



**BID AND CONTRACT DOCUMENTS**

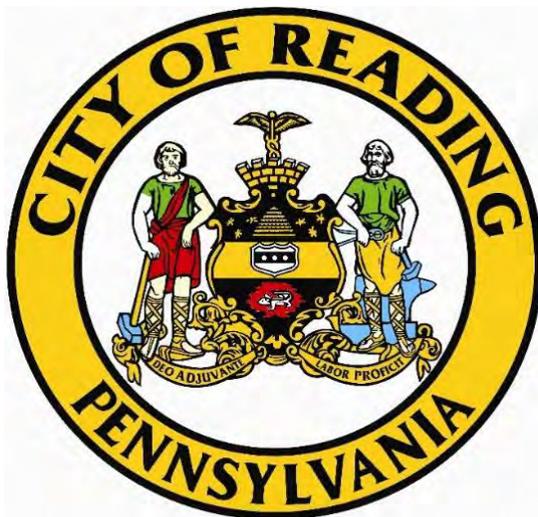
**FOR**

***SCHLEGEL PARK POOL***

***CITY OF READING***  
**BERKS COUNTY, PENNSYLVANIA**

*MARCH 2020*

Prepared for:  
*The City of Reading*



Project *REA-18-350*

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Federally Certified 8(a) EDWOSB  
State Certified DBE/WBE

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# NOTICE AND INSTRUCTIONS

CITY OF READING, PENNSYLVANIA

NOTICE TO CONTRACTORS

An electronic proposal, inclusive of all requested information and supporting documents, shall be submitted via the PennBid Program (<https://pennbid.procureware.com> ). Proposals shall be received until 3:00 P.M., prevailing time on, April 28, 2020, at which time the proposal shall be opened publicly.

Specifications and Proposal Forms for the above work can be obtained via Penn Bid at [www.pennbid.procureware.com](http://www.pennbid.procureware.com) .

Each proposal shall be accompanied by bid surety in the amount of ten percent (10%) of the proposal. A certified check or bid bond will be accepted.

Attention is called to the fact that prevailing wage rates must be paid by the contractor and that employees shall not be discriminated against because of race, color, age, religion, sex or national origin.

The City of Reading reserves the right to accept or reject any and all bids, and to accept or reject any part of a bid, as may be in the public interest.

Purchasing Coordinator

## INSTRUCTIONS TO BIDDERS

### PROPOSAL SUBMISSION

An electronic proposal, inclusive of all requested information and supporting documents, shall be submitted via the PennBid Program ([www.pennbid.procurement.com](http://www.pennbid.procurement.com)). Proposals shall be received until 3:00 P.M., prevailing time on, April 28, 2020, at which time the proposal shall be opened publicly.

Specifications and Proposal Forms for the above work can be obtained via Penn Bid at [www.pennbid.procurement.com](http://www.pennbid.procurement.com).

Bids received after the hour specified, will not be considered

### BONDS

Bid security, in the amount of ten percent (10%) of the bid price shall accompany each proposal. This bid security may be a Certified or Cashier's Check, or a bid bond furnished by a surety company, satisfactory to the City of Reading. The successful bidder, upon award of contract, shall furnish at the time of execution of the same, a Maintenance Bond, Payment Bond, and Performance Bond by a surety company acceptable to the City of Reading, in an amount equal to ONE HUNDRED PERCENT (100%) of the contract to guarantee satisfactory performance, and a Wage Rate Compliance Bond in an amount equal to FIFTY PERCENT (50%) of the contract. All bonds are subject to approval by the City Solicitor.

In case the contract is awarded to a bidder who fails to enter the contract or to deliver all required bonds and affidavits, the cash or check deposited shall become absolute property of the City; or if a bond has been deposited, it shall become payable immediately. Cash, checks or bonds deposited will be returned to unsuccessful bidders as soon as the contract is awarded, or all bids rejected.

### INSURANCE

The Contractor, at the time of execution of the contract, shall also furnish the City with insurance certificates of adequate limits, as later indicated, to protect the City of Reading, its agents, and employees from any litigation involving Worker's Compensation, Public Liability and Property Damage, involved in the work. All subcontractors must also furnish copies of their liability insurance and Worker's Compensation Insurance certificates to the City. No subcontractor will be allowed to perform any work under this contract by the City unless such certificates are submitted to and approved by the City beforehand.

### WORKERS' COMPENSATION AND PUBLIC LIABILITY AND PROPERTY DAMAGE INSURANCE

The status of the Contractor in the work to be performed by the Contractor is that of any independent Contractor and as such, he shall properly safeguard against any and all injury or damage to the public, to public and private property, materials and things, and as such he alone shall be responsible for any and all damage, loss or injury to persons or property that may arise, or be incurred, in or during the conduct or progress of said work without regard to whether or not the Contractor, his sub-contractors, agents, or employees have been negligent, and the Contractor shall keep the City free and discharged of and from any and all responsibility and liability therefore of any sort or kind. The Contractor shall assume all responsibility for risks or casualties of every description, for any or all damage, loss or injury to persons or property arising out of the nature of the work from the action of the elements, or from any unforeseen or unusual difficulty. The Contractor shall assume and be liable for all blame and loss of whatsoever nature by reason of neglect or violation of any Federal, State, County or Local laws, regulations, or ordinances; the Contractor shall indemnify and save harmless the City from all suits or actions of law of any kind whatsoever in connection with this work and shall if required by the City, produce evidence of settlement of any such action before final payment shall be made by the City. Contractor's Liability Insurance Certificate shall include the save harmless clause and shall be filed with the City.

The Contractor shall maintain such insurance as will protect him from claims under worker's compensation acts and from claims for damages because of bodily injury, including death, and property damage, which may arise from and during operations under this Contract, whether such operations be by himself, by any subcontractor or anyone directly or indirectly employed by either of them. Contractor's liability insurance shall be in the names of the Contractor and the City, as their respective interests may appear. Certificates of such insurance shall be filed with the City Risk and Safety Manager.

The minimum amount of liability insurance to be maintained by the Contractor during the life of the contract shall be as follows:

**Comprehensive General Liability** – for bodily injury and property damage – including any liability normally covered by a general liability policy with limits of not less than \$1,000,000 per occurrence and \$2,000,000 in the annual aggregate.

**Business Automobile Liability** – For owned, non-owned, leased and hired vehicles with a combined single limit of not less than \$1,000,000 for bodily injury and property damage.

**Professional Liability** – in minimum amounts of \$1,000,000 per occurrence and \$2,000,000 aggregate.

**Worker's Compensation** – Statutory limits in each state in which Service Provider is required to provide Worker's Compensation coverage including "All States" and "Voluntary Compensation" endorsement, and a Waiver of Subrogation endorsement in favor of the County.

**Employer's Liability** – with limits of not less than \$100,000 Accident – Each Accident, \$100,000 Disease – Each Employee; and \$500,000 Disease – Policy Limit.

Prior to commencement of performance of this Agreement, Contractor shall furnish to the City a certificate of insurance evidencing all required coverage in at least the limits required herein, **naming the City of Reading, its elected officials, agents, and employees as additional insureds under the Comprehensive General Liability coverage**, and providing that no policies may be modified or cancelled without thirty (30) days advance written notice to the City. Such certificate shall be issued to: **City of Reading, 815 Washington Street, Reading, PA 19601**. All policies shall be in effect with companies holding an A.M. Best rating of "A-" or better and shall be licensed to do business in the Commonwealth of Pennsylvania. Such companies shall also be acceptable to the City.

Please forward a certificate of insurance verifying these insurance requirements.

Liability insurance shall include automobile coverage, including "hired automobiles and non-ownership automobiles."

Liability insurance shall include the hazard of collapse, damage to underground utilities, underground blasting, and excavation. Prior to any blasting which may be required, blasting insurance shall be obtained by the Contractor in an amount satisfactory to the City Engineer.

Liability insurance shall include the hazard of building collapse and of damage to adjoining properties and/or to individuals located within or adjacent to each project site.

