during concrete placement with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.

D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows:

1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with grooving tool to a 3/8-inch radius. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover marks on concrete surfaces.
2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.
3. Doweled Contraction Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.

E. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 3/8-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

3.6 CONCRETE PLACEMENT

A. Inspection: Before placing concrete, inspect and complete formwork installation, steel reinforcement, and items to be embedded or cast in. Notify other trades to permit installation of their work.

B. Remove snow, ice, or frost from subbase surface and reinforcement before placing concrete. Do not place concrete on frozen surfaces.

C. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.

D. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.

E. Do not add water to concrete during delivery or at Project site. Do not add water to fresh concrete after testing.

F. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.

G. Consolidate concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.

1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating reinforcement, dowels, and joint devices.

H. Place concrete in two operations; strike off initial pour for entire width of placement and to the required depth below finish surface. Lay welded wire fabric or fabricated bar mats immediately in final position. Place top layer of concrete, strike off, and screed.

1. Remove and replace concrete that has been placed for more than 15 minutes without being covered by top layer, or use bonding agent if approved by Architect.

I. Screed pavement surfaces with a straightedge and strike off.

J. Commence initial floating using bull floats or darbies to impart an open textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

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

1. When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F at point of placement.
2. Do not use frozen materials or materials containing ice or snow.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in design mixtures.

L. Hot-Weather Placement: Comply with ACI 301 and as follows when hot-weather conditions exist:

1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

3.7 FLOAT FINISHING

A. General: Do not add water to concrete surfaces during finishing operations.

B. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats, or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.

C. Select finishes from three subparagraphs below or revise to suit Project.

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

3.8 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

B. Comply with ACI 306.1 for cold-weather protection.

C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

E. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, curing compound, or a combination of these as follows:

1. Moist Curing: Keep surfaces continuously moist for not less than seven days with the following materials:

a. Water.
b. Continuous water-fog spray.
c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.

2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas that have been subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating, and repair damage during curing period.

3.9 PAVEMENT TOLERANCES

A. Comply with tolerances of ACI 117 and as follows:

1. Elevation: 1/4 inch.
2. Thickness: Plus 3/8 inch, minus 1/4 inch.
3. Surface: Gap below 10-foot- long, unleveled straightedge not to exceed 1/4 inch.
4. Alignment of Tie-Bar End Relative to Line Perpendicular to Paving Edge: 1/2 inch per 12 inches of tie bar.
5. Lateral Alignment and Spacing of Dowels: 1 inch.
6. Vertical Alignment of Dowels: 1/4 inch.
7. Alignment of Dowel-Bar End Relative to Line Perpendicular to Paving Edge: 1/4 inch per 12 inches of dowel.
8. Joint Spacing: 3 inches.
9. Contraction Joint Depth: Plus 1/4 inch, no minus.
10. Joint Width: Plus 1/8 inch, no minus.

3.10 REPAIRS AND PROTECTION

A. Excessively damage concrete or areas of defective installation, as determined by the Architect, must be repaired.

B. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Architect.

C. Drill test cores, where directed by Architect, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory paving areas with portland cement concrete bonded to pavement with epoxy adhesive.

D. Protect concrete from damage. Exclude traffic from pavement for at least 14 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.

E. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 321313

SECTION 329200 - TURF AND GRASSES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Seeding.
2. Lawn renovation.
3. Erosion-control material(s).

1.2 DEFINITIONS

A. Finish Grade: Elevation of finished surface of planting soil.

B. Manufactured Soil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.

C. Planting Soil: Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.

D. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or top surface of a fill or backfill before planting soil is placed.

E. Subsoil: All soil beneath the topsoil layer of the soil profile and typified by the lack of organic matter and soil organisms.

F. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil, but in disturbed areas such as urban environments, the surface soil can be subsoil.

G. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.

H. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. These include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.

1.3 ACTION SUBMITTALS

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

B. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture stating the botanical and common name, percentage by weight of each species and variety, and

percentage of purity, germination, and weed seed. Include the year of production and date of packaging.

C. Grass Design Mix. (Verification for grass design mix as specified).

D. Qualification Data: For qualified landscape Installer.

E. Product Certificates: For soil amendments and fertilizers, from manufacturer.

F. Material Test Reports: For existing native surface topsoil and imported or manufactured topsoil.

G. Planting Schedule: Indicating anticipated planting dates for each type of planting.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance Instructions: Recommended procedures to be established by Owner for maintenance of lawn during a calendar year. Submit before expiration of required initial maintenance periods.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful lawn establishment.

1. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when planting is in progress.
2. Maintenance Proximity: Not more than two hours' normal travel time from Installer's place of business to Project site.

B. Soil-Testing Laboratory Qualifications: An independent laboratory or university laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.

C. Topsoil Analysis: For each unamended soil type, furnish soil analysis and a written report by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; sodium absorption ratio; deleterious material; pH; and mineral and plant-nutrient content of the soil.

1. Testing methods and written recommendations shall comply with USDA's Handbook No. 60.
2. The soil-testing laboratory shall oversee soil sampling, with depth, location, and number of samples to be taken per instructions from Architect. A minimum of three representative samples shall be taken from varied locations for each soil to be used or amended for planting purposes.
3. Report suitability of tested soil for turf growth.
    a. Based on the test results, state recommendations for soil treatments and soil amendments to be incorporated. State recommendations in weight per 1000 sq. ft. for nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory planting soil suitable for healthy, viable plants.

b. Report presence of problem salts, minerals, or heavy metals, including aluminum, arsenic, barium, cadmium, chromium, cobalt, lead, lithium, and vanadium. If such problem materials are present, provide additional recommendations for corrective action.

D. Preinstallation Conference: Conduct conference at Project site.

1.6 DELIVERY, STORAGE, AND HANDLING

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

B. Bulk Materials:

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

1.7 PROJECT CONDITIONS

A. Seeding Restrictions: Seed during one of the following periods. Coordinate seeding periods with initial maintenance periods to provide required maintenance from date of seeding completion.

1. Spring Seeding for lawn areas: April 1st through June 1st or as specified by seed vendor.
2. Fall Seeding for lawn areas: September 1st through October 15th, or as specified by seed vendor.

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

1.8 MAINTENANCE SERVICE

A. Initial Lawn Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after each area is seeding and continue until acceptable lawn is established, but for not less than the following periods:

1. Seeded Lawns: through end of warranty period.

PART 2 - PRODUCTS

2.1 SEED

A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances.

B. Seed Species: State-certified seed of grass species as follows:

C. Lawn Area Seed Mix: Seed of grass species as follows, with not less than 95 percent germination, not less than 85 percent pure seed, and not more than 0.5 percent weed seed:

1. Proscape 80/20 Bluegrass and Perennial Ryegrass Mix. (or approved equal)
   a. -30% Zinfadel Kentucky Bluegrass
   b. -30% Bordeaux Kentucky Bluegrass
   c. -20% Shiraz Kentucky Bluegrass
   d. -20% Exacta II GLSR Perennial Ryegrass
   e. -Available from LebanonTurf: 1-800-233-0628
   f. -Apply at a rate of 4-5 pounds per 1000 square feet.

2.2 TOPSOIL

A. Topsoil: ASTM D 5268, pH range of 5.5 to 7, a minimum of 6 percent organic material content; free of stones 1 inch or larger in any dimension and other extraneous materials harmful to plant growth.

1. Topsoil Source: Reuse surface soil stockpiled on-site. Verify suitability of stockpiled surface soil to produce topsoil. Clean surface soil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth.
   a. Supplement with imported or manufactured topsoil from off-site sources when quantities are insufficient. Obtain topsoil displaced from naturally well-drained construction or mining sites where topsoil occurs at least 6 inches deep; do not obtain from agricultural land, bogs or marshes.

2.3 PLANTING ACCESSORIES

A. Selective Herbicides: EPA registered and approved, of type recommended by manufacturer for application.

2.4 FERTILIZER

A. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

2.5 MULCHES

A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free straw of wheat, rye, oats, or barley.

B. Fiber Mulch: Biodegradable, dyed-wood, cellulose-fiber mulch; nontoxic and free of plant-growth or germination inhibitors; with a maximum moisture content of 15 percent and a pH range of 4.5 to 6.5.

2.6 EROSION-CONTROL MATERIALS

A. Erosion-Control Blankets: Biodegradable wood excelsior, straw, or coconut-fiber mat enclosed in a biodegradable jute mesh. Include manufacturer's recommended steel wire staples, 6 inches long.

2.7 PESTICIDES

A. General: Pesticide, registered and approved by EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to be planted for compliance with requirements and other conditions affecting performance.

1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
2. Do not mix or place soils and soil amendments in frozen, wet, or muddy conditions.
3. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
4. Uniformly moisten excessively dry soil that is not workable and which is too dusty.

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

C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Landscape Architect and replace with new planting soil.

3.2 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations.

1. Protect adjacent and adjoining areas from hydroseeding and hydromulching overspray.
2. Protect grade stakes set by others until directed to remove them.

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

3.3 LAWN PREPARATION

A. Limit lawn subgrade preparation to areas to be seeded.

B. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 6 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.

1. Apply fertilizer directly to subgrade before loosening.
2. Thoroughly blend planting soil mix off-site before spreading or spread topsoil, apply soil amendments and fertilizer on surface, and thoroughly blend planting soil mix.
    a. Delay mixing fertilizer with planting soil if seeding will not proceed within a few days.
    b. Mix lime with dry soil before mixing fertilizer.
3. Spread planting soil mix to a depth of 6 inches but not less than required to meet finish grades after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.
    a. Spread approximately 1/2 the thickness of planting soil mix over loosened subgrade. Mix thoroughly into top 2 inches of subgrade. Spread remainder of planting soil mix.

C. Unchanged Subgrades: If lawns are to be planted in areas unaltered or undisturbed by excavating, grading, or surface-soil stripping operations, prepare surface soil as follows:

1. Remove existing grass, vegetation, and turf. Do not mix into surface soil.
2. Loosen surface soil to a depth of at least 8 inches. Apply soil amendments and fertilizers according to planting soil mix proportions and mix thoroughly into top 4 inches of soil. Till soil to a homogeneous mixture of fine texture.
    a. Apply fertilizer directly to surface soil before loosening.
3. Remove stones larger than 1 inch in any dimension and sticks, roots, trash, and other extraneous matter.
4. Legally dispose of waste material, including grass, vegetation, and turf, off Owner's property.

D. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted in the immediate future.

E. Moisten prepared lawn areas before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

F. Before planting, obtain Landscape Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.4 PREPARATION FOR EROSION-CONTROL MATERIALS

A. Prepare area as specified in "Lawn Preparation" Article.

B. For erosion-control blanket or mesh, install from top of slope, working downward, and as recommended by material manufacturer for site conditions. Fasten as recommended by material manufacturer.

C. Moisten prepared area before planting if surface is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

3.5 SEEDING (CONTRACTOR'S OPTION)

A. Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.

1. Do not use wet seed or seed that is moldy or otherwise damaged.

B. Sow seed at rates specified in Part 2.

C. Rake seed lightly into top 1/8 inch of soil, roll lightly, and water with fine spray.

D. Protect seeded areas with slopes exceeding 1:4 with erosion-control blankets installed and stapled according to manufacturer's written instructions.

E. Protect seeded areas with slopes not exceeding 1:4 by spreading straw mulch. Spread uniformly at a minimum rate of 2 tons/acre to form a continuous blanket 1-1/2 inches in loose depth over seeded areas. Spread by hand, blower, or other suitable equipment.

1. Anchor straw mulch by crimping into soil with suitable mechanical equipment.

3.6 LAWN RENOVATION

A. Renovate existing lawn.

B. Renovate existing lawn damaged by Contractor's operations, such as storage of materials or equipment and movement of vehicles.

1. Reestablish lawn where settlement or washouts occur or where minor regrading is required.
2. Provide new topsoil as required.

C. Remove sod and vegetation from diseased or unsatisfactory lawn areas; do not bury in soil.

D. Remove topsoil containing foreign materials such as oil drippings, fuel spills, stones, gravel, and other construction materials resulting from Contractor's operations, and replace with new topsoil.

E. Mow, dethatch, and rake existing lawn.

F. Remove weeds before seeding. Where weeds are extensive, apply selective herbicides as required.

G. Remove waste and foreign materials, including weeds, soil cores, grass, vegetation, and turf, and legally dispose of them off Owner's property.

H. Till stripped, bare, and compacted areas thoroughly to a soil depth of 6 inches.

I. Apply soil amendments and initial fertilizers required for establishing new turf and mix thoroughly into top 4 inches of existing soil. Install new planting soil to fill low spots and meet finish grades.

J. Apply seed and protect with straw mulch as required for new lawns.

K. Water newly planted areas and keep moist until new lawn is established.

3.7 LAWN MAINTENANCE

A. Maintain and establish lawn by watering, fertilizing, weeding, mowing, trimming, reseeding, and performing other operations as required to establish healthy, viable lawn. Roll, regrade, and reseed bare or eroded areas and remulch to produce a uniformly smooth lawn. Provide materials and installation the same as those used in the original installation.

1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
2. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement.
3. Apply treatments as required to keep turf and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.

B. Watering: For non-irrigated lawn areas, provide and maintain temporary piping, hoses, and lawn-watering equipment to convey water from sources and to keep lawn uniformly moist to a depth of 4 inches.

1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
2. Water lawn with fine spray at a minimum rate of 1 inch per week unless rainfall precipitation is adequate.

C. Mow lawn as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than 1/3 of grass height. Remove no more than 1/3 of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain the following grass height:

1. Mow lawns to a height of 2 to 2-1/2 inches.

D. Lawn Postfertilization: Apply fertilizer after initial mowing and when grass is dry.

1. Use fertilizer that will provide actual nitrogen of at least 1 lb/1000 sq. ft. to lawn area.
2. Apply 4-6 weeks after germination and again 8-10 weeks after germination.

3.8 SATISFACTORY LAWNS

A. Lawn installations shall meet the following criteria as determined by Landscape Architect:

1. Satisfactory Seeded Lawn: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. and bare spots not exceeding 3 by 3 inches.

B. Use specified materials to reestablish lawns that do not comply with requirements and continue maintenance until lawns are satisfactory.

3.9 CLEANUP AND PROTECTION

A. Promptly remove soil and debris, created by lawn work, from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

B. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after lawn is established.