All subcontractors performing work under this contract must furnish to the City a copy of their Certificate of Insurance for Workers' Compensation and liability for bodily injury and property damage.

#### WAGES AND EMPLOYMENT REQUIREMENTS

Bidder agrees that not less than the prevailing wages will be paid.

The Contractor will further agree to comply with Commonwealth of Pennsylvania Act of August 15, 1961, P.L. 1225 and amendments as applicable.

#### EQUAL EMPLOYMENT OPPORTUNITY

During the performance of this Contract, the Contractor agrees as follows:

The Contractor will not discriminate against any employees or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices which may be provided by the City setting forth the provisions of this nondiscrimination clause.

The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

The Contractor will send to each labor union or representative of workers with which the Contractor has a collective bargaining agreement or other contract or understanding, a notice advising the labor union or workers' representatives of the Contractor, commitments under this Section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

In the event of the Contractor's noncompliance with the non-discrimination clauses of this Contract or with any of the said rules, regulations, or orders, this Contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further City contracts.

The Contractor will include the provisions of these paragraphs in every subcontract or purchase order unless exempted.

#### EMPLOYMENT OF CERTAIN PERSONS PROHIBITED

No person who, at the time, is serving sentence in a penal or correctional institution shall be employed on the work covered by this Contract.

#### SUPERVISION OF WORKERS

The Contractor shall provide qualified supervision of each crew at all times while working under this contract. Each supervisor shall be authorized by the Contractor to accept and act upon all directives issued by the City. Failure for the supervisor to act on said directives shall be sufficient cause to give notice that the Contractor is in default of the contract unless such directives would create potential personal injury or safety hazards.

This contract will be under the direct supervision of the City or its authorized representatives. Any alterations or modifications of the work performed under this contract shall be made only by written agreement between the Contractor and the City authorized representatives and shall be made prior to commencement of the altered or modified work. No claims for extra work or materials shall be allowed unless covered by written agreement.

## SUBCONTRACTS

The Contractor will not be allowed to subcontract work under this contract unless written approval is granted by the City. The Subcontractor, as approved, shall be bound by the conditions of the contract between the City and the Contractor. The authorization of a Subcontractor is to perform in accordance with all terms of the contract and specifications. All required notices, work orders, directives, and requests for emergency services will be directed to the Contractor. All directions given to the Subcontractor in the field shall bind the Contractor as if the notice had been given directly to the Contractor.

## QUALITY

Where a bid is asked for a certain article or "Approved Equal" and the bidder intends to furnish an article which the bidder considers equal to the one named, the bidder must specify in the bid the name and grade of said article. All disputes concerning grade and quality of materials or work shall be determined by a person duly authorized by the City.

## TIME OF COMPLETION

The bidders are herewith cautioned that the time of completion indicated in their proposal must be complied with. To insure timely completion, the successful bidder will be required to furnish adequate equipment, and qualified personnel in sufficient numbers at all times.

Where a date is set for delivery of materials or the performance of work, said materials must be delivered, or work performed, in accordance with the specifications or description herein contained on or before said date, or the order to the delinquent party will be canceled and awarded to the next lowest responsible bidder.

## BUSINESS PRIVILEGE TAX

The City of Reading imposes a Business Privilege License, at \$55.00 per calendar year. In addition, a Business Privilege Tax is imposed at the rate of 2-1/4 mills upon the gross receipts attributable to business conducted within the City of Reading.

## PERMITS/LICENSES

The Contractor shall, at his expense, pay all fees and procure all necessary licenses and permits needed to conduct the work required under the terms of this contract. The Contractor shall give any and all necessary formal notices required in conjunction with the lawful prosecution of the work of this contract.

## BASIS OF PAYMENT

All prices to be quoted F.O.B. Reading, PA destination. The City of Reading is tax exempt.

## OBSERVANCE OF LAWS, ORDINANCES AND REGULATIONS

The Contractor at all times during the term of this contract shall observe and abide by all Federal, State, and Local laws which in any way affect the conduct of the work and shall comply with all decrees and orders of courts of competent jurisdiction. The Contractor shall comply fully and completely with any and all applicable State and Federal Statutes, rules and regulations as they relate to hiring, wages, and any other applicable conditions of employment.

## PRE-BID MEETING

No prebid meeting.

## WITHDRAWAL OF PROPOSALS/BIDS

After a bid has been opened, it may not be withdrawn except as provided by Act of January 23, 1974, P.L. 9 No. 4, as same may be amended.

No bids may be withdrawn for a period of ninety (90) days following the formal opening and receipt of bids by the City of Reading.

## BID REJECTION

The City of Reading reserves the right to reject any or all bids and to accept or reject any part of any bid. It also reserves the right to waive any technical defects or minor irregularities, which in its discretion, is in the best interest of the City.

## EXECUTION OF CONTRACT

The successful Bidder shall, within ten (10) calendar days after mailing of contract documents by the City to the Principal, enter into contract with the City on form as included within the bidding documents for the appropriate bonds, indemnities and insurances required hereunder.

The contract, when executed, shall be deemed to include the entire agreement between the parties; the Contractor shall not base any claim for modification of the contract upon any prior representation or promise made by the representatives or the City, or other persons.

All attachments are considered as part of this document.

## METHOD OF PAYMENT

Payments shall be based on an invoice submitted by the General Contractor or approved representative Construction Manager. The City shall have the right to withhold disbursement funds if in the City's opinion construction work for which payment has been requested is of poor workmanship, contrary to any applicable codes and contract specifications, violation of appropriate paperwork requirements that are not up to date and approved for this billing period, General Contractor fails to comply with this Agreement, or for other conditions or circumstances which the City deems not to be in the best interest of the public.

Ten percent (10%) of each General Contractor invoice request shall be retained by the City on this contract until it is completed up to City codes and contract specifications and approved by a City Official or person representing a City Official (Architect or Engineer).

## ACCESS TO ACCOUNTING RECORDS

The contractor shall certify that all materials, equipment, and labor charged to the City are accounted for and shall keep such full and detailed accounts as may be necessary for proper financial management under this Agreement. The City or its representative shall be afforded access the all the Contractor's records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to this Contract, and the Contractor shall preserve all such records for a period of three (3) years, or for such longer period as may be required by law, after the final payment.

## ASSIGNMENT OF REFUND RIGHTS

The City is not subject to federal, state, or local sales or use tax or federal excise tax. Contractor hereby assigns to City all of its rights, title, and interest in any sales or use tax which may be refunded as a result of the purchase of any materials purchased in connection with the Contract and Contractor, unless directed by the City, shall not file a claim for any sales or use tax refund subject to this assignment. Contractor authorizes the City, in its own name or the name of the Contractor, to file a claim for a refund of any sales or use tax subject to this assignment.

## CONTRACTS WITH SUBCONTRACTORS

The Contractor agrees to include the above references paragraphs in any contract with subcontractors and to provide proof thereof to the City of Reading if requested.

## NOTICE TO PROCEED

The Contractor shall begin work on the job site within ten (10) days after receiving Notice to Proceed from the City.

## DISCONTINUANCE OF WORK

Any practice obviously hazardous as determined by the City shall be immediately discontinued by the Contractor upon receipt of either written or oral notice to discontinue such practice.

## CONTRACT TERMINATION

The City shall have the right to terminate a contract or a part thereof before the work is completed in the event:

1. Previous unknown circumstances arise making it desirable in the public interest to void the contract.
2. The contractor is not adequately complying with the specifications.
3. The contractor refuses, neglects, or fails to supply properly trained or skilled supervisory personal and/or workers or proper equipment.
4. The contractor in the judgment of the City is unnecessarily or willfully delaying the performance and completion of the work.
5. The contractor refuses to proceed with work when and as directed by the City.
6. The contractor abandons the work.

Contractors who have questions concerning various aspects of this Contract should contact the following persons:

## QUESTIONS REGARDING SPECIFICATIONS OR BID PROCESS

To ensure fair consideration for all bidders, the City prohibits communication to or with any department or division manager or employee during the bid process with the exception of those questions relative to interpretation of specifications of the bid process. Such questions shall be submitted to Purchasing via [www.pennbid.procurement.com](http://www.pennbid.procurement.com) by 2:00pm on April 13, 2020. Responses to questions shall be issued to all bidders in the form of a written addendum no later than April 20, 2020.

**Notice: Payment of invoices are subject to the terms and conditions of the sources of funding for this project.**

THE FOLLOWING INSTRUCTIONS FOR CONTRACTORS REGARDING AFFIRMATIVE ACTION ARE PROVIDED FOR INFORMATION PURPOSES. THE SUCCESSFUL BIDDER ASSUMES THE OBLIGATION TO TAKE WHATEVER AFFIRMATIVE ACTIONS ARE NECESSARY TO ASSURE EQUAL EMPLOYMENT OPPORTUNITY IN ALL ASPECTS OF EMPLOYMENT, IRRESPECTIVE OF RACE, COLOR, CREED, OR NATIONAL ORIGIN.

**NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION  
TO ENSURE EQUAL EMPLOYMENT  
OPPORTUNITY (EXECUTIVE ORDER 11246, AS AMENDED)**

(1) The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.

(2) The goals are timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Timetables	Goals for Minority Participation in Each Trade	Goals for Female Participation for Each Trade
Until Further Notice	2.5% for all trades	6.9% for All Trades

These goals are applicable to all the Contractor's construction work (whether or not it is federal or federally-assisted) performed in the covered area.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

(3) **THE CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO THE DIRECTOR OF THE OFFICE OF FEDERAL CONTRACT COMPLIANCE PROGRAMS WITHIN 10 WORKING DAYS OF AWARD OF ANY CONSTRUCTION SUBCONTRACT IN EXCESS OF \$10,000 AT ANY TIER FOR CONSTRUCTION WORK UNDER THE CONTRACT RESULTING FROM THIS SOLICITATION. THE NOTIFICATION SHALL LIST THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE SUBCONTRACTOR; EMPLOYER IDENTIFICATION NUMBER; ESTIMATED DOLLAR AMOUNT OF THE SUBCONTRACT; ESTIMATED STARTING AND COMPLETION DATES OF THE SUBCONTRACT; AND, THE GEOGRAPHICAL AREA IN WHICH THE CONTRACT IS TO BE PERFORMED.**

*OFFICE OF FEDERAL CONTRACT COMPLIANCE PROGRAMS  
THE CURTIS CENTER SUITE 750 WEST  
170 SOUTH INDEPENDENCE MALL WEST  
PHILADELPHIA, PA 19106-3309  
PHONE (215) 861-5764*

As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is the City of Reading, Pennsylvania.

State of \_\_\_\_\_ )  
County of \_\_\_\_\_ ) ss.

I, \_\_\_\_\_, Notary Public, being duly sworn, deposes and says that he  
is \_\_\_\_\_ of \_\_\_\_\_,  
(Name of Organization)  
and that the answers to the foregoing questions and all statements therein contained are true and  
correct.

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

\_\_\_\_\_  
NOTARY PUBLIC

My Commission Expires:

DOCUMENTS TO BE SUBMITTED WITH BID

## PROPOSAL

Proposal of:

Name:

Address:

TO: Mayor  
City of Reading  
815 Washington Street  
Reading, PA 19601

Dear Mayor Moran:

In conformity with City Plans and specifications, all as prepared by the Community Development Department and after an examination of the site of the work, and the Contract Documents, including the instructions to Bidders, Form of Proposal, Bid Bond and Conditions, the undersigned submits this proposal, and encloses herewith as proposal guaranty, a Certified or Treasurer's Check, or Bid Bond, in an amount not less than ten percent (10%) of the bid herein submitted, which it is understood will be forfeited if this proposal is accepted by the City of Reading, and the undersigned fails to furnish approved bonds and execute the contract within the time stipulated; otherwise, the guarantee will be returned.

The undersigned declares that no Member of Council, Director of Department, Division Manager, deputy thereof or clerk therein, or other officer of the City of Reading, is directly or indirectly interested as principal, surety or otherwise in this proposal or has any supervision or overall responsibility for the implementation in administration of the contract.

It is certified that the undersigned is the only person(s) interested in this proposal as principal and that the proposal is made without collusion with any person, firm, or corporation.

It is hereby agreed to execute the contract and furnish surety company bonds, on the forms enclosed in the Contract Documents, in the amount of one hundred percent (100%) of the contract price within ten (10) days of mailing of the contract documents from the City to the Principal, and to begin work within ten (10) days after receipt of Notice to Proceed from the City of Reading.

It is proposed to furnish and deliver all materials, tools, equipment, power, tests and transportation, perform all labor, superintendence, and all means of construction, and do all incidental work, and to execute, construct and finish in an expeditious and workman-like manner, in accordance with the plans and specifications, to the satisfaction and acceptance of the Department of Community Development of the City of Reading and its Engineer as stated on the attached Bid Form.

**BID FORM**

Schlegel Park Pool  
City of Reading, Berks County Pennsylvania

Contract 1 – General Construction

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**ARTICLE 1 – BID RECIPIENT**

1.01 This Bid is submitted to:

City of Reading  
815 Washington Street  
Reading, Pennsylvania 19601

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

**ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS**

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the Bid opening, unless award is delayed by a required approval from a government agency, the sale of bonds, or the award of a grant, in which event, the Bids shall remain open for a period of one hundred twenty (120) calendar days from the date of bid opening. The Owner will either award the contract within the applicable time period or reject all Bids, returning the Bid Security to the Bidders. A thirty (30) day time extension of the date for the award may be made by the mutual written consent of the Owner and the lowest responsible, responsive Bidder.

2.02 Bidder will sign and submit the Agreement along with the Bonds and other documents requires by the Bidding Requirement within the time period indicated in the Notice of Award.

**ARTICLE 3 – BIDDER’S REPRESENTATIONS**

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda:

<u>Addendum No.</u>	<u>Addendum, Date</u>
_____	_____
_____	_____
_____	_____
_____	_____

B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions,

especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

- E. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs.
- F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by Engineer is acceptable to Bidder.
- I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.
- J. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

#### **ARTICLE 4 – BIDDER'S CERTIFICATION**

4.01 Bidder certifies that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over Owner, and
- E. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.E:
  - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process;

2. “fraudulent practice” means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
3. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
4. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

**ARTICLE 5 – BASIS OF BID**

- 5.01 Bidder will complete the Work in accordance with the Contract Documents for the following Lump Sum and Unit Price(s):

SCHEDULE OF PRICES

	<u>Description</u>	<u>Units</u>	<u>Estimated Quantity</u>	<u>Bid Unit Price</u>	<u>Bid Price</u>
1.	Bonds and Insurance	LS	1		
2.	Mobilization and Demobilization	LS	1		
3.	Testing Allowance	LS	1	\$10,000	\$10,000
4.	Installation and Maintenance of Erosion and Sediment Control Measures.	LS	1		
5.	Select Demolition of Pool Deck and Stormwater Features.	LS	1		
6.	Relining of Pool Interior, including select demolition, repairs and finishes, including tile and plaster coatings, per plans.	LS	1		
7.	Select demolition and installation of new gutter line, gutter piping, and return piping, including connection to existing piping.	LS	1		
8.	Removal and installation of new electrical bonding.	LS	1		
9.	Installation of new pool deck.	SY	907		
10.	Installation of pool deck trench drain.	LF	642		
11.	Installation of Catch Basin, 24" and 30" Diameter	EA	2		
12.	Installation of Stormwater Pipe, including 4", 8", 10", 14", and 18" pipes and connecting to existing manhole.	LF	513		
13.	Allowance for Miscellaneous work ordered by the Owner and/or Engineer	LS	1	\$25,000	\$25,000

The following items of Work are EXTRA items. They are not part of the scope of work for this project as described on the plans and specifications. They shall only be provided by the Contractor and paid the Owner if so directed in writing by the Engineer. The EXTRA Work items are included in the Total Bid Price. They will be used in determining the low bidder and awarding the Contract.