C. Remove nondegradable erosion-control measures after grass establishment period.

END OF SECTION 329200

SECTION 331116 – SITE WATER UTILITY DISTRIBUTION PIPING

PART 1 - GENERAL

1.1 All work shall follow the City of Fort Wayne Standards and approved Civil Plans and Drawings.

PART 2 - PRODUCTS

2.1 All products shall follow the City of Fort Wayne Standards and approved Civil Plans and Drawings.

PART 3 - EXECUTION

3.1 The execution of all work shall follow the City of Fort Wayne Standards and approved Civil Plans and Drawings.

END OF SECTION 331116

PART 1 - SECTION 334100 – STORM UTILITY DRAINAGE PIPING

PART 2 - GENERAL

2.1 All work shall follow the City of Fort Wayne Standards and approved Civil Plans and Drawings.

PART 3 - PRODUCTS

3.1 All products shall follow the City of Fort Wayne Standards and approved Civil Plans and Drawings.

PART 4 - EXECUTION

4.1 The execution of all work shall follow the City of Fort Wayne Standards and approved Civil Plans and Drawings.

END OF SECTION 334100

Project Number
2022018

HEADWATERS PARK FOUNTAIN IMPROVEMENT PROJECT

333 S. Clinton Fort Wayne IN 46802

FORT WAYNE PARKS AND RECREATION

CITY OF FORT WAYNE INDIANA KE-KI ON-GA

Tiii ENVIRONMENTS

GRINSFELDER ASSOCIATES ARCHITECTS

ARCHITECT

GRINSFELDER ASSOCIATES ARCHITECTS

FOUNTAIN DESIGN CONSULTANT

Tiii Environments, LLC
Indianapolis, IN

CONSTRUCTION DRAWING SHEET SCHEDULE:

T-1	TITLE SHEET
A-1	FOUNTAIN PLAN
A-2	FOUNTAIN DETAILS
A-3	PUMPHOUSE
A-4	RESERVOIR DETAILS
MEP-1	MECHANICAL, ELECTRICAL, PLUMBING
FC-0	COVER SHEET AND DRAWING INDEX
FN-1	GENERAL NOTES, DESIGN STATEMENT, AND EQUIPMENT LIST
FD-1	FOUNTAIN EQUIPMENT DETAILS
FM-1	FOUNTAIN SITE PLAN
FM-2	FOUNTAIN DIMENSION PLAN
FM-3	FOUNTAIN SUCTION, DRAIN, AND VENT PIPING PLAN
FM-4	FOUNTAIN DISCHARGE AND FILL PIPING PLAN
FM-5	FOUNTAIN EQUIPMENT SKID DETAIL SHEET
FE-1	FOUNTAIN ELECTRICAL PLAN
FE-2	FOUNTAIN ELECTRICAL SCHEMATIC

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CERTIFICATION

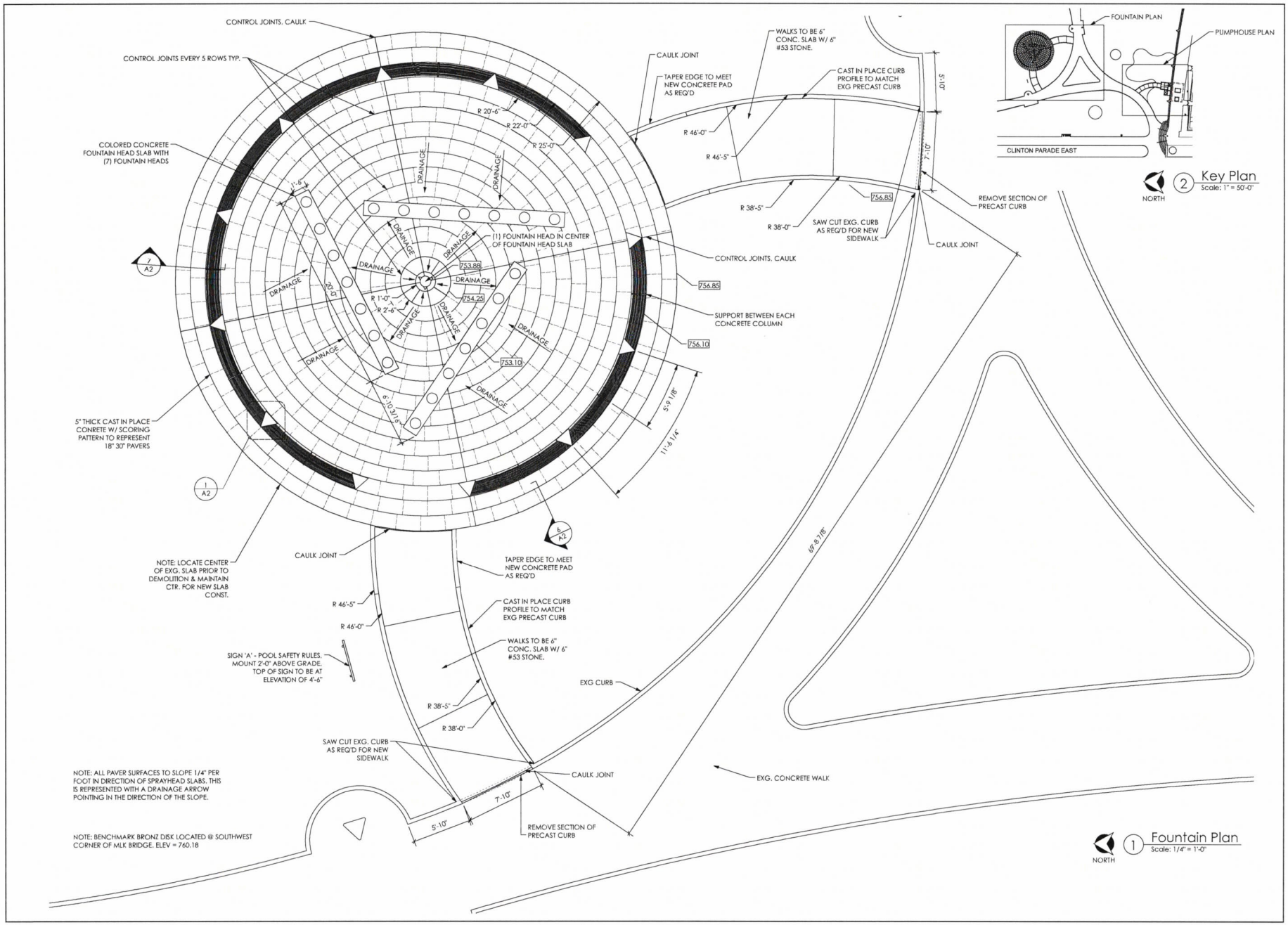
EDWARD JOHN WELLINGTON REGISTERED No. 860055 STATE OF INDIANA ARCHITECT

A New Fountain System For
HEADWATERS PARK FOUNTAIN IMPROVEMENT PROJECT
333 S Clinton St
Fort Wayne, Indiana 46802

DRAWN BY: TNT
DATE: 08/26/24
REVISIONS:

SHEET T1 OF 1

COMMISSION # 2237



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CERTIFICATION

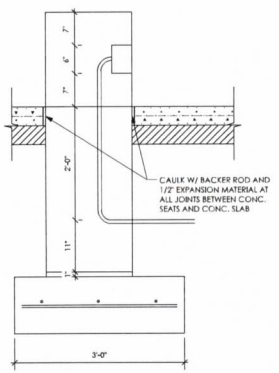
EDWARD JOHN WELLINGER REGISTERED No. 880055 STATE OF INDIANA ARCHITECT

A New Fountain System For
HEADWATERS PARK FOUNTAIN IMPROVEMENT PROJECT
333 S Clinton St
Fort Wayne, Indiana 46802

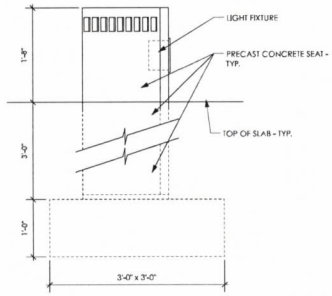
DRAWN BY: TNT
DATE: 08/26/24
REVISIONS:

SHEET A1 OF 4

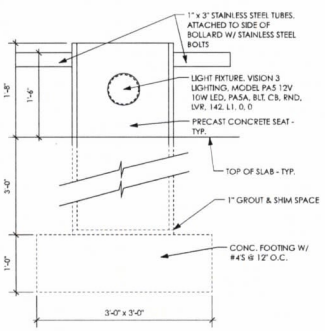
COMMISSION # 2237



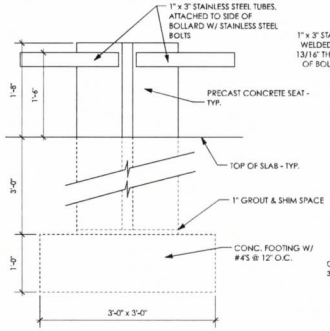
5 Seat Section
Scale: 1" = 1'-0"



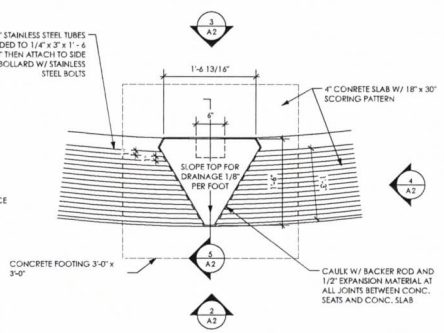
4 Seat Side Elevation
Scale: 1" = 1'-0"



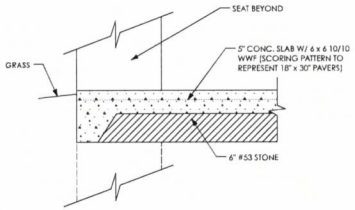
3 Seat Rear Elevation
Scale: 1" = 1'-0"



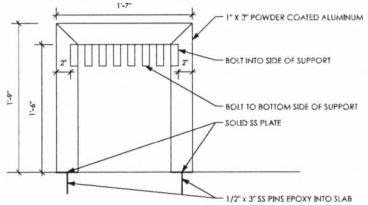
2 Seat Front Elevation
Scale: 1" = 1'-0"



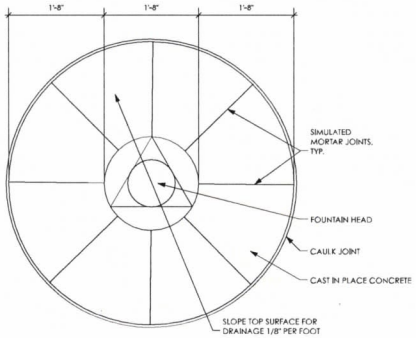
1 Perimeter Seat Plan
Scale: 1" = 1'-0"



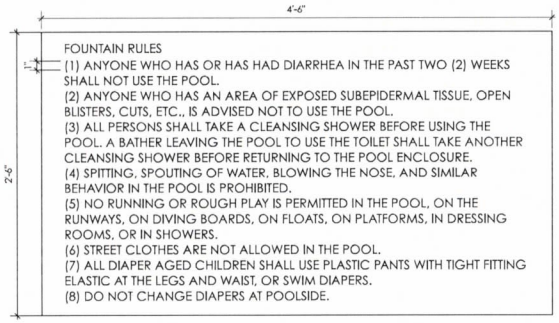
6 Paving Detail
Scale: 1" = 1'-0"



7 Seat Support Detail
Scale: 1 1/2" = 1'-0"



8 Center Fountain Detail
Scale: 1" = 1'-0"

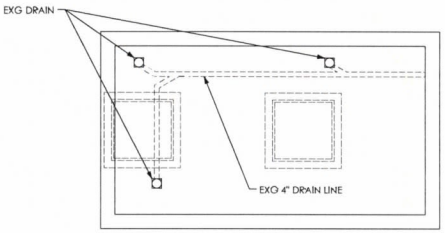


NOTE: PRINT ON SIGN TO BE NO LESS THAN 1" IN HEIGHT
SIGN TO BE MOUNTED 2' ABOVE GRADE WITH 2 x 2 STAINLESS STEEL TUBES
TOP OF SIGN TO BE 4'-6" ABOVE GRADE

9 Sign 'A'
Scale: 2" = 1'-0"

10 Sign 'B'
Scale: 2" = 1'-0"

NOTE: PRINT ON SIGN TO BE NO LESS THAN 4" IN HEIGHT
SIGN TO BE MOUNTED ON INNER FACE OF PUMPHOUSE HATCH



11 Existing Fountain Drain Plan
Scale: 1/4" = 1'-0"

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office@grinsfelderarchitects.com
www.grinsfelderarchitects.com

CERTIFICATION
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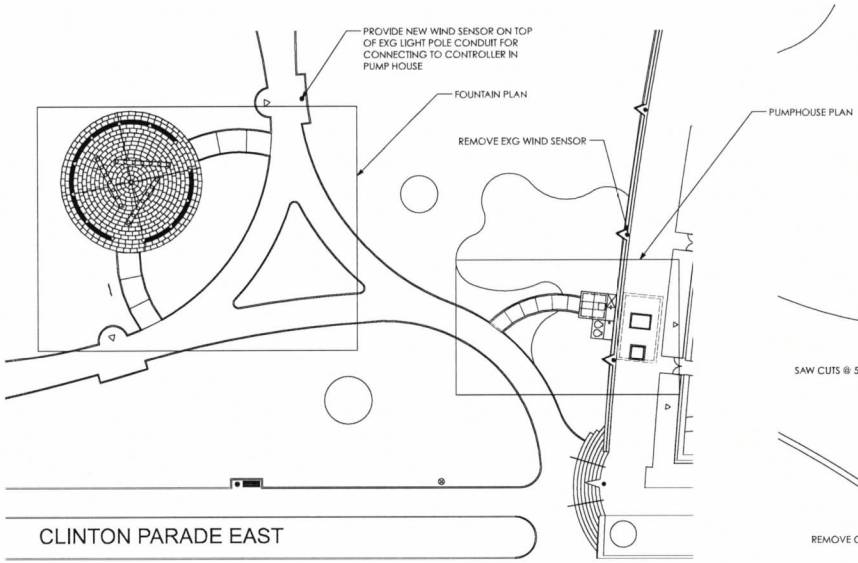
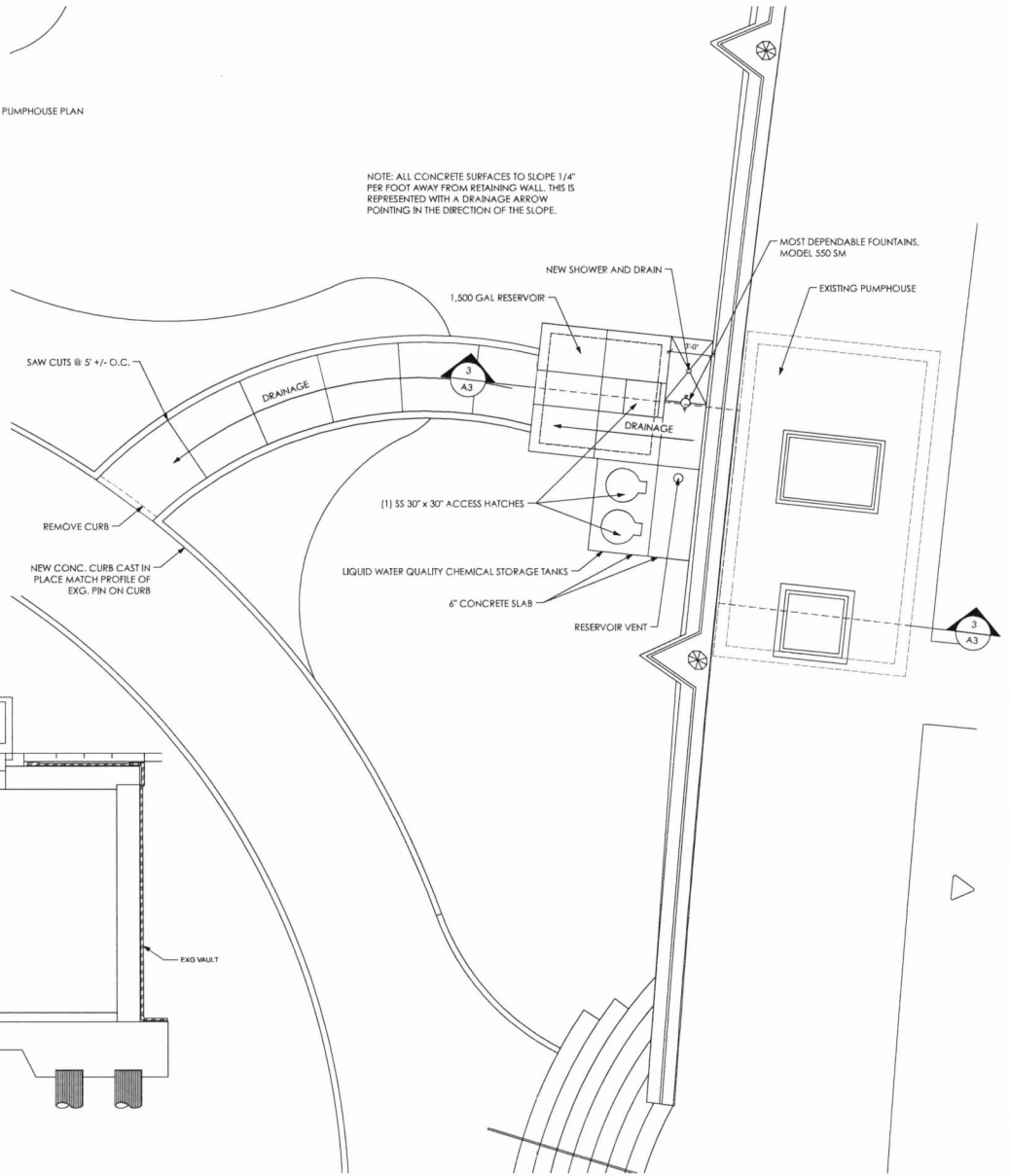
SHEET A2 OF 4

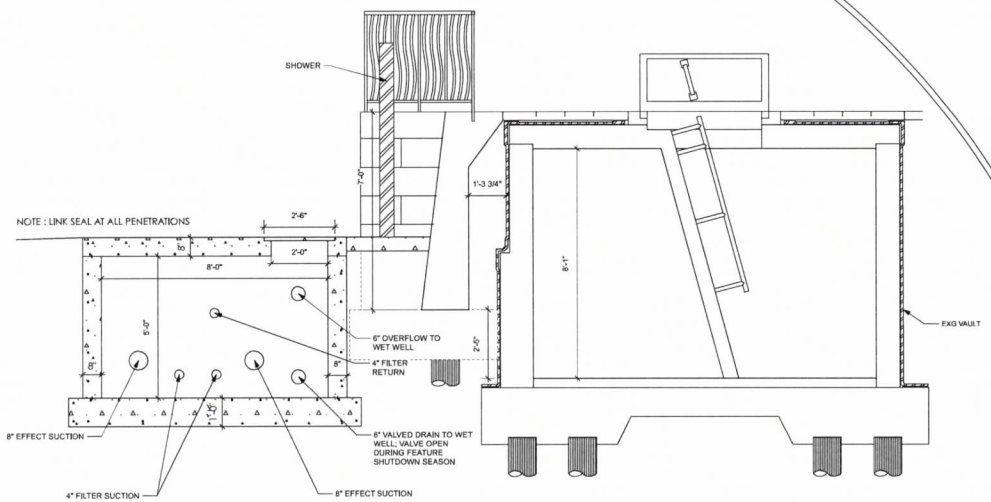
COMMISSION # 2237



NORTH

2 Key Plan
Scale: 1" = 20'-0"





NOTE : 4000 PSI CONCRETE WITH XYPEX OR PENETRON ADDITIVE, FULLY WELDED DUMBELL WATERSTOP AT BASE AND TOP JOINTS, REINFORCING #5 @ 12" OCEW

3 Building Section
Scale: 1/2" = 1'-0"

NORTH

1 Pumphouse Plan
Scale: 1/4" = 1'-0"

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SHEET A3 OF 4

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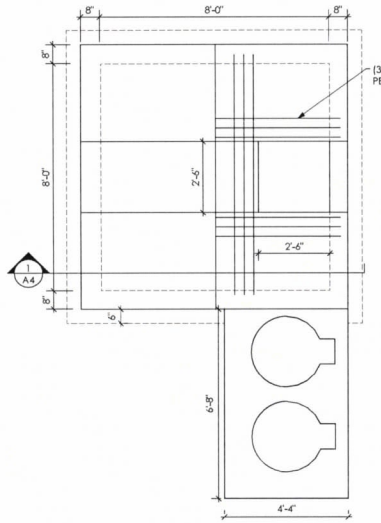
GENERAL NOTES:

1. CONTRACTORS ARE REQUIRED TO COORDINATE THEIR RESPECTIVE WORK WITH ALL OTHER DISCIPLINES TO AVOID ANY CONFLICTS DURING CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE STRUCTURAL DRAWINGS WITH ALL OTHER CONSTRUCTION DOCUMENTS.

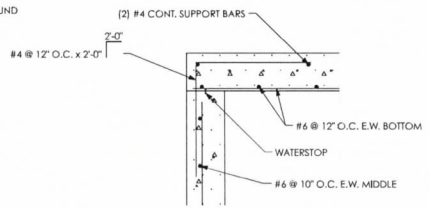
2. LOCATION, SIZES, AND QUANTITY OF ALL OPENINGS MAY NOT BE COMPLETELY INDICATED ON THE STRUCTURAL DRAWINGS. CONTRACTOR IS RESPONSIBLE TO COORDINATE ALL OPENINGS WITH ALL OTHER DISCIPLINES PRIOR TO ANY FABRICATION.

3. CONTRACTORS ARE REQUIRED TO VERIFY EXISTING CONDITIONS PRIOR TO ANY FABRICATION OR CONSTRUCTION. IF EXISTING CONDITIONS ARE DIFFERENT THAN SHOWN, NOTIFY A/E IMMEDIATELY FOR MODIFICATIONS TO THE DRAWINGS.

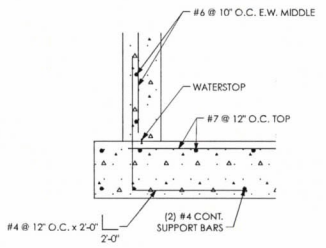
4. THE CONTRACT DOCUMENTS REPRESENT THE FINISHED STRUCTURE AND DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT LIMITED TO, BRACING, SHORING, UNDERPINNING, ETC. THE A/E IS NOT RESPONSIBLE FOR THE CONTRACTOR'S MEANS, METHODS, TECHNIQUES, SEQUENCES OR SAFETY PROCEDURES DURING CONSTRUCTION.



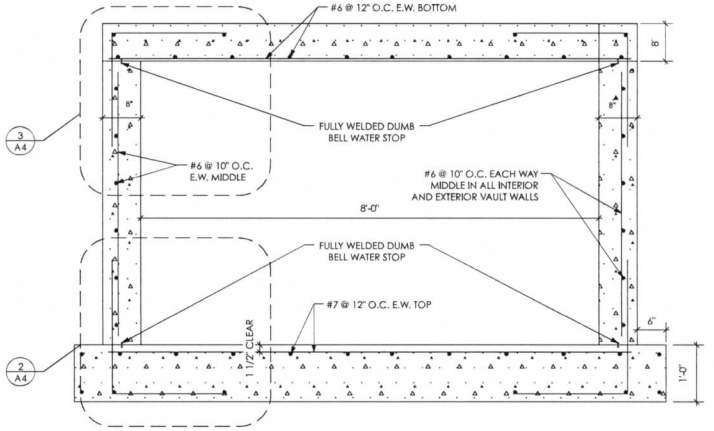
4 Typical Foundation Wall Penetration Detail
Scale: 1/2" = 1'-0"



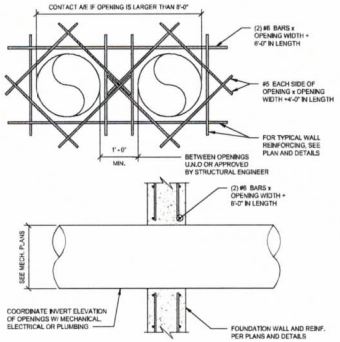
3 Section
Scale: 1" = 1'-0"



2 Section
Scale: 1" = 1'-0"



1 Reservoir Section
Scale: 1" = 1'-0"



5 Building Section
Scale: 1" = 1'-0"

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SHEET A4 OF 4

COMMISSION # 2237

HEADWATERS PARK SPLASHPAD

FORT WAYNE, INDIANA

USA

DRAWING SHEET INDEX

FP PROJECT REF - P24737

		AUG 13, 2024 - ISSUED FOR REVIEW	AUG 15, 2024 - ISSUED FOR REVIEW	AUG 26, 2024 - R2 ISSUED FOR REVIEW
GENERAL INFORMATION				
FC-0	COVER SHEET & DRAWING INDEX			
FN-1	GENERAL NOTES, DESIGN STATEMENT & EQUIPMENT LIST			
FOUNTAIN				
FD-1	FOUNTAIN EQUIPMENT DETAILS			
FM-1	FOUNTAIN SITE PLAN			
FM-2	FOUNTAIN DIMENSION PLAN			
FM-3	FOUNTAIN SUCTION, DRAIN & VENT PIPING PLAN			
FM-4	FOUNTAIN DISCHARGE & FILL PIPING PLAN			
FM-5	FOUNTAIN EQUIPMENT SKID DETAIL SHEET			
FE-1	FOUNTAIN ELECTRICAL PLAN			
FE-2	FOUNTAIN ELECTRICAL SCHEMATIC			

R2:
- CONVERTED VENT CAP FROM PVC TO CAST IRON
- RELOCATED VENT CAP.
- MODIFIED CHEMICAL STORAGE TANKS. REMOVED TOP HAT. NOTED IN CONCRETE SURROUND.
- RELOCATED CHEMICAL PUMPS TO EQUIPMENT ROOM.
- INDICATED 3/4" FLEXIBLE PVC PIPE FROM ROOM TO CHEMICAL TANKS FOR INJECTION HOSE.
- INDICATED WIRE SIZES ON CONDUITS WERE AVAILABLE. SHEET FE-1.
- ADDED CONDUIT FROM CONTROL PANEL TO REMOTE SOLENOID FOR ONSITE SHOWER.
- ADJUSTED DESIGN STATEMENT AND EQUIPMENT LIST.

fountain people™

A PLAYCORE Company

"APPROVAL TO PROCEED BY CLIENT"

In order for Fountain People to proceed with procurement and fabrication of equipment outlined in this drawing package, the "Client" must provide notice that the documents enclosed are "Approved" or "Approved as Noted".

This cover sheet may act as the approving "notice to proceed" and may be returned to Fountain People in a reduced/scanned image.

Expected equipment delivery dates cannot be confirmed until Fountain People receives the "Approved" drawing notice AND the equipment proposal has been confirmed and agreed upon by all parties.

SIGNATURE PRINT/TYPE NAME

COMPANY NAME

DATE

fountain people
A PLAYCORE Company
4800 HWY 123, SAN MARCOS, TX 78667 USA
TEL: (512) 392-1155 WWW.FOUNTAINPEOPLE.COM FAX: (512) 392-1154

HEADWATERS PARK SPLASHPAD
Fort Wayne, IN
For T III Environments, LLC
Indianapolis, IN

REV: 02	BY: WP	DATE: 08/26/24
DESCRIPTION:	CHKD:	DATE:

THIS DRAWING AND ALL INFORMATION ON IT IS THE PROPERTY OF FOUNTAIN PEOPLE INC. IT IS CONFIDENTIAL AND SHALL NOT BE LOANED FOR ANY PURPOSE AND MUST BE RETURNED ON REQUEST. NEITHER THIS DRAWING NOR ANY PART OF ANY INFORMATION CONTAINED IN OR ON IT SHALL BE REPRODUCED OR FURNISHED TO ANYONE NOT AUTHORIZED IN WRITING BY FOUNTAIN PEOPLE INC.

BY:	JD/WP	DATE: 08/12/24
CHECKED:	WP	DATE: 08/12/24
APPROVED:		DATE:
SCALE:	NONE	
FP PROJECT REF: P24737		CLIENT PROJECT REF:

DRAWING TITLE:

COVER SHEET

STATUS: PRELIMINARY - FOR CLIENT APPROVAL

DRAWING NUMBER: FC-0 REV:

Design Operation Statement &Specifications

The Headwaters Park feature is a "Dry Deck" Interactive Water Feature (aka Splashpad). The Feature will include (21) FIAC-500-SJ-Fountain in a Can™ Flushmount Jet / Light Assemblies with the Shower Jet Spray Effect and RGBW-DMX-RDM Light Fixture and Integral Drain. A single, centrally located FIAC-2000-SJ includes a hydrovalve to allow for "on-off" actuation of the nozzle. This flush mount effect also includes an RGBW-DMX-RDM ring light fixture. The Jets will have display heights up to 7'-0" in height and be controlled via VFD to raise and lower the spray heights, all at once, from 0' to 7'-0" in height. The center jet with the hydovalve can turn on and off independently. (NOTE: Jets capable of 7'-0" spray heights but should be limited to 6'-0" to maintain safety compliance). The RGBW-DMX-RDM Light fixtures will be programmable to be able to change from all on the same color to independent different colors. The FIAC-500 Jets will be placed in 3 straight lines, 7 Jets per line, with the FIAC-2000 as the single center jet, inside of a circle pad.

All Equipment: Filtration, UV System, Filter Pump Skid, Feature Pump Skid, Waterfill Station Manifold, Main Fountain / Programming Controls Cabinet, PH/ORP Chemical Controls, Water Level Controls, and Wind Control will all be placed in an existing underground concrete vault. Also included are Underground Chemical Tanks to be placed in underground concrete vaults (vaults by installer). The chemical feed pumps are located in the equipment room. The system will also be designed with an underground (8'-0" x 10'-0") concrete water reservoir (reservoir by installer). The reservoir will contain the Water Level Sensor.

An additional connection has been provided to the pump time clock operational settings. This connection is available to operate the onsite shower during the operating hours of the fountain. The shower and necessary water connection are supplied, by others.

Approximate calculations as field conditions may vary:

Reservoir Tank Area:	80 Sq Ft
Reservoir Tank Water Depth:	28 Inches (2'-4")
Approximate Tank Volume:	186.4 Cubic Feet, ~1,395 Gallons
Shutdown Gain	~13". ~650 Gallons
Static Tank Volume with the Overflow level Restricted at 3" above static:	2,200 Gallons total (Static Volume)
Display Requirements:	Qty (21) FIAC-500-SJ Nozzles at 7'-0" Spray Height 16 GPM @ 16 Feet of Head Qty (1) FIAC-1000-SJ Nozzles at 7'-0" Spray Height 16 GPM @ 16 Feet of Head
Display Requirement Total:	352 GPM @ 41 Feet of Head
Display Pump Capacity:	7-1/2-HP Speck pump, 400 GPM @ 50 Feet of Head
Filtration Requirement:	74 GPM @ 50 Feet of Head (30 Minute turnover rate)
Filtration Type:	TR140 Sand Filter, 106 GPM Max
UV Sterilizer:	Delta ELP28 HDPE, 79 GPM Max
Filter Pump Capacity:	1-1/2-HP Whisperflo, restricted to UV max at 79 GPM @ 60 Feet of Head
Actual Filtration Rate:	79 GPM
Rate of Filtration Turnover:	29 minutes

Headwaters Park Splashpad
Equipment List 1 of 2
Fountain People - 08/26/24

Item #	Qty	Component Number	Description
^01	21	FIAC-500-SJ	**FIAC-500 Series Fountain-in-a-Can; includes Type 304 stainless steel housing with integrated junction box, 1/4" thick S.S. slotted drain cover with central, interchangeable flush nozzle, brass j-bolt anchors and galvanized leveling anchor bolts. 2" FNPT bottom drain connection, 1-1/2" discharge connection and 1" conduit connection are provided. Internally, the housing includes; 24VDC (40W) RGBW-DMX-RDM led stainless steel light fixture, potting compound and required plumbing. Nozzle assembly is pre-attached to drain cover for ease of maintenance and removal. Assembly is press fit into bottom incoming seal fitting and additional cable is provided for assembly removal. A wood installation template included along with a 1" thick HDPE pour cover that can be used as winterization cover.**
^02	1	FIAC-2000-SJ	**Fountain-in-A-Can with Hydro-Valve and Shower Jet Nozzle, a "pour in place" flush mount spray effect with instant switching HydroValve, and 360-degree light fixture. The assembly includes a stainless-steel canister with 1/4" thick stainless-steel grate and contains (1) jet cluster interchangeable fountain nozzle, 360-degree 24V, 40-Watt, RGBW-DMX-RDM LED ring light with colored diodes, fast acting Hydro-Valve, manual adjustment valve, junction box, bonding lug, 1-1/2" inlet connection, 2" drain connection, and (2) 3/4" conduit connections for valve & light. Assembly is shipped with (3) anchor bolts, leveling nut & washers.**
^03	3	JBB-3-100	**Junction Box, flush mount, UL listed, underwater cast bronze junction box with internal grounding lug, neoprene gasket, 1" power connection, and three (3) 3/4"side connections for lights. Includes brass cord seals and plugs.**
^04	3	JBB-4-100	**Junction Box, flush mount, UL listed, underwater cast bronze junction box with internal grounding lug, neoprene gasket, 1" power connection, and four (4) 3/4"side connections for lights. Includes brass cord seals and plugs.**
05	12	PC-8882-9	**Potting compound for use in underwater junction boxes, 21 oz. package, meets NEC article 680 as an approved potting compound.**
06	1	PWA-P24737	Double wall 30-gallon acid storage tank with fittings 3" supply piping & 2" capped drain.
06a	2	FCMP-P24737	Single-Head Adjustable-Rate Chemical Metering Pump, for acid or base injection with adjustable mechanical feed rate of 0.2 to 3.0 gal/day. Unit features 26 rpm motor rated for 120 Volt, 1PH operation, 6 ft. long power cord with 3-prong plug. Accessories include: 20 ft. of 1/4" poly tubing (installer cut to length, as required) & tubing connector fittings. *(one for PWA and one for PWC)*
07	1	PWC-P24737	Double wall 30-gallon chlorine tank with fittings 3" supply piping & 2" capped drain.
08	1	WLS-CG-5	WLS-CG-Series, polypropylene head construction, with up to 5 probe electrical connections, electrodes are stainless steel, pipe thread 1 1/2", cable connection screw terminals. Includes (4) 3000mm probes for static, filling, low water and common.
09	1	YCA-300	Vent Cap Assembly, cast iron construction, 3" connection
10	1	AN-2D	Wind Speed Sensor, polycarbonate constructed 3-cup anemometer with UV inhibitors, beryllium copper shaft and Teflon bearings. Requires 18/3 cable by installer. *(PRODUCT CHANGE IN PROGRESS. NEW DESCRIPTION PENDING)*
11	1	WSM-2D	Wind Speed Monitor & Controller, housed in NEMA polycarbonate enclosure with transparent cover, LED wind speed display, two independent output relays, and 0-100 second time delay relays. *(PRODUCT CHANGE IN PROGRESS. NEW DESCRIPTION PENDING)*