	<u>Description</u>	<u>Units</u>	<u>Estimated Quantity</u>	<u>Bid Unit Price</u>	<u>Bid Price</u>
14.	Demolition and Installation of New Wading Pool.	LS	1		\$

---

**Total of All Lump Sum and Unit Price Items 1 through 14 equals the Total Bid Price** \$ \_\_\_\_\_

---

Total Amount of Bid in written words

The Contract will be awarded to the responsive Bidder with the lowest Total Bid Price of all Lump Sum and Unit Price bid items.

Bidder acknowledges that (1) each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor’s overhead and profit for each separately identified item, and (2) estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

The use of the word “complete” or “in place” in the Schedule of Prices shall be understood to mean the item of Work includes all labor, materials, tools, equipment, excavation (regardless of material encountered), backfill, restoration, reseeding and incidental work necessary to complete the item.

All specified cash allowances are included in the price(s) set forth above, and have been computed in accordance with Paragraph 13.02 of the General Conditions.

**ARTICLE 6 – TIME OF COMPLETION**

- 6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

**ARTICLE 7 – ATTACHMENTS TO THIS BID**

- 7.01 The following documents are submitted with and made a condition of this Bid:
  - A. Required Bid security; if Bid Bond use only the two page form included with the Bidding Documents;
  - B. Noncollusion Affidavit;
  - C. Required Bidder Qualification Statement with supporting data; and

**ARTICLE 8 – DEFINED TERMS**

8.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

**ARTICLE 9 – BID SUBMITTAL**

BIDDER: *[Indicate correct name of bidding entity]*

\_\_\_\_\_  
By:  
*[Signature]* \_\_\_\_\_

*[Printed name]* \_\_\_\_\_  
*(If Bidder is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.)*

Attest:  
*[Signature]* \_\_\_\_\_

*[Printed name]* \_\_\_\_\_

Title: \_\_\_\_\_

Submittal Date: \_\_\_\_\_

Address for giving notices:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Telephone Number: \_\_\_\_\_

Fax Number: \_\_\_\_\_

Contact Name and e-mail address: \_\_\_\_\_  
\_\_\_\_\_

Bidder's License No.: \_\_\_\_\_  
*(where applicable)*

++ END OF BID FORM ++  
FORM OF BID BOND

BOND

KNOW ALL MEN BY THESE PRESENTS that we, the undersigned,

\_\_\_\_\_, as Principal (the "Principal"), and \_\_\_\_\_

a corporation organized and existing under laws of the \_\_\_\_\_ of \_\_\_\_\_, as

Surety (the "Surety"), are held and firmly bound unto \_\_\_\_\_ as

Obligee (the "Obligee"), as hereinafter set forth, in the full and just sum of

\_\_\_\_\_ Dollars

(\$\_\_\_\_\_),

lawful money of the United States of America, for the payment of which sum we bind ourselves, our

heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WITNESSETH THAT:

WHEREAS, the Principal herewith is submitting a Proposal to the Obligee to perform the \_\_\_\_\_ Work in connection with the construction of \_\_\_\_\_ pursuant to plans, specifications and other documents constituting the Contract Documents which are incorporated into said Proposal by reference (the "Contract Documents"), as prepared by the Department of Public Works, City Hall, 815 Washington Streets, Reading, PA 19601-3690.

WHEREAS, it is a condition of the receipt and consideration by the Obligee of said Proposal that it shall be accompanied by proposal guaranty to be held by the Obligee on terms hereinafter set forth.

NOW, THEREFORE, the condition of this Bond shall be such that, if the Principal, within ten (10) days after mailing of contract document by the City to Principal, shall furnish to the Obligee a Performance Bond, Payment Bond and a Wage Rate Compliance Bond, and upon award of a contract to him by the Obligee, shall execute and deliver the Agreement and furnish to the Obligee proper evidence of effectiveness of insurance coverage, respectively within the time, in the forms and in the amounts, as appropriate, required by the Contract Documents, then this Bond shall be void, otherwise, this Bond shall remain in full force and effect.

The Principal and the Surety agree to pay to the Obligees the difference between the amount of said Proposal, as accepted by the Obligees, and any higher amount for which the required work shall be contracted for by the Obligees, together with any additional advertising costs, architect's fees, legal fees and any all other fees and expenses incurred by the Obligees by reason of the failure of the Principal to enter into such Agreement with the Obligees, or to furnish such Contract Bonds, or to furnish evidence of effectiveness of such insurance coverage; provided, however, that (1) the obligation of the Surety shall not exceed the stated principal amount of this Bond; and (2) if the Obligees should not procure an executed contract with any other person for the performance of the work contemplated in said Proposal, as accepted by the Obligees, upon the same terms and conditions, other than price, as provided in the Contract Documents, within the period provided in the Contract Documents during which no proposals of bidders may be withdrawn, whether because of the lack of other proposals, or because of the inability or refusal of any other bidder to enter into an appropriate contract, or because the cost under any higher proposal would be greater than the Obligees shall determine, in its sole discretion, that it can afford, then the Principal and the Surety agree to pay to the Obligees the full amount of this Bond as liquidated damages.

IN WITNESS WHEREOF, the Principal and the Surety cause this Bond to be signed, sealed and delivered this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

(INDIVIDUAL PRINCIPAL)

\_\_\_\_\_  
(Signature of Individual) (Seal)

Witness:

\_\_\_\_\_

Trading and Doing Business as:

\_\_\_\_\_

(PARTNERSHIP PRINCIPAL)

(PARTNERSHIP PRINCIPAL)

\_\_\_\_\_  
(Name of Partnership) (Seal)

Witness:

\_\_\_\_\_

By: \_\_\_\_\_ (Seal)  
(Partner)

Witness:

\_\_\_\_\_

By: \_\_\_\_\_  
(Partner)

(Seal)

Witness:

\_\_\_\_\_

By: \_\_\_\_\_  
(Partner)

(Seal)

Witness:

\_\_\_\_\_

By: \_\_\_\_\_ (Seal)  
(Partner)

(CORPORATION PRINCIPAL)

(Name of Corporation)

\_\_\_\_\_

(Vice) President

By: \_\_\_\_\_

Attest:

\_\_\_\_\_

(Assistant Secretary)

(Corporate Seal)

(OR, IF APPROPRIATE)

(Name of Corporation)

\_\_\_\_\_

(Authorized Representative)

By: \_\_\_\_\_

Signed \_\_\_\_\_

\_\_\_\_\_

(Title)

Subscribed and sworn to before me on

this \_\_\_ day of \_\_\_\_\_, 20 \_\_\_

\_\_\_\_\_

\_\_\_\_\_

(Title)

My Commission Expires:

\_\_\_\_\_

(CORPORATION SURETY)

(Name of Corporation)

\_\_\_\_\_

(Attorney-In-Fact)

By: \_\_\_\_\_

Witness:

\_\_\_\_\_

(Corporate Seal)

\*\* Attach an appropriate Power of Attorney, valid and in effect as of the date of this affidavit, evidencing the authority of the Attorney-In-Fact to act in behalf of the corporation.

## NON-COLLUSION AFFIDAVIT

### INSTRUCTIONS FOR NON-COLLUSION AFFIDAVIT

This Non-Collusion Affidavit is material to any contract pursuant to this bid. According to the Pennsylvania Antbid-Rigging Act, 73 P.S. 1611 et seq., governmental agencies may require Non-Collusion Affidavits to be submitted together with bids.

This Non-Collusion affidavit must be executed by the member, officer, or employee of the bidder who is authorized to legally bind the bidder.