Headwaters Park Splashpad
Equipment List 2 of 2
Fountain People - 08/26/24

Item #	Qty	Component Number	Description
12	1	DPS-750-P24737	Skid-Mount Display Pumping System, consisting of welded steel construction, measuring approximately 12" wide x 44" long. System includes a 7.5 HP WPP3 Series self-priming Display pump with integral strainer; suction and discharge manifold (Schedule 80 PVC) with gauges, valves and fittings as required per design intent. Unit is factory assembled and tested prior to shipment.
13	1	FPS-150-P24737	Skid-Mount Filter Pumping System, consisting of welded steel construction, measuring approximately 12" wide x 36" long. System includes a 1-1/2-HP WFP Series self-priming Filter pump with integral strainer; suction and discharge manifold (Schedule 80 PVC) with gauges, valves and fittings as required per design intent. Unit is factory assembled and tested prior to shipment.
14	1	FPS-P24737	Skid-Mount Sand Filter Equipment Pad, consisting of welded steel construction, measuring approximately 33" wide x 44". The system includes SF-Series high-rate sand filter with multi-port dial valve, pressure gauge, 2" check valve; Water Treatment Input/Output PVC Saddle Connections, Schedule 80 PVC piping and valves as required to meet the design intent. Unit is factory assembled and tested prior to shipment.
15	1	FPS-UV-P24737	Skid-Mount Ultraviolet Sterilizer Equipment Pad, consisting of welded steel construction, measuring approximately 12" wide x 40" long. System includes a ELP28 HDPE UV Sterilizer; discharge manifold (Schedule 80 PVC) with valves and fittings as required per design intent. Unit is factory assembled and tested prior to shipment.
16	1	CP-UV-P24737	Control Panel for Ultraviolet Sterilizer Unit, wall mounted. *included with UV unit*
17	1	CPL-P24737	**Fountain Control Panel, UL listed panel in NEMA 4 enclosure with required pump starter/motor protector, breakers, water level controls, lighting circuit & contactor, DE3 color wheel controller, HMI touchscreen, smart relay/PLC as required for communication with variable frequency drive controllers, and main disconnect switch. Panel is pre-assembled and tested under load before shipping.**
18	1	VFD-1090	**10HP Variable Frequency Drive Controller in NEMA 4X enclosure.**
19	1	FWTS-BECSYS5	**Dual-Point Automatic Water Treatment System, for automatic maintenance of pool water pH and sanitizer levels. The system consists of: Dual-Point Controller with digital read-out, acrylic Flow Cell, ORP and pH electrodes, rotary flow switch & sample port. System also includes 3/8" flex tubing and compression fittings, two (2) pre-wired 3-prong female connectors for controlled output to 120V metering pumps. Unit requires 120 Volt, Single Phase power.**
20	1	WFS-100	1" Brass and PVC Fill Station, with 3/4" pressure reducing valve, 120 VAC solenoid fill valve, manual bypass and isolation valves, union fittings, hose bibb, liquid-filled inlet pressure gauge and 1" (F) N.P.T. connections
21	1	JB2-1-075	Underwater Junction Box: conduit mounted, UL listed underwater junction box consisting of bronze housing lid, stainless steel fasteners, neoprene gasket, integral ground bar and external "direct burial" rated bonding lug. Includes (1) 3/4" (F)NPT bottom connection and (1) 3/4" (F)NPT side connection.
22	1	SP-033-AT	Sump pump assembly with piggyback float switch. Stainless steel motor casing and fasteners with adjustable float switch. 1/3 HP, 120 V, *for use in water storage tank*

*** ITEM REQUIRED FOR FOUNTAIN CONCRETE POUR.**

WATER FEATURE SPECIFICATION NOTES

THE INSTALLER SHALL BE RESPONSIBLE FOR PURCHASING WATER FEATURE COMPONENTS, AS WELL AS PROVIDING LABOR AND MATERIALS REQUIRED EFFECTING THE INSTALLATION OF THE OPERATIONAL SYSTEMS AS DETAILED IN THE PLANS AND SPECIFICATIONS.

THE PRIME WATER FEATURE INSTALLER SHALL FURNISH FOUNTAIN ELECTRICAL COMPONENTS TO THE ELECTRICAL INSTALLER FOR INSTALLATION AND CONNECTION.

A SINGLE MANUFACTURER SHALL SUPPLY ELECTRICAL AND MECHANICAL WATER FEATURE COMPONENTS IN ORDER TO ENSURE THE INTEGRITY OF THE WATER FEATURE DESIGN. THE WATER FEATURE EQUIPMENT SHALL BE AS DESIGNED AND MANUFACTURED BY FOUNTAIN PEOPLE, INC., P.O. BOX 807, 4600 HWY 123 EAST, SAN MARCOS, TX 78666 (512) 392-1155. SUBSTITUTION OF WATER FEATURE MATERIALS SHALL REQUIRE WRITTEN APPROVAL BY THE PROJECT ARCHITECT OR LANDSCAPE ARCHITECT.

INSTALLERS OFFERING SUBSTITUTIONS SHALL SUBMIT THREE COPIES OF THE FOLLOWING DATA AT LEAST TEN WORKING DAYS PRIOR TO THE BID DATE FOR REVIEW AND APPROVAL:

1. COMPLETE WATER FEATURE SYSTEM FLOW DIAGRAM.
2. COMPLETE WATER FEATURE ELECTRICAL CONTROL PANEL LADDER LOGIC DIAGRAMS.
3. A COMPLETE BILL OF MATERIALS ALONG WITH SPECIFICATION CUTS OF PROPOSED SUBSTITUTE ITEMS.
4. A WRITTEN DESCRIPTION OF THE WATER FEATURE'S OPERATIONAL CYCLE.
5. A WRITTEN PERFORMANCE GUARANTEE BY THE ALTERNATE SYSTEM MANUFACTURER CERTIFYING THAT THE ALTERNATE SYSTEM WILL MEET THE SPECIFIED DESIGN CONCEPT AND PERFORMANCE REQUIREMENTS. FAILURE TO SUBMIT FOR PRIOR APPROVAL OF SUBSTITUTIONS WILL BE GROUNDS FOR REJECTION. WITHIN TEN WORKING DAYS OF AWARD OF CONTRACT, INSTALLER SHALL SUBMIT FIVE COPIES OF MANUFACTURERS' DETAILED DATA SHEETS AND SUBMITTAL DRAWINGS OF WATER FEATURE COMPONENTS FOR APPROVAL PRIOR TO INSTALLATION. UPON COMPLETION OF THE PROJECT, INSTALLER SHALL PROVIDE THREE COPIES OF OWNER'S OPERATION AND MAINTENANCE MANUALS. MANUALS SHALL BE PROVIDED ON COMPACT DISCS WITH ALL PORTIONS IN A PRINTABLE FORMAT, AND SHALL INCLUDE OPERATING AND MAINTENANCE PROCEDURES ALONG WITH MANUFACTURERS' DATA SHEETS AND SYSTEM DRAWINGS.

GENERAL NOTES

THE WATER FEATURE MECHANICAL AND ELECTRICAL DRAWINGS ARE DIAGRAMMATIC, INTENDED TO INDICATE THE SCOPE OF THE WORK TO BE DONE. EQUIPMENT AND MATERIAL LOCATIONS MAY BE DISTORTED FOR CLARITY IN PRESENTATION.

QUESTIONS PERTAINING TO WORK THAT DOES NOT APPEAR TO BE SUFFICIENTLY DETAILED OR EXPLAINED, OR PERTAINING TO THE TRUE MEANING OF A PART OF THE DRAWINGS OR SPECIFICATIONS, OR DISCREPANCIES FOUND EXISTING IN OR BETWEEN THE SPECIFICATIONS AND DRAWINGS, SHALL BE REFERRED TO THE ARCHITECT OR LANDSCAPE ARCHITECT FOR CLARIFICATION.

ITEM NUMBERS CORRESPOND TO THE BILL OF MATERIALS AND SHALL BE FURNISHED BY THE EQUIPMENT MANUFACTURER. THE INSTALLER SHALL FURNISH OTHER MATERIALS, LABOR, TOOLS, EQUIPMENT, APPARATUS, AND SERVICES, WHICH ARE REQUIRED TO COMPLETE THE INSTALLATION OF THE WATER FEATURE SYSTEM.

MECHANICAL NOTES

1. THIS INSTALLATION SHALL COMPLY WITH LOCAL PLUMBING CODES.
2. PIPING LOCATED WITHIN A POOL BASIN, AND STUB-UPS THROUGH A POOL FLOOR OR WALLS OF A BASIN, SHALL BE OF BRASS PIPE, TYPE K COPPER TUBING OR STAINLESS STEEL.
3. INSTALLER SHALL SUPPLY WATERSTOP PROTECTION FOR PIPING PENETRATING POOL FLOOR OR WALLS AND FOR FITTINGS CAST THEREIN UNLESS OTHERWISE SPECIFIED WITHIN THESE DRAWINGS AND EQUIPMENT LISTS.
4. INTERCONNECTING PIPE AND FITTINGS BETWEEN THE POOL BASIN AND THE PUMP EQUIPMENT ROOM SHALL BE OF COPPER, MINIMUM SCHEDULE 40 PVC, STAINLESS STEEL OR FIBERGLASS.
5. PRESSURIZED CITY WATER LINES SUPPLYING THE WATER FEATURE SYSTEM SHALL BE OF COPPER AND SHALL BE PROTECTED BY A BACKFLOW PREVENTION DEVICE AND PRESSURE REDUCTION VALVE SET AT 50 PSI MAXIMUM.
6. PIPING RUNS SHALL BE MADE AS DIRECT AS POSSIBLE USING THE MINIMUM NUMBER OF FITTINGS. PIPE SHALL SLOPE TO THE PUMP FOR DRAINAGE AND SHALL BE FREE OF TRAPS OR LOOPS THAT COULD TRAP WATER OR AIR.
7. IF PIPING CANNOT BE SLOPED TO PUMP, MAKE PROVISIONS FOR COMPLETE DRAINING OF EACH PIPE WITH A MINIMUM 1 1/2" LINE AND VALVE AT THE LOWEST POINT.
8. PUMP SUCTION INTAKE AND SUCTION PIPING SHALL BE ROUTED TO AN ELEVATION BELOW THE WATER LEVEL OF THE LOWEST BASIN SO THAT BOTH THE PUMP AND THE SUCTION PIPING ARE COMPLETELY FLOODED WHEN THE WATER FEATURE SYSTEM IS FILLED UNLESS OTHERWISE SPECIFIED HEREIN.
9. PIPING SHALL BE PRESSURE TESTED PRIOR TO BACK-FILLING AND SHALL BE PROPERLY SUPPORTED.
10. INSTALLER SHALL PROVIDE DRAINAGE AND VENTILATION IN AN EQUIPMENT PUMP ROOM IN ORDER TO PREVENT FLOODING, CONDENSATION, OR OVERHEATING OF EQUIPMENT.

ELECTRICAL NOTES

1. UNDERWATER ELECTRICAL EQUIPMENT CAN CAUSE FATAL ELECTRICAL SHOCK IF NOT INSTALLED PROPERLY. THIS INSTALLATION HAS BEEN DESIGNED IN STRICT COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE, ARTICLE 680. INSTALLER SHALL INSTALL ELECTRICAL EQUIPMENT IN ACCORDANCE WITH NEC ARTICLE 680 AND LOCAL ELECTRICAL CODES.
2. A CLASS 'A' GROUND FAULT CIRCUIT INTERRUPTER (GFCI) SHALL BE INSTALLED ON CIRCUITS THAT HAVE AN OPERATING VOLTAGE GREATER THAN 15 VOLTS AND THAT SUPPLY WATER FEATURE EQUIPMENT LOCATED WITHIN BASINS. EQUIPMENT OPERATING AT LESS THAN 15 VOLTS SHALL BE PROTECTED BY A TRANSFORMER WHICH IS UL LISTED AND MARKED FOR THE APPLICATION.
3. UNLESS UL LISTED FOR EITHER WET OR DRY OPERATION, UNDERWATER LIGHT FIXTURES SHALL BE INSTALLED SO THAT THEY ARE SUBMERGED WHEN IN OPERATION, SHALL BE PROTECTED BY A LENS GUARD IF POINTED UPWARD, AND SHALL BE PROTECTED BY AN INTEGRAL THERMAL CUTOFF DEVICE TO PREVENT OVERHEATING.
4. UNDERWATER LIGHT FIXTURES SHALL BE INSTALLED WITH SUFFICIENT CORD LENGTH TO ALLOW REMOVAL FROM THE WATER FOR RELAMPING AND NORMAL MAINTENANCE WITHOUT LOWERING THE BASIN WATER LEVEL.
5. UNDERWATER JUNCTION BOXES SHALL BE EQUIPPED WITH THREADED CONDUIT ENTRIES AND STRAIN RELIEF SEALS FOR CORD ENTRY. STRAIN RELIEF SEALS SERVING NICHE MOUNTED FIXTURES SHALL MAKE PROVISION FOR BOTH THE FIXTURE CORD AND AN AWG # 8 COPPER BONDING WIRE WHEN REQUIRED BY LOCAL CODE.
6. UNDERWATER JUNCTION BOXES, OR JUNCTION BOXES MOUNTED OUTSIDE THE BASIN BUT BELOW THE WATER LEVEL, SHALL BE POTTED USING 3M "GELLA" 8882 RE-ENTERABLE POTTING COMPOUNDS. CONDUIT ENTRIES SHALL BE SEALED PRIOR TO POTTING THE JUNCTION BOX TO PREVENT POTTING COMPOUND FROM ENTERING THE CONDUIT SYSTEM.
7. STUB-UPS FOR CONDUIT MOUNTED UNDERWATER JUNCTION BOXES MUST BE OF RED BRASS PIPE OR STAINLESS STEEL. NON-METALLIC CONDUIT MAY NOT BE USED FOR SUPPORT OF JUNCTION BOXES.
8. WIRE PULLED BETWEEN WATER FEATURE ELECTRICAL CONTROLS PANELS AND UNDERWATER JUNCTION BOXES SHALL BE OF STRANDED COPPER, WATER-RESISTANT TYPE SELECTED AND SIZED FOR THE APPLICATION.
9. CONDUIT SHALL BE SEALED TO PREVENT ENTRY OF MOISTURE AND TO PREVENT WATER FROM DRAINING INTO THE WATER FEATURE ELECTRICAL CONTROL PANELS.

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HEADWATERS PARK SPLASHPAD

Fort Wayne, IN
For T III Environments, LLC
Indianapolis, IN

REV: 02	BY: WP	DATE: 08/26/24
DESCRIPTION:	CHKD:	DATE:

THE DRAWINGS AND ALL INFORMATION ON IT IS THE PROPERTY OF FOUNTAIN PEOPLE, INC. IT IS CONFIDENTIAL AND USED FOR ONE & LIMITED PURPOSE AND NOT TO BE REVISED OR REUSED. REUSE THE DRAWING AND ANY PART OF IT FOR ANY UNAUTHORIZED CONSTRUCTION IS PROHIBITED AND WILL BE PROSECUTED. NO PART OF ANY ARTICLE FURNISHED OR ASSIGNED THEN THE DRAWING WITHOUT THE CONSENT OF FOUNTAIN PEOPLE, INC.