Bid rigging and other efforts to restrain competition, and the making of false sworn statements in connection with the submission of bids are unlawful and may be subject to criminal prosecution. The person who signs the Affidavit should examine it carefully before signing and assure himself or herself that each statement is true and accurate, making diligent inquiry, as necessary, of all other persons employed by or associated with the bidder with responsibilities for the preparation, approval, or submission of the bid.

In the case of a bid submitted by a joint venture, each party to the venture must be identified in the bid documents, and an Affidavit must be submitted separately on behalf of each party.

The term "complementary bid" as used in the Affidavit has the meaning commonly associated with that term in the bidding process, and includes the knowing submission of bids higher than the bid of another firm, any intentionally high or noncompetitive bid, and any form of bid submitted for the purpose of giving a false appearance of competition.

Failure to file an Affidavit in compliance with these instructions will result in disqualification of the bid.

NON-COLLUSION AFFIDAVIT OF PRIME BIDDER

State of \_\_\_\_\_

County of \_\_\_\_\_

\_\_\_\_\_, being first duly sworn, deposes and says that:

He/She is \_\_\_\_\_(Owner, Partner, Officer, Representative or Agent) of \_\_\_\_\_, the Bidder that has submitted the attached Bid or Bids;

He/She is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;

Such Bid is genuine and is not a collusive or sham Bid;

Neither the said Bidder nor any of its officers; partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly, with any other Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication of conference with any other Bidder, firm or person to fix the price or prices in the attached Bid or of any other Bidder, or to fix any overhead, profit or cost element of the Bid price or the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the City of Reading or any person interested in the proposed Contract;

The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant; and,

Neither the said Bidder nor any of its officers, partners, owners, agents or parties in interest, have any interest, present or prospective, that can be reasonably construed to result in a conflict of interest between them and the City of Reading, which the Bidder will be required to perform.

I state that \_\_\_\_\_ understands  
(Name of Firm)

and acknowledges that the above representations are material and important, and will be relied on by the City of Reading in awarding the contract(s) for which this bid is submitted. I understand and my firm understands that any misstatement in this affidavit is and shall be treated as fraudulent concealment from the City of Reading of the true facts relating to the submission of bids for this contract.

\_\_\_\_\_  
(Name and Company Position)

SWORN TO AND SUBSCRIBED  
BEFORE ME THIS \_\_\_\_\_  
DAY OF \_\_\_\_\_, 20\_\_

\_\_\_\_\_  
Notary Public

My Commission Expires

**PROVIDER'S CERTIFICATION OF NON-INDEBTEDNESS  
TO THE CITY OF READING**

Provider hereby certifies and represents that Provider and Provider's parent company(ies) and subsidiary(ies) are not currently indebted to the City of Reading (the "City"), and will not at any time during the term of this Contract (including any extensions or renewals thereof) be indebted to the City, for or on account of any delinquent taxes, liens, judgments, fees or other debts for which no written agreement or payment plan satisfactory to the City has been established. In addition to any other rights or remedies available to the City at law or in equity, Provider acknowledges that any breach or failure to conform to this certification may, at the option of the City, result in the withholding of payments otherwise due to Provider and, if such breach or failure is not resolved to the City's satisfaction within a reasonable timeframe specified by the City in writing, may result in the offset of any such indebtedness against said payments and/or the termination of this Contract for default (in which case Provider shall be liable for all excess costs and other damages resulting from the termination).

\_\_\_\_\_  
NAME OF PROVIDER

By: \_\_\_\_\_  
AUTHORIZED SIGNATORY

Title: \_\_\_\_\_  
PRESIDENT OR VICE PRESIDENT

Attest: \_\_\_\_\_

RESOLUTION NO. 192-92

WHEREAS, reportedly, twenty-five cement manufacturing facilities in the United States are currently burning well over two billion pounds a year of hazardous waste as a source of fuel and additional profit in the cement manufacturing process; and

WHEREAS, approximately twenty cement manufacturing facilities are seeking permission to start this practice; and

WHEREAS, sufficient data and evidence as to the safety of cement products made from hazardous waste has not been proven; and

WHEREAS, it is in the best interest of the citizens of the City of Reading in regard to their health and quality of life that cement derived from hazardous waste be banned from any City projects.

NOW, THEREFORE, the Council of the City of Reading resolves that the City of Reading will not purchase cement from any facility that burns hazardous waste as fuel in its manufacturing process, nor allow the use of concrete made from this type of cement. This policy shall be reflected in city bid specifications.

PASSED COUNCIL April 1, 1993

WARREN H. HAGGERTY, JR.  
Mayor

ATTEST:

RUTH M. THOMPSON  
City Clerk

STATEMENT REGARDING MANUFACTURE OF CEMENT

The following statement is to be signed by an authorized officer of the company.

The undersigned contractor hereby certifies in accordance with City of Reading Resolution #192-92, that any cement used in performance of this contract shall not have been manufactured by a process using hazardous materials, as defined by the Environmental Protection Agency, in the manufacture and makeup thereof.

CONTRACTOR

By: \_\_\_\_\_

Title: \_\_\_\_\_

ATTEST:

\_\_\_\_\_

STATEMENT OF BIDDER'S QUALIFICATIONS

All questions must be answered and the data given must be clear and comprehensive. This statement must be notarized. If necessary, questions may be answered on separate attached sheets. The Bidder may submit any additional information he desires.

1. Name of Bidder: \_\_\_\_\_
2. Permanent main office address: \_\_\_\_\_
3. When organized: \_\_\_\_\_
4. If a corporation, where incorporated: \_\_\_\_\_
5. How many years have you been engaged in the contracting business under your present firm or trade name: \_\_\_\_\_
6. Contracts on hand: (Schedule these on an attached sheet, showing amount of each contract and the appropriate anticipated dates of completion.)
7. Have you ever failed to complete any work awarded to you? If so, where and why?  
\_\_\_\_\_
8. Have you ever defaulted on a contract ? \_\_\_\_\_. If so, where and why?  
\_\_\_\_\_
9. List the more important projects recently completed by your company on an attached sheet, stating the approximate cost of each, and the month and year completed.
10. List your major equipment available for this contract.  
\_\_\_\_\_  
\_\_\_\_\_
11. Describe experience in construction work similar in importance to this project on an attached sheet. Contractor must be able to show at least 10 years' experience working on public pool systems to qualify for this bid.

12. Background and experience of the principal members of your organization, including the officers.

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13. Credit available: \$ \_\_\_\_\_

14. Give Bank reference: \_\_\_\_\_

15. Will you, upon request, fill out a detailed financial statement and furnish any other information that may be required by the City? \_\_\_\_\_

16. (A) Have you ever been a party to or otherwise involved in any action or legal proceeding involving matters related to race, color, nationality or religion? \_\_\_\_\_ If so, give full details.

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(B) Have you ever been accused of discrimination based upon race, color, nationality or religion in any action or legal proceeding including any proceeding related to any Federal Agency? \_\_\_\_\_ If so, give full details \_\_\_\_\_

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17. All prospective bidders are required to present proof of an acceptable disposal method approved by the Pennsylvania Department of Environmental Protection. The proof may consist of a copy of a State Solid Waste Disposal Permit issued to the prospective bidder by the Pennsylvania Department of Environmental Protection, or a letter of approval from the Pennsylvania Department of Environmental Protection for the use of a proposed or existing disposal facility which has a permit or is under review for a permit. Same to be in accordance with Section 7 (a) application and permits, Pennsylvania Solid Waste Management - "Act 241."

18. The undersigned hereby authorizes and requests any person, firm or corporation to furnish any information requested by the "City of Reading" in verification of the recitals comprising this Statement of Bidder's Qualifications.

19. Name, address, phone number, and contact person at surety company who will provide bonding for this contract:

\_\_\_\_\_  
\_\_\_\_\_

20. Name, address, phone number, and contact person at insurance company who will provide insurance coverage for this contract:

\_\_\_\_\_  
\_\_\_\_\_

21. The undersigned hereby authorizes any person, firm or corporation to furnish any information requested by the City of Reading in verification of the recitals comprising this Statement of Bidder's Qualifications.