BY:	JD/WP	DATE: 08/12/24
CHECKED:	WP	DATE: 08/12/24
APPROVED:		DATE:
SCALE:	NONE	
FP PROJECT REF:	P24737	CLIENT PROJECT REF:

DRAWING TITLE:

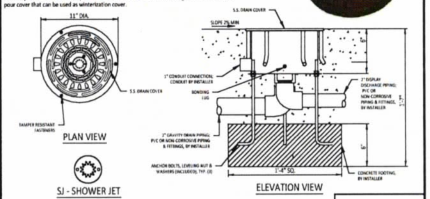
GENERAL NOTES, DESIGN STATEMENT & EQUIPMENT LIST

STATUS: PRELIMINARY - FOR CLIENT APPROVAL

DRAWING NUMBER: FN-1 REV:

FIAC-500-SJ SERIES FOUNTAIN-IN-A-CAN

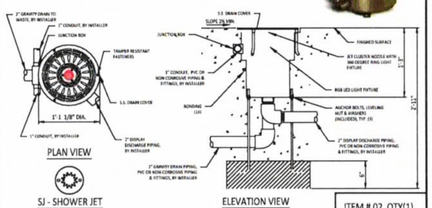
PRODUCT SPECIFICATION:
FIAC-500 Series Fountain-in-a-Can; includes Type 304 stainless steel housing with integrated junction box, 1/4" thick S.S. slotted drain cover with central, interchangeable flush nozzle, brass j-bolt anchors and galvanized leveling anchor bolts. 2" FNPT bottom drain connection, 1-1/2" discharge connection and 1" conduit connection are provided. Internally, the housing includes; 24VDC (40W) RGBW-DMX-RDM led stainless steel light fixture, potting compound and required plumbing. Nozzle assembly is pre-attached to drain cover for ease of maintenance and removal. Assembly is press fit into bottom incoming seal fitting and additional cable is provided for assembly removal. A wood template is included for initial installation along with a 1" thick HDPE pour cover that can be used as winterization cover.



ITEM # 01 QTY(21)

FIAC-2000-SJ SERIES FOUNTAIN-IN-A-CAN

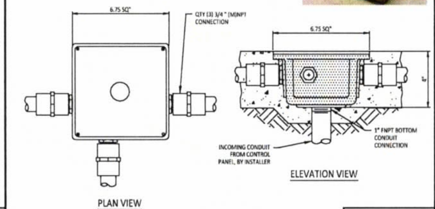
PRODUCT SPECIFICATION:
Fountain-In-A-Can with Hydro-Valve, a "pour in place" flush mount spray effect with instant switching Hydro-Valve, and 360 degree light fixture. The assembly includes a stainless steel canister with ¼" thick stainless steel grate and contains (1) shower jet interchangeable fountain nozzle, 360-degree 24V, 40 Watt, LED ring light with colored RGBW-DMX-RDM diodes, fast acting Hydro-Valve, manual adjustment valve, junction box, bonding lug, 1-1/2" inlet connection, 2" drain connection, and (2) 3/4" conduit connections for valve & light. Assembly is shipped with (3) anchor bolts, leveling nut & washers.



ITEM # 02 QTY(1)

JB8-3-100 JUNCTION BOX

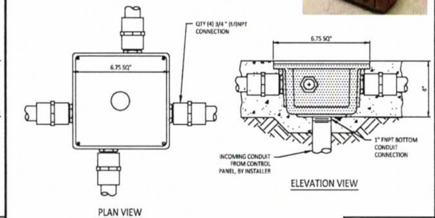
PRODUCT SPECIFICATION:
Junction Box, flush mount, UL listed, underwater cast bronze junction box with internal grounding lug, neoprene gasket, 1" FNPT bottom power connection, and three (3) 3/4" FNPT side connections for lights. Includes brass cord seals with proper grommet sizing based on light cord requirement. Plugs will be furnished for any unused/spare connections.



ITEM # 03 QTY(3)

JB8-4-100 JUNCTION BOX

PRODUCT SPECIFICATION:
Junction Box, flush mount, UL listed, underwater cast bronze junction box with internal grounding lug, neoprene gasket, 1" FNPT bottom power connection, and three (4) 3/4" FNPT side connections for lights. Includes brass cord seals with proper grommet sizing based on light cord requirement. Plugs will be furnished for any unused/spare connections.



ITEM # 04 QTY(3)

PC-8882 POTTING COMPOUND

PRODUCT SPECIFICATION:
PC-8882 Potting Compound is made for encapsulating wire connections within electrical junction boxes. Potting compound adheres well and pulls away cleanly for fast splice re-entry. Prevents moisture in junction boxes.

ENGINEERING DATA			
POTTING COMPOUND		OZ.	IN^3
PC-8882-C	2-PT	12.3	22
➔ PC-8882-D	2-PT	21.3	30

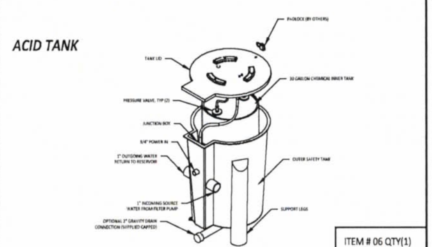
Potting Compound; Two-part, non-urethane, re-enterable encapsulant compound. Meets NEC article 680 as an approved potting compound.

ITEM # 05 QTY(12)

PWA-30 CHEMICAL METER AND STORAGE TANK

PRODUCT SPECIFICATION:
Double wall 30-gallon acid storage tank with fittings 3" supply piping & 2" capped drain

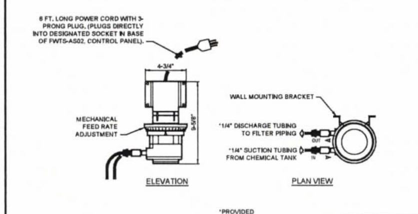
ACID TANK



ITEM # 06 QTY(1)

FCMP-P24737 CHEMICAL METERING PUMP

PRODUCT SPECIFICATION:
Single-Head Adjustable Rate Chemical Metering Pump, for acid or base injection with adjustable mechanical feed rate of 0.2 to 3.0 gal./day. Unit features 26 rpm motor rated for 120 Volt, Single Phase operation and includes a 6 ft. long power cord with 3-prong plug. Accessories include: 20 ft. of 1/4" poly tubing (installer cut to length, as required), tubing connector fittings, suction side ceramic tubion weight, feed side check valve.



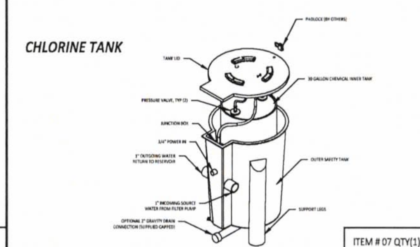
*PROVIDED

ITEM # 06a QTY(2)

PWC-30 CHEMICAL METER AND STORAGE TANK

PRODUCT SPECIFICATION:
Double wall 30-gallon chlorine storage tank with fittings 3" supply piping & 2" capped drain.

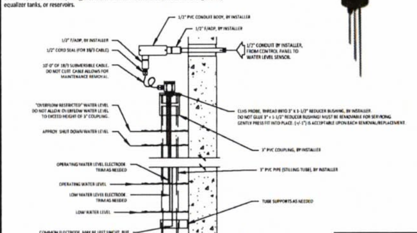
CHLORINE TANK



ITEM # 07 QTY(1)

WLS-CG-5 WATER LEVEL SENSOR

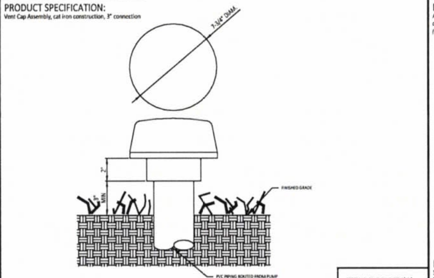
PRODUCT SPECIFICATION:
WLS-CG-Series, polypropylene head construction, with up to 5 probe electrical connections, electrodes are stainless steel, pipe thread 1 1/2", cable connection screw terminals. Includes (4) 1000mm probes for static, filling, low water and common. Suitable for use in storage tanks, equalizer tanks, or reservoirs.



ITEM # 08 QTY(1)

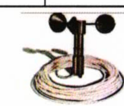
VCA-300 VENT CAP

PRODUCT SPECIFICATION:
Vent Cap Assembly, cat iron construction, 3" connection

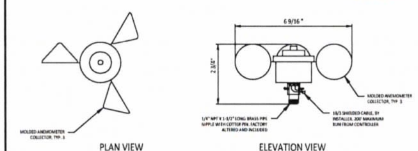


ITEM # 09 QTY(1)

AN-2D WIND ANEMOMETER



PRODUCT SPECIFICATION:
AN-2D Wind Anemometer; UL Listed molded 3-collector anemometer, consists of polycarbonate constructed with UV inhibitors, beryllium copper shaft and teflon bearings. 18/3 shielded cable required.
(PRODUCT CHANGE IN PROGRESS. NEW DESCRIPTION PENDING)



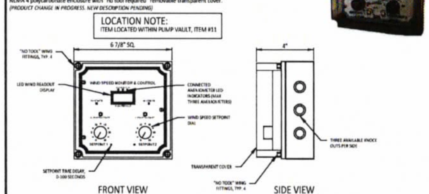
NOTES:
1) 18/3 SHIELDED CABLE BY INSTALLER. MAXIMUM DEDICATED CONDUIT RUN 200' (FEET).
2) SPRAY EFFECT HEIGHT CONTROL REQUIRES ACTUATED VALVE OR VARIABLE FREQUENCY DRIVE (VFD).

ITEM # 10 QTY(1)

WSM-2D WIND SPEED MONITOR & CONTROL

PRODUCT SPECIFICATION:
WSM-2D Wind Speed Monitor & Control; UL Listed adjustable wind speed velocity controller, Includes solid state circuits, triple LED display, operational pilot lights, manual override switches, two independent output relays, 0-100 second time delay relays (one per set point) housed in a NEMA 4 polycarbonate enclosure with "no tool required" removable transparent cover.
(PRODUCT CHANGE IN PROGRESS. NEW DESCRIPTION PENDING)

LOCATION NOTE:
ITEM LOCATED WITHIN PUMP VAULT, ITEM #11

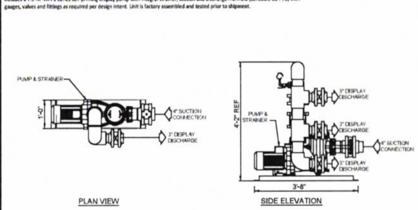


NOTES:
1.) WIND CONTROLLER REQUIRES "AN-1D" ANEMOMETER
2.) LOCATE WITHIN 200' (FEET) OF ANEMOMETER LOCATION

ITEM # 11 QTY(1)

DPP-750-P24737 DISPLAY PUMP PAD ASSEMBLY

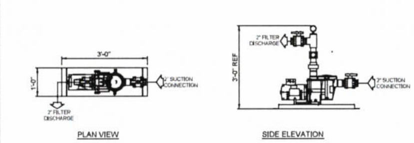
PRODUCT SPECIFICATION:
Skid-Mount Display Pumping System, consisting of welded steel construction, measuring approximately 12" wide x 44" long. System includes a 7.5-HP WFP3 Series self-priming Display pump with integral strainer; suction and discharge manifold (Schedule 80 PVC) with gauges, valves and fittings as required per design intent. Unit is factory assembled and tested prior to shipment.



ITEM # 12 QTY(1)

FPP-150-P24737 FILTER PUMP PAD ASSEMBLY

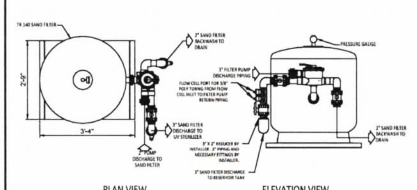
PRODUCT SPECIFICATION:
Skid-Mount Filter Pumping System, consisting of welded steel construction, measuring approximately 12" wide x 36" long. System includes a 1-1/2-HP WFP Series self-priming Filter pump with integral strainer; suction and discharge manifold (Schedule 80 PVC) with gauges, valves and fittings as required per design intent. Unit is factory assembled and tested prior to shipment.



ITEM # 13 QTY(1)

FPS-P24737 SAND FILTER EQUIPMENT PAD

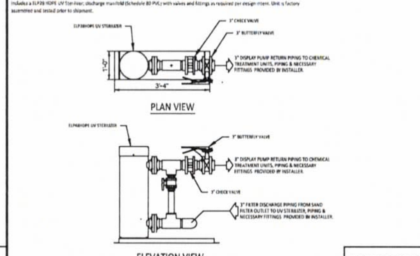
PRODUCT SPECIFICATION:
Skid-Mount Sand Filter Equipment Pad, consisting of welded steel construction, measuring approximately 33" wide x 44". The system includes SF-Series high-rate sand filter with multi-port dial valve, pressure gauge, 2" check valve; Water Treatment Input/Output PVC Saddle Connections, Schedule 80 PVC piping and valves as required to meet the design intent. Unit is factory assembled and tested prior to shipment.



ITEM # 14 QTY(1)

FPS-UV-P24737 UV EQUIPMENT PAD

PRODUCT SPECIFICATION:
Skid-Mount Ultraviolet Sterilizer Equipment Pad, consisting of welded steel construction, measuring approximately 12" wide x 40" long. System includes a ELP28 HDPE UV Sterilizer; discharge manifold (Schedule 80 PVC) with valves and fittings as required per design intent. Unit is factory assembled and tested prior to shipment.



ITEM # 15 QTY(1)

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HEADWATERS PARK SPLASHPAD

Fort Wayne, IN
For T III Environments, LLC
Indianapolis, IN

REV: 02	BY: WP	DATE: 08/26/24
DESCRIPTION:	CHKD:	DATE:

BY:	JD/WP	DATE: 08/12/24
CHECKED:	WP	DATE: 08/12/24
APPROVED:		DATE:
SCALE:	NONE	
FP PROJECT REF: P24737		CLIENT PROJECT REF:

DRAWING TITLE:
FOUNTAIN EQUIPMENT DETAIL SHEET 1

STATUS:
PRELIMINARY - FOR CLIENT APPROVAL

DRAWING NUMBER: FD-1 | REV:

CP-UV-P24737 UV CONTROL PANEL

PRODUCT SPECIFICATION:

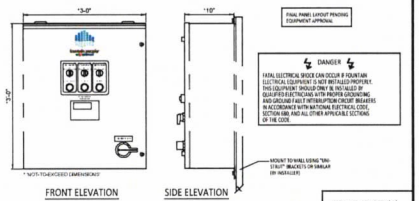
Control Panel for Ultraviolet Sterilizer Unit, wall mounted.

ITEM # 16 QTY(1)

CP-P24737 FOUNTAIN ELECTRICAL PANEL

PRODUCT SPECIFICATION:

Fountain Control Panel, UL listed panel in NEMA 4 enclosure with required pump starter/motor protector, breakers, water level controls, lighting circuit & contactor, DES color wheel controller, HMI touchscreen, smart relay/PLC as required for communication with variable frequency drive controllers, and main disconnect switch. Panel is pre-assembled and tested under load before shipping.



ITEM # 17 QTY(1)

VFD-SERIES VARIABLE FREQUENCY DRIVE

PRODUCT SPECIFICATION:

Variable Speed Device, integrated digital setting dial, safety stop function, integrated brake "chopper" circuit, frequency search function, "dancer" control allows position signal to control roll tension, optimum excitation control, password function for parameter setting protection, MODBUS RTU standard via RJ45 port, 150% torque @ 1Hz and 100% torque at 3Hz. using general purpose magnetic flux vector control. NEMA 4X Enclosure.

NEMA 4/4X 200-240VAC 3Ph		
HP	MODEL No.	WT. (lbs.)
3	FX4C20030C	8.5
5	FX4C20050C	14
7 1/2	FX4C20075C	14
10	FX4C20100C	29.5
15	FX4C20150C	29.5
20	FX4C20200C	50
25	FX4C20250C	50

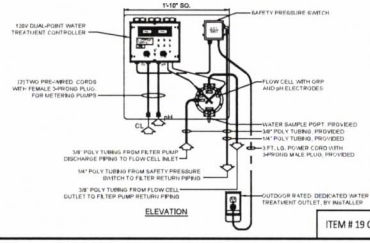
TYPICAL UNIT SHOWN

ITEM # 18 QTY(1)

BECSYS5 DUAL-POINT AUTO WATER TREATMENT SYSTEM

PRODUCT SPECIFICATION:

Dual-Point Automatic Water Treatment System, for automatic maintenance of pool water pH and sanitizer levels. System consists of: Dual-Point Controller with digital read-out, acrylic Flow Cell, ORP and pH electrodes, rotary flow switch & sample port all mounted to a 1'-10" SQ., 3/4" thick PVC Backboard. System also includes 3/8" flex tubing and compression fittings, two (2) pre-wired 3-prong female connectors for controlled output to 120V metering pumps, 3 ft. long flex power cord with 3-prong male plug. Unit requires 120 Volt, Single Phase power and must be wall-mounted within 1mm filtration system (By Installer)



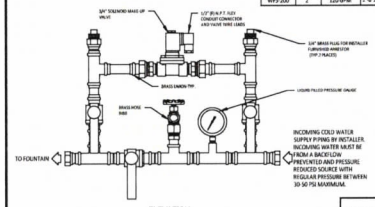
ITEM # 19 QTY(1)

WFS-100 1" FILL WATER STATION

PRODUCT SPECIFICATION:

WFS Series Water Fill Station, constructed of copper and brass with 1" 120VAC solenoid fill valve, manual bypass and isolation valves, union fittings, hose bibb, plugged female threaded risers on each loop side for water hammer arrestor connection (by Installer), liquid-filled inlet pressure gauge and (F) N.P.T connections. Flow direction is from right to left.

ENGINEERING DATA				
MODEL #	FILL LINE PIPE SIZE	APPROX. MANUAL FILL RATE@50 P.S.I	*OVERALL LENGTH	*OVERALL HEIGHT
WFS-075	3/4"	12 GPM	1'-11 1/2"	1'-0 1/2"
WFS-100	1"	25 GPM	2'-0 1/2"	1'-0 7/8"
WFS-150	1 1/2"	80 GPM	2'-3 1/2"	1'-0 1/2"
WFS-200	2"	120 GPM	2'-8 1/2"	1'-0 5/8"



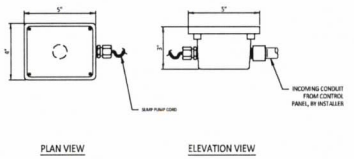
ITEM # 20 QTY(1)

JB2-1-075 UNDERWATER JUNCTION BOX

PRODUCT SPECIFICATION:

Junction Box, conduit mount, UL listed, underwater cast bronze junction box with internal grounding lug, neoprene gasket, 3/4" FNPT bottom cover connection, and one (1) 3/4" FNPT side connections for light. Includes brass cord seals with proper grommet sizing based on light cord requirement. Plugs will be furnished for any unused/spare connections.

* IMAGE SHOWN FOR REFERENCE.

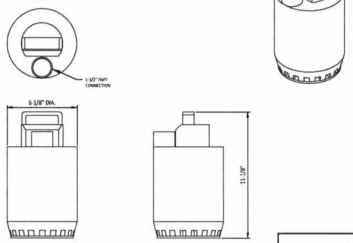


ITEM # 21 QTY(1)

SP-033-AT SUBMERSIBLE PUMP

PRODUCT SPECIFICATION:

Sump Pump assembly with check valve, Stainless steel construction with a 1/3 HP, 120V, single phase, 3500 rpm thermally-protected motor, an adjustable float switch, 1 1/2" threaded connection, capability of pumping up to 40 gpm, maximum 15 foot of head, and capable of pumping 3/8" solids.



ITEM # 22 QTY(1)

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4800 HWY 123, SAN MARCOS, TX 78667 USA
TEL: (512) 392-1155 WWW.FOUNTAINPEOPLE.COM FAX: (512) 392-1154

HEADWATERS PARK SPLASHPAD

Fort Wayne, IN
For T III Environments, LLC
Indianapolis, IN

REV: 02	BY: WP	DATE: 08/26/24
DESCRIPTION:	CHKD:	DATE:

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BY: JD/WP	DATE: 08/12/24
CHECKED: WP	DATE: 08/12/24
APPROVED:	DATE:
SCALE: NONE	
FP PROJECT REF: P24737	CLIENT PROJECT REF:

DRAWING TITLE:

FOUNTAIN EQUIPMENT DETAIL SHEET 2

STATUS: PRELIMINARY - FOR CLIENT APPROVAL

DRAWING NUMBER: FD-2 REV:

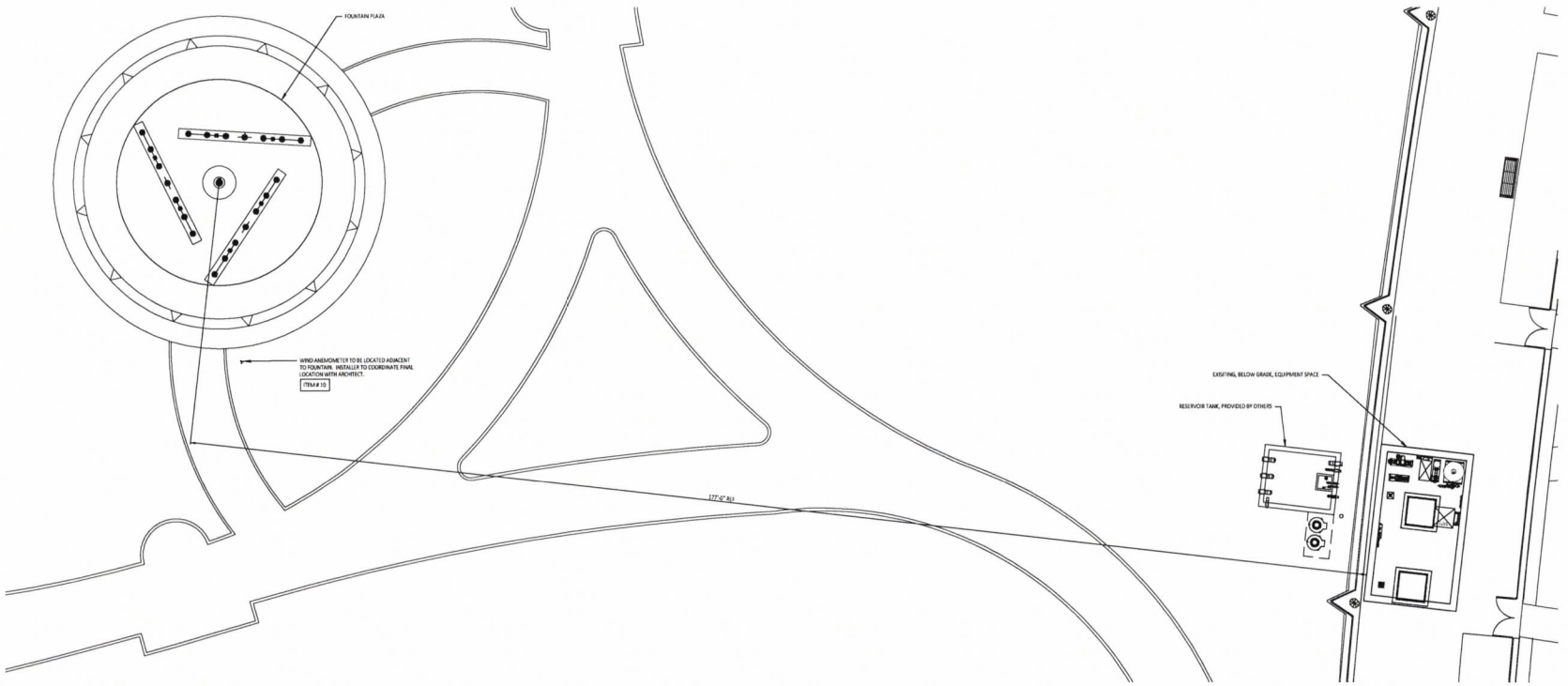
NOTICE TO INSTALLER

DIMENSIONS INDICATED ARE FOR REFERENCE ONLY! FINAL LAYOUT AND EXACT PLACEMENT OF NEW AND EXISTING ASSEMBLIES TO BE VERIFIED BY THE ARCHITECT, LANDSCAPE ARCHITECT AND/OR OWNER.

Headwaters Park Splashpad Equipment List
Fountain People - 08/26/24

Item #	Qty	Component Number	Description
^01	21	FIAC-500-SJ	500 Series Fountain-in-a-Can
^02	1	FIAC-2000-SJ	2000 Series Fountain-in-a-Can
^03	3	JBB-3-100	Junction Box
^04	3	JBB-4-100	Junction Box
05	12	PC-8882-O	Potting compound, 21 oz. package
06	1	PWA-P24737	30-gallon acid storage tank
06a	2	FCM^-P24737	Chemical Feed Pump
07	1	PWC-P24737	30-gallon chlorine storage tank
08	1	WLS-CG-5	Water Level Sensor
09	1	VCA-300	3" Vent Cap Assembly
10	1	AN-2D	Wind Speed Sensor
11	1	WSM-2D	Wind Speed Monitor & Controller
12	1	DPS-75D-P24737	Skid-Mount Display Pump
13	1	FPS-150-P24737	Skid-Mount Filter Pump
14	1	FPS-P24737	Skid-Mount Sand Filter
15	1	FPS-UV-P24737	Skid-Mount Ultraviolet Sterilizer
16	1	CP-UV-P24737	UV Control Panel
17	1	CPL-P24737	Fountain Control Panel
18	1	VFD-1000	10HP Variable Frequency Drive
19	1	BECSYS5	Water Chemistry Control System
20	1	WFS-100	1" Fill Manifold
21	1	JB2-1-075	Underwater Junction Box
22	1	SP-033-AT	Sump pump for reservoir

^ ITEM REQUIRED FOR FOUNTAIN CONCRETE POUR.



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HEADWATERS PARK SPLASHPAD

Fort Wayne, IN
For T III Environments, LLC
Indianapolis, IN

REV: 02	BY: WP	DATE: 08/26/24
DESCRIPTION: .	CHKD:	DATE:

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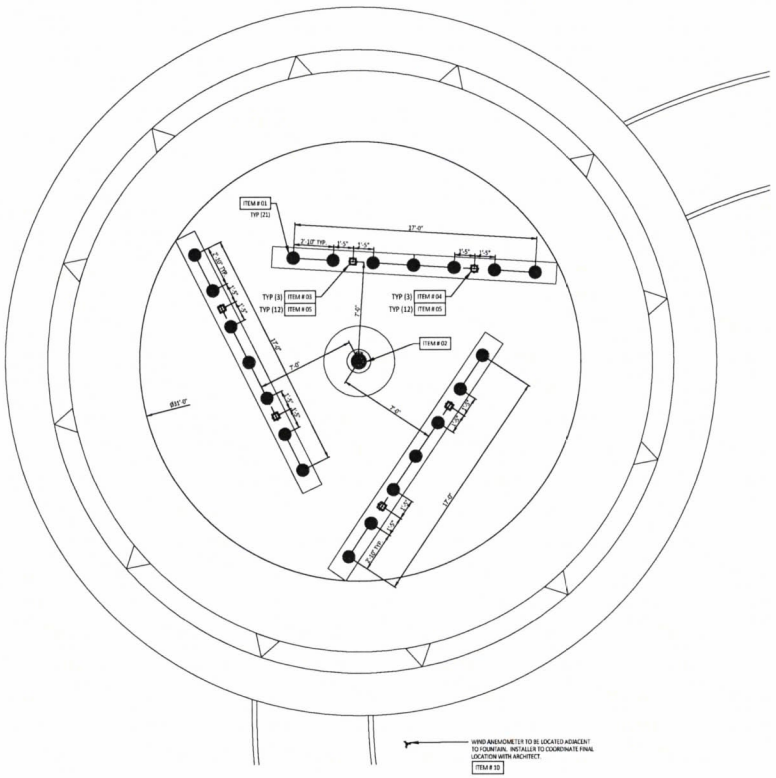
BY:	JD/WP	DATE: 08/12/24
CHECKED:	WP	DATE: 08/12/24
APPROVED:		DATE:
SCALE:	NONE	
FP PROJECT REF: P24737		CLIENT PROJECT REF:

DRAWING TITLE:

FOUNTAIN SITE PLAN

STATUS: PRELIMINARY - FOR CLIENT APPROVAL

DRAWING NUMBER: FM-1 REV:



FOUNTAIN SPRAYPAD PLAN VIEW

SCALE: 1/4" = 1'-0"

NOTICE TO INSTALLER

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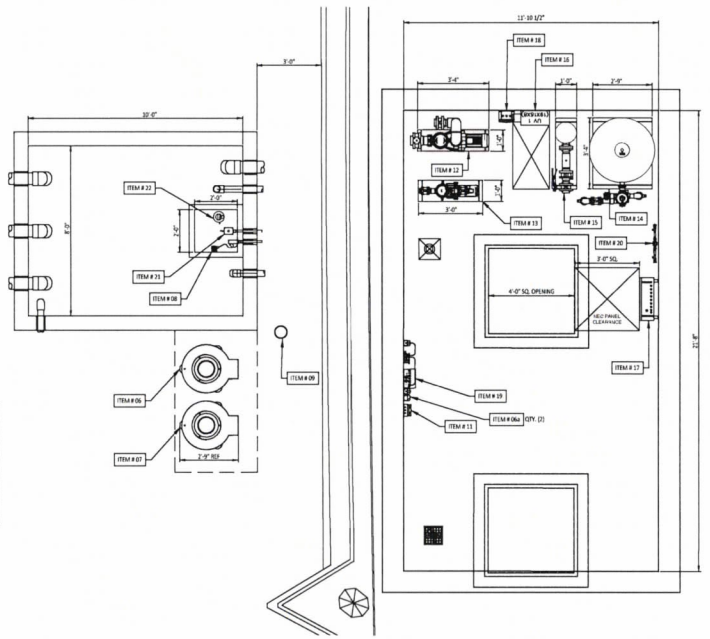
Headwaters Park Splashpad Equipment List
Fountain People - 08/26/24

Item #	Qty	Component Number	Description
^01	21	FIAC-500-SJ	500 Series Fountain-in-a-Can
^02	1	FIAC-2000-SJ	2000 Series Fountain-in-a-Can
^03	3	JB8-3-100	Junction Box
^04	3	JB8-4-100	Junction Box
05	12	PC-8882-D	Potting compound, 21 oz. package
06	1	PWA-P24737	30-gallon acid storage tank
06a	2	FCM*-P24737	Chemical Feed Pump
07	1	PWC-P24737	30-gallon chlorine storage tank
08	1	WLS-CG-S	Water Level Sensor
09	1	VCA-300	3" Vent Cap Assembly
10	1	AN-2D	Wind Speed Sensor
11	1	WSMA-2D	Wind Speed Monitor & Controller
12	1	DPS-750-P24737	Skid-Mount Display Pump
13	1	FPS-150-P24737	Skid-Mount Filter Pump
14	1	FPS-P24737	Skid-Mount Sand Filter
15	1	FPS-UV-P24737	Skid-Mount Ultraviolet Sterilizer
16	1	CP-UV-P24737	UV Control Panel
17	1	CPL-P24737	Fountain Control Panel
18	1	VFD-1000	10HP Variable Frequency Drive
19	1	BECSYS5	Water Chemistry Control System
20	1	WPS-100	1" Fill Manifold
21	1	JB2-1-075	Underwater Junction Box
22	1	SP-033-AT	Sump pump for reservoir

^ ITEM REQUIRED FOR FOUNTAIN CONCRETE POUR.

NOTE:
INSTALLER TO REVIEW EXISTING ROOM VENTILATION SYSTEM AND ROOM LIGHTING FOR RE-USE.