DATED at \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
(NAME OF BIDDER)

BY: \_\_\_\_\_

TITLE: \_\_\_\_\_



6. If an individual or a partnership, give the:
  - A. Date or organization:
  - B. Name and address of all partners (state whether general or limited partnership):
7. If other than a corporation or partnership, describe your organization and name all principals or owners:
8. List states and categories in which your organization is legally qualified to do business giving all registration or license numbers.
9. List states in which partnership or trade name is filed.
10. List the types of work normally performed by your own forces.
11. Have you ever failed to complete any work awarded to you? If so, note when, where, and why:
12. Within the last five years, has any owner, officer or partner of your organization ever been an owner, officer or partner of another organization when it failed to complete a construction contract? If so, attach a separate sheet of explanation.
13. On a separate sheet, list major construction projects your organization has in process, giving the name or project, owner, architect, contract amount, percent complete, and scheduled completion date.
14. On a separate sheet, list the major projects your organization has completed in the past five years, giving the name of project, owner, architect, contract amount, date of completion, and percentage of the cost of the work performed with your own forces.

15. On a separate sheet, list the construction experience of the key individuals of your organization.
16. Trade References:
17. Bank References:
18. Name of Bonding Company and name and address of agent:
19. Attach a financial statement, audited if available, including Contractor's latest balance sheet and income statement showing the following items:
  - A. Current Assets (e.g., cash, joint venture accounts, accounts receivable, notes receivable, accrued income, deposits, materials inventory and prepaid expenses):
  - B. Net Fixed Assets:
  - C. Other Assets:
  - D. Current Liabilities (e.g., accounts payable, notes payable, accrued expenses, provision for income taxes, advances, accrued salaries, and accrued payroll taxes):
  - E. Other Liabilities (e.g., capital, capital stock, authorized and outstanding shares per values, earned surplus, and retained earnings):

Name of firm preparing financial statement and date thereof:

Is this financial statement for the identical organization named on page 00420-1?

If not, explain the relationship and financial responsibility of the organization whose financial statement is provided (e.g., parent-subsidary).

Will this organization act as guarantor of the contractor for construction?

Dated at \_\_\_\_\_ this \_\_\_\_ of \_\_\_\_\_, 20\_\_.

Name of Organization: \_\_\_\_\_

BY: \_\_\_\_\_

TITLE: \_\_\_\_\_

Subscribed and sworn before me this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

Notary Public:

My Commission Expires:

## EQUAL EMPLOYMENT OPPORTUNITY AND SECTION 3 QUESTIONNAIRE

(Please complete the following information and answer all questions; use an attached sheet as necessary.)

1. (a) Contractor: How many persons from the City of Reading \_\_\_\_\_, low income City residents \_\_\_\_\_, and minorities: \_\_\_\_\_ Black, \_\_\_\_\_ Hispanic, \_\_\_\_\_ White, \_\_\_\_\_ Asian/Pacific Islander, \_\_\_\_\_ Other, are on your present basic payroll?  
  
(b) Subcontractor: How many persons from the City of Reading \_\_\_\_\_, low income City residents \_\_\_\_\_, and minority groups: \_\_\_\_\_ Black, \_\_\_\_\_ Hispanic, \_\_\_\_\_ White, \_\_\_\_\_ Asian/Pacific Islander, \_\_\_\_\_ Other, are on your present basic payroll?
  
2. How many City of Reading residents \_\_\_\_\_, low income City residents \_\_\_\_\_, and minorities: \_\_\_\_\_ Black, \_\_\_\_\_ Hispanic, \_\_\_\_\_ White, \_\_\_\_\_ Asian/ Pacific Islander, \_\_\_\_\_ Other, are presently in training programs run by your company, your subcontractors, and associations to which you or your subcontractors may belong or with unions with which you and your subcontractors have collective bargaining agreements?  
  
\_\_\_\_\_
  
3. Does your firm, subcontractors, associations to which you or they belong or unions with which you or your subcontractors have collective bargaining agreements a definite plan for creating career situations, training and employment for residents of the City of Reading, low income citizens, and minorities? \_\_\_\_\_. If so, please include a copy of the plan with your formal bid and specify the number of individuals (from the groups referred to previously), to be placed in apprenticeship or other training situations. When is the program scheduled to begin?\_\_\_\_\_ What portion of the program is already in operation?
  
4. What plans does your firm have to utilize business concerns located in, or owned in substantial part by persons residing in the City?

CERTIFICATION OF NON-SEGREGATED FACILITIES

The Bidder certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments and that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The Bidder certifies further that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and that 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 rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms and other storage or dressing 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 or national origin, because of habit, local custom or otherwise. The Bidder agrees that (except where he 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 certifications in his files.

Note: The penalty for making false statement in offers is prescribed in 18 U.S.C. 1001.

DATE: \_\_\_\_\_,

BY: \_\_\_\_\_  
(NAME OF BIDDER) (TITLE)

OFFICIAL ADDRESS:

CONTRACTOR'S STATEMENT FOR PUBLIC DISCLOSURE \*

1. a/ Name of Contractor:  
b/ Address and Zip Code of Contractor:
  
2. If the Contractor is not an individual doing business under his own name, the Contractor has the status indicated below and is organized or operating under the laws of \_\_\_\_\_:  
\_\_\_\_ a corporation  
\_\_\_\_ a partnership known as:  
\_\_\_\_ a business association or a joint venture known as:  
\_\_\_\_ a Federal, State or Local government or instrumentality thereof  
\_\_\_\_ other (explain)
  
3. If the Contractor is not an individual or a government agency or instrumentality, give date of organization: \_\_\_\_\_
  
4. Names, addresses, title of position (if any), and nature and extent of the interest of the officers and principal members, shareholders, investors other than a government agency or instrumentality, are set forth as follows:
  - a/ If the Contractor is a corporation, the officers, directors, trustees, and each stockholder owning more than 10% of any share of stock.
  - b/ If the Contractor is a partnership, each partner, whether a general or limited partner, and either the percent of interest or a description of the character and extent of interest.
  - c/ If the Contractor is a business association or a joint venture, each participant and either the percent of interest or a description of the character and extent of interest.
  - d/ If the Contractor is some other entity, the officers, the members of the governing body, and each person having an interest of more than 10%.

\* If space on this form is inadequate for any requested information, this should be furnished on an attached page which is referred to under the appropriate numbered item on the form.

NAME, ADDRESS & ZIP CODE	POSITION TITLE (if any) AND PERCENT OF INTEREST OR DESCRIPTION OF <u>CHARACTER AND EXTENT OF INTEREST</u>
5.	Name, address and nature and extent of interest of each person or entity (not named in response to Item 4) who has a beneficial interest in any of the shareholders or investors named in response to Item 5 which gives such person or entity more than a computed 10% interest in the Contractor (for example, more than 20% of the stock in a corporation which holds 50% of the stock of the Contractor, or more than 50% of the stock in a corporation which holds 20% of the stock of the Contractor).

NAME, ADDRESS & ZIP CODE	<u>DESCRIPTION OF CHARACTER AND EXTENT OF INTEREST</u>
6.	Names (if not given above) of officers and directors or trustees of any corporation or firm listed under Item 4 or Item 5 above:
7.	Is the Contractor a subsidiary of or affiliated with any other corporation or any other firm or firms? ___ YES ___ NO. If yes, list each such corporation or firm by name and address, specify its relationship to the Contractor, and identify the officers and directors or trustees common to the Contractor and such other corporation or firm:
8.	Other federal grant projects under Title I of the Housing and Community Development Act of 1974 (CP.L.93-383), as amended, in which the Contractor or any of the principals of the Contractor is or has been the contractor, or a stock-holder, officer, director or trustee, or partner of such a contractor:
9.	If the Contractor or a parent corporation, a subsidiary, an affiliate or a principal of the Contractor is to participate in the work or services as a Subcontractor or consultant:  a/ Name and address of such Subcontractor or consultant:  b/ Has such Subcontractor within the last 10 years ever failed to qualify as a responsible bidder, refused to enter into a contract after an award has been made, or failed to complete a contract? ___ YES ___ NO. If yes, explain:

c/ Outstanding contract bids of such Subcontractor or consultant:

<u>Awarding Agency</u>	<u>Amount</u>	<u>Date Opened</u>
	\$	

10. Brief statement respecting equipment, experience, financial capacity, and other resources available to such Subcontractor or consultant for the performance of the work or services involved in the contract, specifying particularly the qualifications of the personnel, the nature of the equipment, and the general experience of the Subcontractor or consultant.