EQUIPMENT ROOM LIGHTING AND VENTILATION POWER IS NOT INCLUDED IN FOUNTAIN CONTROL PANEL



FOUNTAIN EQUIPMENT ROOM PLAN VIEW

SCALE: 3/8" = 1'-0"

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HEADWATERS PARK SPLASHPAD

Fort Wayne, IN
For T III Environments, LLC
Indianapolis, IN

REV: 02	BY: WP	DATE: 08/26/24
DESCRIPTION:	CHKD:	DATE:

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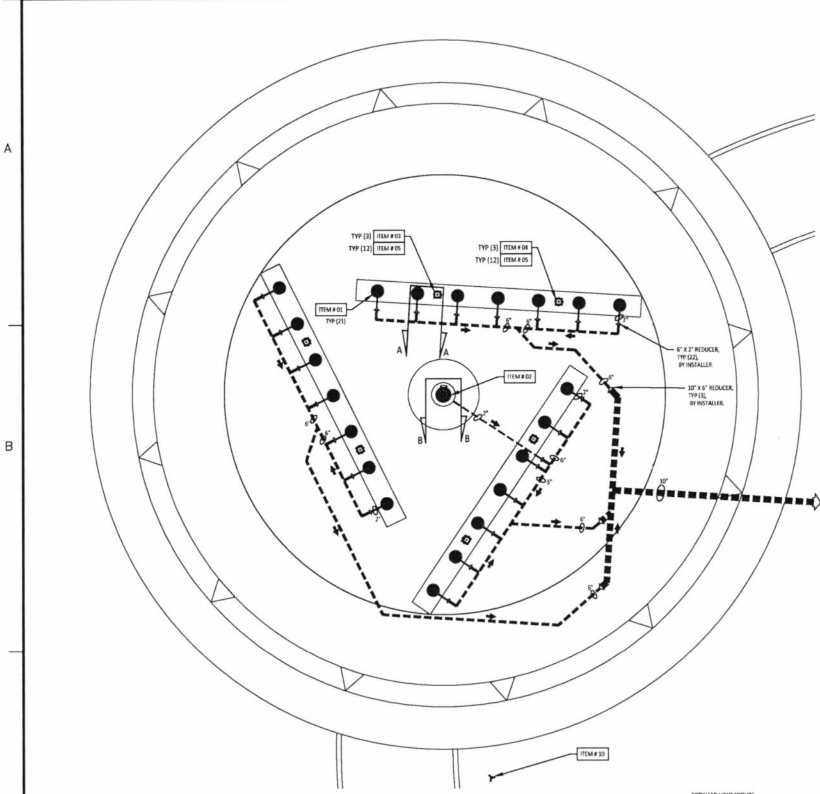
BY:	JD/WP	DATE: 08/12/24
CHECKED:	WP	DATE: 08/12/24
APPROVED:		DATE:
SCALE:	NONE	
FP PROJECT REF: P24737		CLIENT PROJECT REF:

DRAWING TITLE:

FOUNTAIN DIMENSION PLAN

STATUS: PRELIMINARY - FOR CLIENT APPROVAL

DRAWING NUMBER: FM-2 REV:

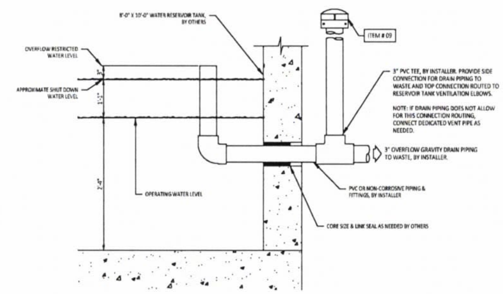


FOUNTAIN SPRAYPAD PLAN VIEW

SCALE: 1/4" = 1'-0"

NOTE:
ARCHITECTURAL DETAILING SHOWN FOR REFERENCE ONLY.

NOTE: ALL PIPING AND CONDUITS SHOWN ARE DIAGRAMMATIC IN NATURE AND ARE NOT INTENDED TO REPRESENT THE ACTUAL PIPE ROUTING FOR THIS PROJECT.



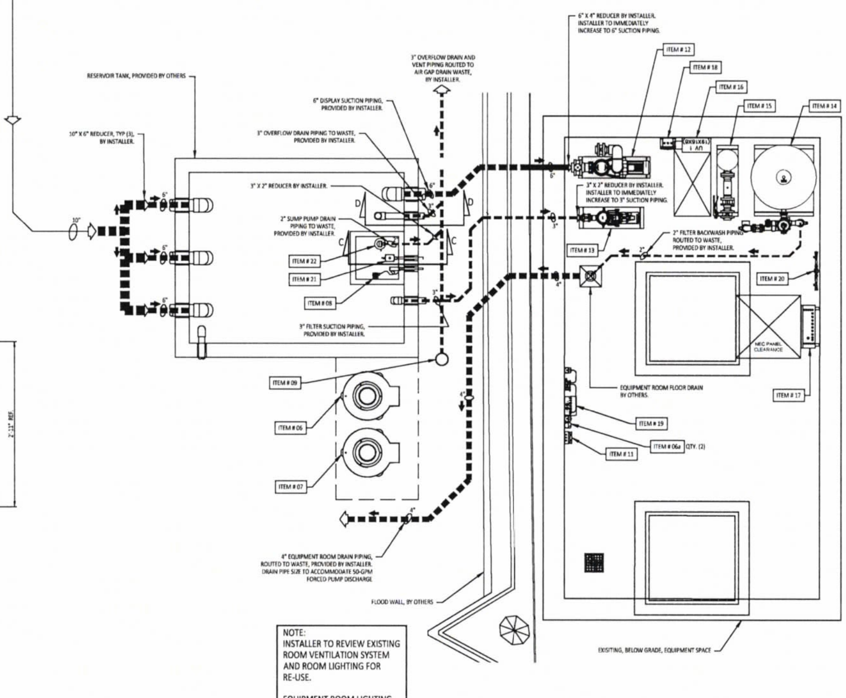
SECTION 'D'

SCALE: 1" = 1'-0"

Headwaters Park Splashpad Equipment List Fountain People - 08/26/24

Item #	Qty	Component Number	Description
*01	21	FIAC-500-SJ	500 Series Fountain-in-a-Can
*02	1	FIAC-2000-SJ	2000 Series Fountain-in-a-Can
*03	3	JBB-3-100	Junction Box
*04	3	JBB-4-100	Junction Box
05	12	PC-8882-D	Potting compound, 21 oz. package
06	1	PWA-P24737	30-gallon acid storage tank
06a	2	FCMP-P24737	Chemical Feed Pump
07	1	PWC-P24737	30-gallon chlorine storage tank
08	1	WLS-CG-5	Water Level Sensor
09	1	VCA-300	3" Vent Cap Assembly
10	1	AN-2D	Wind Speed Sensor
11	1	WSM-2D	Wind Speed Monitor & Controller
12	1	DPS-750-P24737	Skid-Mount Display Pump
13	1	FPS-150-P24737	Skid-Mount Filter Pump
14	1	FPS-P24737	Skid-Mount Sand Filter
15	1	FPS-UV-P24737	Skid-Mount Ultraviolet Sterilizer
16	1	CP-UV-P24737	UV Control Panel
17	1	CPL-P24737	Fountain Control Panel
18	1	VFD-1000	10HP Variable Frequency Drive
19	1	BECSYS5	Water Chemistry Control System
20	1	WFS-100	1" Fill Manifold
21	1	JB2-1-075	Underwater Junction Box
22	1	SP-033-AT	Sump pump for reservoir

* ITEM REQUIRED FOR FOUNTAIN CONCRETE POUR.

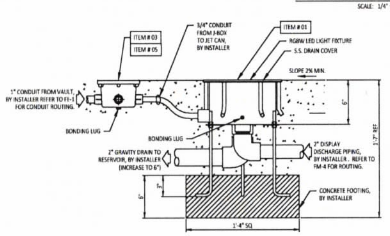


NOTE:
INSTALLER TO REVIEW EXISTING ROOM VENTILATION SYSTEM AND ROOM LIGHTING FOR RE-USE.

EQUIPMENT ROOM LIGHTING AND VENTILATION POWER IS NOT INCLUDED IN FOUNTAIN CONTROL PANEL

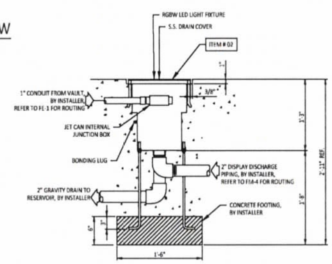
FOUNTAIN EQUIPMENT ROOM PLAN VIEW

SCALE: 3/8" = 1'-0"



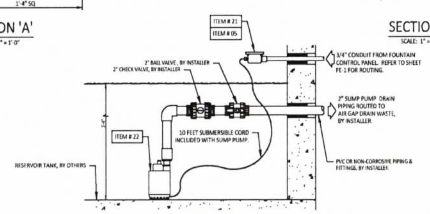
SECTION 'A'

SCALE: 1 1/2" = 1'-0"



SECTION 'B'

SCALE: 1" = 1'-0"



SECTION 'C'

SCALE: 3/4" = 1'-0"

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HEADWATERS PARK SPLASHPAD

Fort Wayne, IN
For T III Environments, LLC
Indianapolis, IN

REV: 02	BY: WP	DATE: 08/26/24
DESCRIPTION:	CHKD:	DATE:

BY: JD/WP	DATE: 08/12/24
CHECKED: WP	DATE: 08/12/24
APPROVED:	DATE:
SCALE: NONE	
FP PROJECT REF: P24737	CLIENT PROJECT REF:

DRAWING TITLE:

FOUNTAIN SUCTION, DRAIN & VENT PIPING PLAN

STATUS: PRELIMINARY - FOR CLIENT APPROVAL

DRAWING NUMBER: FM-3

REV:

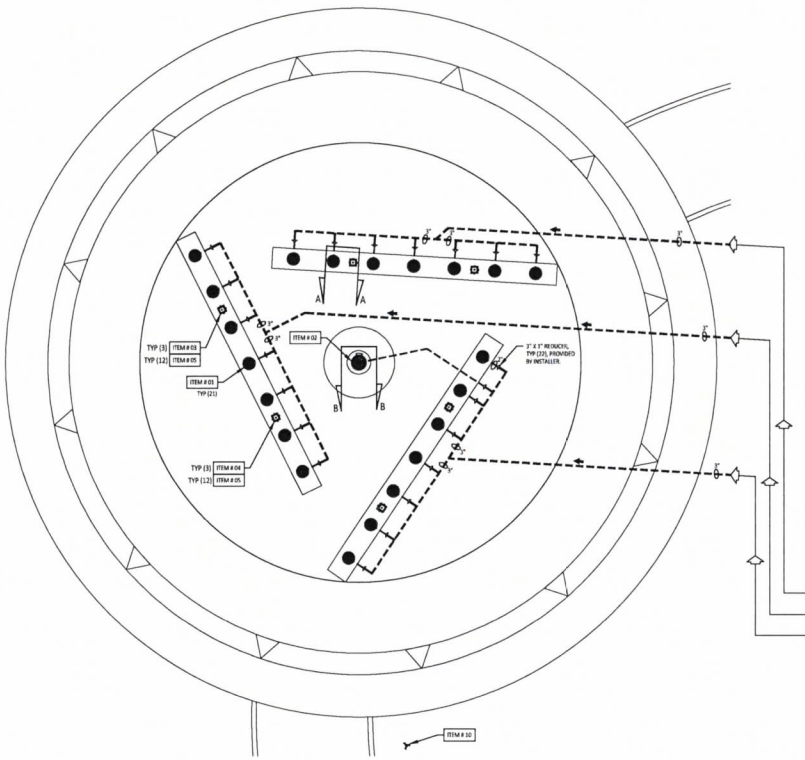
NOTE:
ARCHITECTURAL DETAILING SHOWN FOR REFERENCE ONLY.

NOTE: ALL PIPING AND CONDUITS SHOWN ARE DIAGRAMMATIC IN NATURE AND ARE NOT INTENDED TO REPRESENT THE ACTUAL PIPE ROUTING FOR THIS PROJECT.

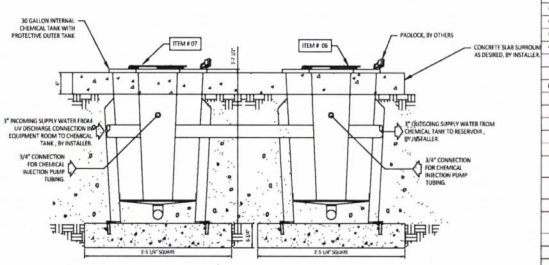
Headwaters Park Splashpad Equipment List
Fountain People - 08/26/24

Item #	Qty	Component Number	Description
*01	21	FIAC-500-SI	500 Series Fountain-in-a-Can
*02	1	FIAC-2000-SI	2000 Series Fountain-in-a-Can
*03	3	JBB-3-100	Junction Box
*04	3	JBB-4-100	Junction Box
05	12	PC-8882-D	Potting compound, 21 oz. package
06	1	PWA-P24737	30-gallon acid storage tank
06a	2	FCMP-P24737	Chemical Feed Pump
07	1	PWC-P24737	30-gallon chlorine storage tank
08	1	WLS-CG-5	Water Level Sensor
09	1	VCA-300	3" Vent Cap Assembly
10	1	AN-2D	Wind Speed Sensor
11	1	WSM-2D	Wind Speed Monitor & Controller
12	1	DPS-750-P24737	Skid-Mount Display Pump
13	1	FPS-350-P24737	Skid-Mount Filter Pump
14	1	FPS-P24737	Skid-Mount Sand Filter
15	1	FPS-UV-P24737	Skid-Mount Ultraviolet Sterilizer
16	1	CP-UV-P24737	UV Control Panel
17	1	CPL-P24737	Fountain Control Panel
18	1	VFD-1000	20HP Variable Frequency Drive
19	1	BECSYS5	Water Chemistry Control System
20	1	WFS-100	3" Fill Manifold
21	1	JB2-1-075	Underwater Junction Box
22	1	SP-013-AT	Sump pump for reservoir

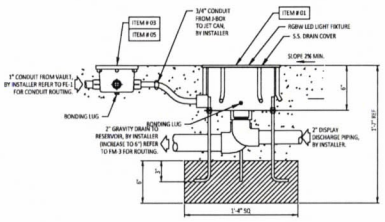
* ITEM REQUIRED FOR FOUNTAIN CONCRETE POUR.



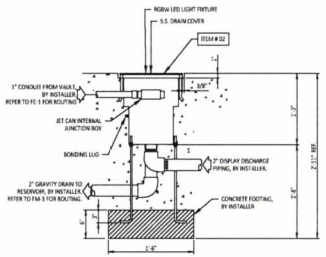
FOUNTAIN SPRAYPAD PLAN VIEW
SCALE: 1/4" = 1'-0"



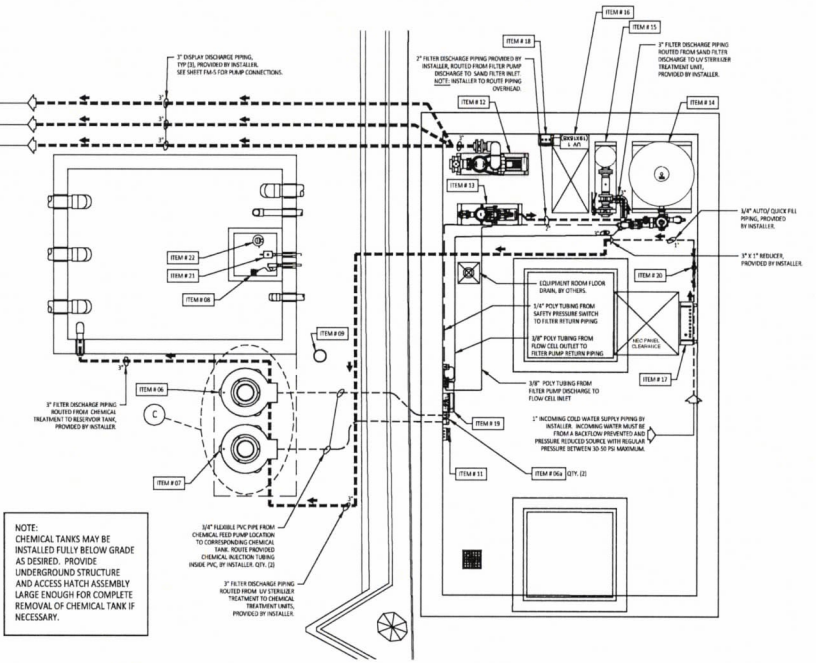
DETAIL 'C'
SCALE: 1/4" = 1'-0"



SECTION 'A'
SCALE: 1-1/2" = 1'-0"



SECTION 'B'
SCALE: 1" = 1'-0"



NOTE:
CHEMICAL TANKS MAY BE INSTALLED FULLY BELOW GRADE AS DESIRED. PROVIDE UNDERGROUND STRUCTURE AND ACCESS HATCH ASSEMBLY LARGE ENOUGH FOR COMPLETE REMOVAL OF CHEMICAL TANK IF NECESSARY.