11. a/ Does any member of the governing body or employee of the Local Public Agency or any officer or employee of the Local Public Agency who exercises any functions or responsibilities in connection with the awarding and/or carrying out of the contract have any direct or indirect personal interest in the Contractor or in the Contractor's performance under the contract? \_\_\_YES \_\_\_NO. If yes, explain:

b/ Does any member of the governing body of the locality in which the Public Improvement Project is situated or any other public official of the locality, who exercises any functions or responsibilities in the review or approval of the awarding and/or carrying out of the contract have any direct or indirect personal interest in the Contractor or in the Contractor's performance under the contract? \_\_\_YES \_\_\_NO. If yes, explain:

**CERTIFICATION**

I (We) \_\_\_\_\_ certify that this Contractor's Statement for Public Disclosure is true and correct to the best of my (our) knowledge and beliefs.

DATED: \_\_\_\_\_

DATED: \_\_\_\_\_

\_\_\_\_\_  
(SIGNATURE)

\_\_\_\_\_  
(SIGNATURE)

\_\_\_\_\_  
(TITLE)

\_\_\_\_\_  
(TITLE)

\_\_\_\_\_  
(ADDRESS & ZIP CODE)

\_\_\_\_\_  
(ADDRESS & ZIP CODE)

1 - If the Contractor is an individual, this Statement should be signed by such individual; if a partnership, by one of the partners; if a corporation or other entity, by one of its chief officers having knowledge of the facts required by this Statement.

2 - Penalty For False Certification: Section 1001, Title 18, of the U.S.C. provides a fine of not more than \$10,000, or imprisonment of not more than five years, or both, for knowingly and willfully making or using any false writing or document, knowing the same to contain any false, fictitious or fraudulent statement or entry in a matter within the jurisdiction of any Department of the United States.

(ONLY AS NEEDED)

CERTIFICATE OF ACKNOWLEDGMENT OF RECEIPT OF ADDENDUM

THE CITY OF READING

ADDENDUM NO. \_\_\_\_\_ TO BID FOR: \_\_\_\_\_

OPENING DATE: \_\_\_\_\_

NOTICE

This addendum must be signed, attached to, and returned with your proposal to the City of Reading by the time and date indicated above. This sheet is now part of the Contract Documents.

I, HEREBY CERTIFY, THAT THE CHANGES COVERED BY THIS ADDENDUM HAVE BEEN TAKEN INTO ACCOUNT WITH THE TOTAL BID PRICE.

Firm Name (Type or Print) \_\_\_\_\_

Authorized Signature \_\_\_\_\_ Title \_\_\_\_\_

Name (Type or Print) \_\_\_\_\_ Date \_\_\_\_\_

CONTRACT DOCUMENTS

C O N T R A C T

NOTE; This contract is not to be filled in until contract is awarded.

THIS AGREEMENT, made and concluded this \_\_\_\_\_ day of \_\_\_\_\_, in the year two thousand and \_\_\_\_\_, by and between the City of Reading, a municipal corporation of the Commonwealth of Pennsylvania, located in the County of Berks, said Commonwealth, party of the first part, and \_\_\_\_\_, Contractor, party of the second part, pursuant to law and to the provisions and requirements of the ordinance of the City of Reading, Pennsylvania.

WITNESSETH, that the parties to these presents, each in consideration of the agreements on the part of the other herein contained, have agreed, and hereby do agree, the party of the first part for itself, its successors and assign, and the party of the second part for itself, himself, or themselves, its successors, or his or their executors and administrators as follows:

CONTRACTOR'S GENERAL AGREEMENT. The Contractor covenant, promises and agrees to and with the party of the first part, for the consideration hereinafter mentioned and contained, and under the penalty expressed in a bond bearing date of \_\_\_\_\_ and hereto attached, to furnish all the material, machinery, equipment, tools, labor and transportation, except as hereinafter otherwise provided, at his own cost, necessary or proper for the purpose of executing the work embraced in this contract in a good, substantial and workmanlike manner, and in strict accordance with the specifications pertaining to this contract a herein contained.

PARTS OF CONTRACT. The Location Map; Notice to Contractors; Bid Instructions; Documents to be Submitted with Bid; Contract Documents; Documents to be Submitted During the Course of the Contract; Wage Rate Determinations; Notice of Preconstruction Requirements and Pre-Construction Conference Questionnaire; Affirmative Action Requirements; General Provisions; Supplementary General Terms and Conditions; Technical Specifications; Supplementary Technical Specifications; and Correspondence and Supportive Documentation shall each form a part of the Contract.

THE CONTRACT SUM. The City shall pay the Contractor for the performance of the Contract, subject to additions and deductions provided therein, in current funds as follows: \_\_\_\_\_ (state here the lump sum amount, unit prices, or both as desired in individual cases.)

Where the quantities originally contemplated are so changed that application of the agreed unit price to the quantity of work performed is shown to create a hardship to the Owner or the Contractor, there shall be an equitable adjustment of the Contract to prevent such hardship.

TIME & MANNER OF DOING WORK. The party of the second part agrees to commence the construction of the work to be done under this contract, immediately upon receiving written notice from the Director of Public Works, or other applicable Director, so to do and to complete the entire work as specified in the technical specifications, it being expressly agreed and understood that the time of beginning, rates of progress and time of completion of the work are essential under this contract. Time is to be considered to be the essence of this contract.

STIPULATED DAMAGES. The Contractor shall begin work within ten (10) days of receipt of written notice from the applicable Director, to do so. If the Contractor fails to complete and finish the work in conformity with the terms and provisions of this Contract within the time hereinbefore specified, he shall pay to the City the sum of Five Hundred Dollars (\$500.00) for each and every day thereafter, including Sundays and holidays, that the finishing of the Contract is delayed, which sum shall be construed as stipulated and liquidated damages and not as a penalty and shall be deducted from the amount due by the terms of the Contract; provided, however, that in case of justifiable delay, the City shall extend the time for completion of said work as provided for in Article G.7, but no extension of time for any reason beyond the time fixed herein for the completion of the work shall be deemed a waiver by the City of the right to abrogate this Contract for abandonment for delay.

LIENS. Neither the final payment nor any part of the retained percentage shall become due until the Contractor, if required, shall deliver to the City a complete release of all liens arising out of this Contract, or receipts in full in lien thereof, and, if required in either case, an affidavit that so far as he has knowledge or information the release and receipts include all the labor and material for which a lien could be filed. If any lien remains unsatisfied after all payments are made, the Contractor shall refund to the City all monies that the latter may be compelled to pay in discharging such a lien, including all costs and a reasonable attorney's fee.

BASIS OF CONTRACT. This contract is founded on \_\_\_\_\_

\_\_\_\_\_  
IN WITNESS WHEREOF, the said City of Reading has caused this Agreement to be executed by its Mayor, and its corporate seal to be hereunto affixed, duly attested by its City Clerk, and the party of the second part.

\_\_\_\_\_  
\_\_\_\_\_  
the day and year first above written.