FOUNTAIN EQUIPMENT ROOM PLAN VIEW
SCALE: 3/8" = 1'-0"

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HEADWATERS PARK SPLASHPAD
Fort Wayne, IN
For T III Environments, LLC
Indianapolis, IN

REV: 02	BY: WP	DATE: 08/26/24
DESCRIPTION: .	CHKD:	DATE:

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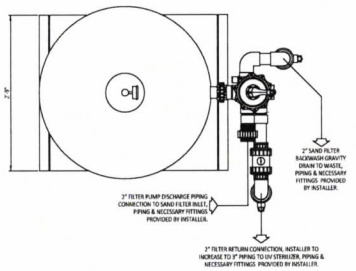
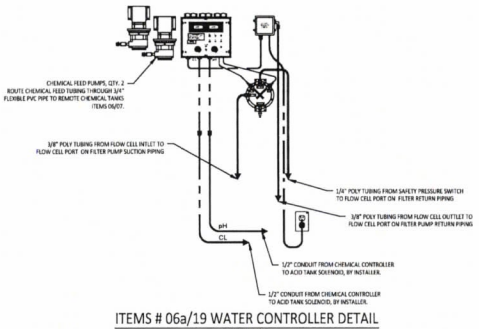
BY:	JD/WP	DATE: 08/12/24
CHECKED:	WP	DATE: 08/12/24
APPROVED:		DATE:
SCALE:	NONE	
FP PROJECT REF: P24737		CLIENT PROJECT REF:

DRAWING TITLE:
FOUNTAIN DISCHARGE & FILL PIPING PLAN

STATUS: PRELIMINARY - FOR CLIENT APPROVAL

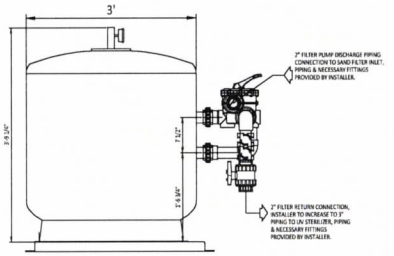
DRAWING NUMBER: FM-4 REV:

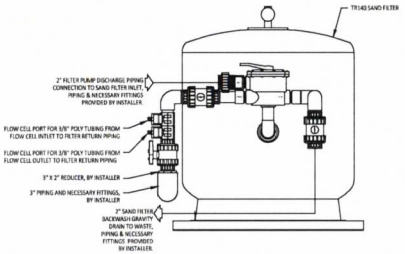




ITEMS # 06a/19 WATER CONTROLLER DETAIL

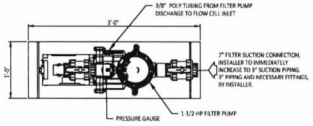
SCALE: 1" = 1'-0"

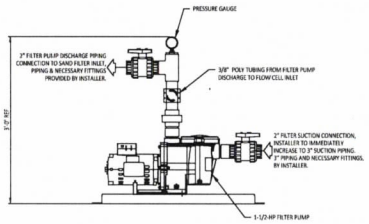




ITEM # 14 SAND FILTER
EQUIPMENT PAD

SCALE: 1" = 1'-0"





ITEM # 13 DISPLAY PUMP
EQUIPMENT PAD

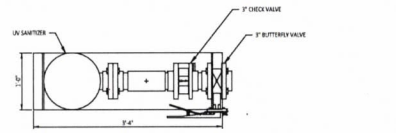
SCALE: 1" = 1'-0"

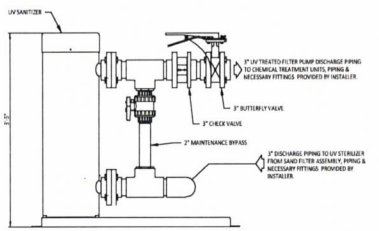
Headwaters Park Splashpad Equipment List
Fountain People - 08/26/24

Item #	Qty	Component Number	Description
*01	21	FIAC-500-SJ	500 Series Fountain-in-a-Can
*02	1	FIAC-2000-SJ	2000 Series Fountain-in-a-Can
*03	3	JBB-3-100	Junction Box
*04	3	JBB-4-100	Junction Box
05	12	PC-8882-D	Potting compound, 21 oz. package
06	1	PWA-P24737	30-gallon acid storage tank
06a	2	FCMP-P24737	Chemical Feed Pump
07	1	PWC-P24737	30-gallon chlorine storage tank
08	1	WLS-CG-5	Water Level Sensor
09	1	VCA-300	3" Vent Cap Assembly
10	1	AN-2D	Wind Speed Sensor
11	1	WSM-2D	Wind Speed Monitor & Controller
12	1	DPS-750-P24737	Skid-Mount Display Pump
13	1	FPS-150-P24737	Skid-Mount Filter Pump
14	1	FPS-P24737	Skid-Mount Sand Filter
15	1	FPS-UV-P24737	Skid-Mount Ultraviolet Sterilizer
16	1	CP-UV-P24737	UV Control Panel
17	1	CPL-P24737	Fountain Control Panel
18	1	VFD-1000	10-HP Variable Frequency Drive
19	1	BECSYS5	Water Chemistry Control System
20	1	WFS-100	1" Fill Manifold
21	1	JB2-1-075	Underwater Junction Box
22	1	SP-031-AT	Sump pump for reservoir

^ ITEM REQUIRED FOR FOUNTAIN CONCRETE POUR.

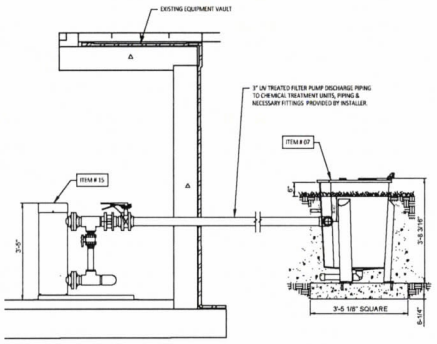
NOTE:
FABRICATION SHOWN FOR REFERENCE ONLY. ACTUAL FABRICATION METHOD MAY VARY.





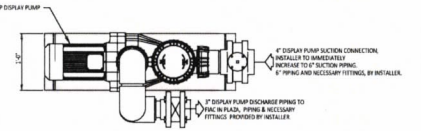
ITEM # 15 UV SANITIZER
EQUIPMENT PAD

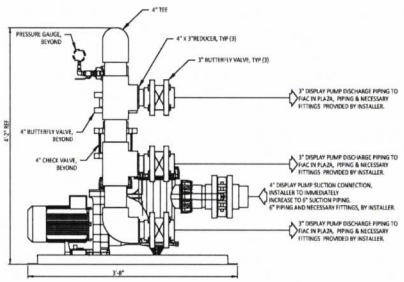
SCALE: 1" = 1'-0"



ITEM # 15 UV SANITIZER TO
CHEMICAL UNIT VIEW

SCALE: 1/2" = 1'-0"





ITEM # 12 DISPLAY PUMP
EQUIPMENT PAD

SCALE: 1" = 1'-0"

fountain people
A PLAYCORE Company
4600 HWY 123, SAN MARCOS, TX 78667 USA
TEL: (512) 392-1155 WWW.FOUNTAINPEOPLE.COM FAX: (512) 392-1154

HEADWATERS PARK SPLASHPAD

Fort Wayne, IN
For T III Environments, LLC
Indianapolis, IN

REV: 02	BY: WP	DATE: 08/26/24
DESCRIPTION:	CHKD:	DATE:

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BY:	JD/WP	DATE: 08/12/24
CHECKED:	WP	DATE: 08/12/24
APPROVED:		DATE:
SCALE:	NONE	
FP PROJECT REF: P24737		CLIENT PROJECT REF:

DRAWING TITLE:

FOUNTAIN EQUIPMENT SKID DETAIL SHEET

STATUS: PRELIMINARY - FOR CLIENT APPROVAL

DRAWING NUMBER: FM-5 REV:

NOTE: ALL PIPING AND CONDUITS SHOWN ARE DIAGRAMMATIC IN NATURE AND ARE NOT INTENDED TO REPRESENT THE ACTUAL PIPE ROUTING FOR THIS PROJECT.

NOTE:
ARCHITECTURAL DETAILING SHOWN FOR REFERENCE ONLY.

Headwaters Park Splashpad Equipment List
Fountain People - 08/26/24

Item #	Qty	Component Number	Description
^01	21	FIAC-500-SJ	500 Series Fountain-in-a-Can
^02	1	FIAC-2000-SJ	2000 Series Fountain-in-a-Can
^03	3	JBB-3-100	Junction Box
^04	3	JBB-4-100	Junction Box
05	12	PC-8882-O	Potting compound, 21 oz. package
06	1	PWA-P24737	30-gallon acid storage tank
06a	2	FCMP-P24737	Chemical Feed Pump
07	1	PWC-P24737	30-gallon chlorine storage tank
08	1	WLS-CG-5	Water Level Sensor
09	1	VCA-300	3" Vent Cap Assembly
10	1	AN-2D	Wind Speed Sensor
11	1	WSM-2D	Wind Speed Monitor & Controller
12	1	DPS-750-P24737	Skid-Mount Display Pump
13	1	FPS-150-P24737	Skid-Mount Filter Pump
14	1	FPS-P24737	Skid-Mount Sand Filter
15	1	FPS-UV-P24737	Skid-Mount Ultraviolet Sterilizer
16	1	CP-UV-P24737	UV Control Panel
17	1	CPL-P24737	Fountain Control Panel
18	1	VFD-1000	10HP Variable Frequency Drive
19	1	BECSV55	Water Chemistry Control System
20	1	WFS-100	1" Fill Manifold
21	1	JB2-1-075	Underwater Junction Box
22	1	SP-033-AT	Sump pump for reservoir

^ ITEM REQUIRED FOR FOUNTAIN CONCRETE POUR.

FOUNTAIN SPRAYPAD PLAN VIEW
SCALE: 1/4" = 1'-0"

DETAIL 'A'
SCALE: 3" = 1'-0"

DETAIL 'B'
SCALE: 1" = 1'-0"

SECTION 'C'
SCALE: 1" = 1'-0"

SECTION 'D'
SCALE: 1-1/2" = 1'-0"

FOUNTAIN EQUIPMENT ROOM PLAN VIEW
SCALE: 3/4" = 1'-0"

NOTE:
INSTALLER TO REVIEW EXISTING ROOM VENTILATION SYSTEM AND ROOM LIGHTING FOR RE-USE.

EQUIPMENT ROOM LIGHTING AND VENTILATION POWER IS NOT INCLUDED IN FOUNTAIN CONTROL PANEL

fountain people
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HEADWATERS PARK SPLASHPAD
Fort Wayne, IN
For T III Environments, LLC
Indianapolis, IN

REV: 02	BY: WP	DATE: 08/26/24
DESCRIPTION:	CHKD:	DATE:

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BY:	JD/WP	DATE: 08/12/24
CHECKED:	WP	DATE: 08/12/24
APPROVED:		DATE:
SCALE:	NONE	
FP PROJECT REF:	P24737	CLIENT PROJECT REF:

DRAWING TITLE:
FOUNTAIN ELECTRICAL PLAN

STATUS:
PRELIMINARY - FOR CLIENT APPROVAL

DRAWING NUMBER:	REV:
FE-1	

COUNCIL DIGEST SHEET

Enclosed with this introduction form is a tab sheet and related material from the vendor(s) who submitted bid(s). Purchasing Department is providing this information to Council as an overview of this award.

RFPs & BIDS

Quest Bid #	9275422
Awarded To	Hamilton Hunter Builders, Inc.
Amount	$755,782.00
Conflict of interest on file?	X Yes ☐ No
Number of Registrants	7
Number of Bids	2
Required Attachments	Bid Tab Form

EXTENSIONS

Date Last Bid Out	9/26/2024
# Extensions Granted To Date	0

SPECIAL PROCUREMENT

Contract #/ID *(State, Federal, Piggyback--Authority)*	n/a
Sole Source/ Compatibility Justification	

BID CRITERIA *(Take Buy Indiana requirements into consideration.)*

Most Responsible, Responsive Lowest	X Yes No *If no, explain below*
If not lowest, explain	

COUNCIL DIGEST SHEET

COST COMPARISON

Increase/decrease amount from prior years For annual purchase (if available).	n/a

DESCRIPTION OF PROJECT / NEED

Identify need for project & describe project; attach supporting documents as necessary.	Request for approval on behalf of the Board of Park Commissioners for a contract with Hamilton Hunter Builders, Inc. for construction services to remove the existing fountain in Headwaters Park and construct a new fountain in its place including all new fountain equipment per contract documents.

REQUEST FOR PRIOR APPROVAL

Provide justification if prior approval is being requested.	n/a

FUNDING SOURCE

Account Information.	ARPA Grant (approved)
	Parks CIP
	Supplemental LIT Funds

MEMORANDUM

To: City Council Members, City of Fort Wayne
From: Steve Schuhmacher
CC: File
Subject: Council Approval for Parks Department Headwaters Fountain Project
Date: October 24, 2024

The Headwaters Park fountain has been closed to the public since 2020 due to a failed inspection from the Allen County Health Department. This project will remove the existing fountain and replace all fountain equipment with new equipment that is compliant with current health standards.

Funding Source: Parks Cumulative Capital Funds, Supplemental LIT Funds

Bids for this project were received on behalf of the Board of Park commissioners on September 26th. Two bids were received, with the low bid submitted by Hamilton Hunter Builders, Inc. We respectively request your approval of this contract with the low bidder for the amount of $755,782.00 so that we may proceed with the work. If you have any questions, please feel free to contact me at 427-6401. I will also be available at the Council meeting to answer any questions.

Thank you in advance.

Steve Schuhmacher
Deputy Director
Fort Wayne Parks and Recreation

BILL NO. S-24-11-08

REPORT OF COMMITTEE ON FINANCE

November 19, 2024

Marty Bender Chair

Rohli Booker Co-Chair

All Council Members

An Ordinance approving the awarding of ITB #9275422 – Service Agreement - Headwaters Park Fountain Improvement – by the City of Fort Wayne, Indiana, by and through its Board of Park Commissioners and Hamilton Hunter Builders, Inc. for the Parks and Recreation Department

Involving a total cost of $755,782.00

COMMITTEE ON FINANCE HAVE HAD SAID Ordinance under consideration and beg leave to report back to the Common Council that said Ordinance

COUNCIL MEMBER	DO PASS	DO NOT PASS	ABSTAIN
BENDER			
BOOKER			
CHAMBERS			
ENSLEY			
FREISTROFFER			
HARTMAN			
JEHL			
MYERS			
PADDOCK			

STACY REED
DEPUTY CITY CLERK

Public Hearing Date: N/A
Read the first time in full and on motion by Councilperson Bender.
Read the second time by title and referred to the Finance Committee.
Read the third time in full and on motion by Councilperson Bender, placed on passage by the following vote:

TOTAL VOTES	AYES	NAYS	ABSTAINED	ABSENT
BENDER	☒	☐	☐	☐
BOOKER	☒	☐	☐	☐
CHAMBERS	☐	☐	☐	☒
ENSLEY	☒	☐	☐	☐
FREISTROFFER	☒	☐	☐	☐
HARTMAN	☒	☐	☐	☐
JEHL	☒	☐	☐	☐
MYERS	☐	☐	☐	☒
PADDOCK	☒	☐	☐	☐

DATED: November 26, 2024

Lana R. Keesling
LANA R. KEESLING, CITY CLERK

Passed and adopted by the Common Council of the City of Fort Wayne, Indiana, as Special Ordinance No. S-24-11-08 on the 26th day of November, 2024

ATTEST:

Lana R. Keesling
LANA R. KEESLING
CITY CLERK

Thomas J. Freistroffer
PRESIDING OFFICER

Presented by me to the Mayor of the City of Fort Wayne, Indiana, on the 27th of November 2024, at the hour of 9 o'clock A.M. E.S.T.

Lana R. Keesling
LANA R. KEESLING, CITY CLERK

Approved and signed by me this 27th day of November 2024, at the hour of 1:40 o'clock P.M. E.S.T.

RECEIVED
NOV 27 2024
LANA R. KEESLING
CITY CLERK

SHARON TUCKER, MAYOR