CITY OF READING

By: \_\_\_\_\_  
Mayor

ATTEST:

\_\_\_\_\_  
City Clerk

Signed and Sealed in the Presence of

\_\_\_\_\_  
CONTRACTOR

\_\_\_\_\_  
PRESIDENT

\_\_\_\_\_  
SECRETARY

PERFORMANCE BOND

Know All Men By These Presents that we, \_\_\_\_\_  
(CONTRACTOR)

hereinafter called the PRINCIPAL, and \_\_\_\_\_  
(SURETY)

hereinafter called the SURETY, a corporation organized and existing under the laws of  
the \_\_\_\_\_ are held and firmly bound unto

\_\_\_\_\_ hereinafter called the OBLIGEE, as hereinafter

set forth, in the full and just sum of \_\_\_\_\_ Dollars

(\$ \_\_\_\_\_), lawful money of the United States of America, for the payment of which sum we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WITNESSETH THAT:

WHEREAS, the PRINCIPAL heretofore submitted to the OBLIGEE a certain PROPOSAL, dated \_\_\_\_\_, 20\_\_\_\_, to perform the WORK for the OBLIGEE, in connection with the \_\_\_\_\_ as set forth in CONTRACT DOCUMENTS.

WHEREAS, the OBLIGEE is a "contracting body" under provisions of Act No. 385 of the General Assembly of the Commonwealth of Pennsylvania, approved by the Governor on December 20, 1967, known and cited as the "Public Works Contractors Bond Law of 1967" (the "Act"); and

WHEREAS, the Act, in Section 3(a), requires that, before an award shall be made to the PRINCIPAL by the OBLIGEE in accordance with the PROPOSAL, the PRINCIPAL shall furnish this BOND to the OBLIGEE, with this BOND to become binding upon the award of the CONTRACT to the PRINCIPAL by the OBLIGEE in accordance with the PROPOSAL; and

WHEREAS, it also is a condition of the CONTRACT DOCUMENTS that this BOND shall be furnished by the PRINCIPAL to the OBLIGEE; and

WHEREAS, under the CONTRACTOR DOCUMENTS, it is provided inter alia, that if the PRINCIPAL shall furnish this BOND to the OBLIGEE, and if the OBLIGEE shall make an award to the PRINCIPAL, in accordance with the PROPOSAL, then the PRINCIPAL and OBLIGEE shall enter into a CONTRACT with respect to performance of the WORK, the form of which CONTRACT is set forth in the CONTRACT DOCUMENTS.

NOW, THEREFORE, the terms and conditions of this BOND are and shall be that if the PRINCIPAL will truly and faithfully comply with and perform the WORK in accordance with the CONTRACT DOCUMENTS, at the time and in the manner provided in the CONTRACT DOCUMENTS, and if the PRINCIPAL shall satisfy all claims and demands incurred in or related to the performance of the WORK by the PRINCIPAL, and if the PRINCIPAL shall indemnify completely and shall hold harmless the OBLIGEE and all of its officers, agents and employees from any and all costs and damages which the OBLIGEE and all of its officers, agents and employees may sustain or suffer by reason of the failure of the PRINCIPAL to do so, and if the PRINCIPAL shall reimburse completely and shall pay to the OBLIGEE any and all costs and expenses which the OBLIGEE and all of its officers, agents or employees may incur by reason of any such default or failure of the PRINCIPAL, then this BOND shall be void; otherwise, this BOND shall remain in force and effect.

This BOND, is executed and delivered under and subject to the Act, to which reference hereby is made.

The PRINCIPAL and the SURETY agree that any alterations, changes and/or additions to the CONTRACT DOCUMENTS, and/or any alterations, changes and/or additions to the WORK to be performed in accordance with the CONTRACT DOCUMENTS, and/or any alterations, changes and/or additions to the CONTRACT , and/or any giving by the OBLIGEE of any extensions of time for the performance of the WORK in accordance with the CONTRACT DOCUMENTS, and/or any act of forbearance of either the PRINCIPAL or the OBLIGEE toward the other with respect to the CONTRACT DOCUMENTS, and/or the reduction of any percentage to be retained by the OBLIGEE as permitted by the CONTRACT DOCUMENTS, shall not release, in any manner whatsoever, the PRINCIPAL and the SURETY, or either of them, or their heirs, executors, administrators, successors and assigns, from liability and obligations under this BOND; and the SURETY, for value received, does waive notice of any such alterations, changes, additions, extensions of time, acts of forbearance and/or reduction of retained percentage.

IN WITNESS WHEREOF, the PRINCIPAL and the SURETY cause this BOND to be signed, sealed and delivered this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

(INDIVIDUAL PRINCIPAL)

\_\_\_\_\_  
(Signature of Individual) (Seal)

Witness:

\_\_\_\_\_

Trading and Doing Business as:

\_\_\_\_\_

(PARTNERSHIP PRINCIPAL)

\_\_\_\_\_ (Seal)  
(Name of Partnership)

Witness:

\_\_\_\_\_

By: \_\_\_\_\_ (Seal)  
(Partner)

Witness:

\_\_\_\_\_

By: \_\_\_\_\_ (Seal)  
(Partner)

Witness:

\_\_\_\_\_

By: \_\_\_\_\_ (Seal)  
(Partner)

(CORPORATION PRINCIPAL)

\_\_\_\_\_  
(Name of Corporation)

By: \_\_\_\_\_  
(Vice) President

Attest:

\_\_\_\_\_  
(Assistant Secretary)

(Corporate Seal)

(OR, IF APPROPRIATE)

(Name of Corporation)

\_\_\_\_\_

(Authorized Representative)

By: \_\_\_\_\_

Signed \_\_\_\_\_

\_\_\_\_\_  
(Title)

(CORPORATION SURETY)

(Name of Corporation)

\_\_\_\_\_

(Attorney-In-Fact)

By: \_\_\_\_\_

Witness:

\_\_\_\_\_

(Corporate Seal)

\*\* Attach an appropriate Power of Attorney, valid and in effect as of the date of this affidavit, evidencing the authority of the Attorney-In-Fact to act in behalf of the corporation.

PAYMENT BOND

Know All Men by These Presents:

That We, \_\_\_\_\_ (CONTRACTOR) hereinafter called the PRINCIPAL, and \_\_\_\_\_ (SURETY) hereinafter called the SURETY, a corporation organized and existing under laws of the \_\_\_\_\_ of \_\_\_\_\_ are held and firmly bound unto \_\_\_\_\_, hereinafter called the OBLIGEE, as hereinafter set forth, in the full and just sum of \_\_\_\_\_ dollar (\_\_\_\_\_), lawful money of the United States of America, for the payment of which we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

Witnesseth That:

WHEREAS, the PRINCIPAL heretofore submitted to the OBLIGEE a certain PROPOSAL, dated \_\_\_\_\_, 20 \_\_, to perform the WORK for the OBLIGEE, in connection with the \_\_\_\_\_ as set forth in the CONTRACT, DOCUMENTS; and \_\_\_\_\_ Public Works, City of Reading, Pennsylvania.

WHEREAS, the OBLIGEE is a "contracting body" under provisions of the Act of the General Assembly of the Commonwealth of Pennsylvania, approved by the Governor on December 20, 1967, known as and cited as the "Public Works Contractors" Bond Law of 1967", P L 869 (the Act"): and

WHEREAS, the Act, in section 3(a), requires that, before an award shall be made to the PRINCIPAL by the OBLIGEE in accordance with the PROPOSAL, the PRINCIPAL shall furnish this BOND to the OBLIGEE, with this BOND to become binding upon the award of a CONTRACT to the PRINCIPAL by the OBLIGEE in accordance with the PROPOSAL: and

WHEREAS, it also is a condition of the CONTRACT DOCUMENTS that this BOND shall be furnished by the PRINCIPAL to the OBLIGEE; and

WHEREAS, under the CONTRACTOR DOCUMENTS, it is provided, inter alia, that if the PRINCIPAL shall furnish this BOND to the OBLIGEE, and if the OBLIGEE shall make an award to the PRINCIPAL in accordance with the PROPOSAL then the PRINCIPAL and the OBLIGEE shall enter into a CONTRACT with respect to performance of the WORK, the form of which CONTRACT is set forth in the CONTRACT DOCUMENTS.

NOW, THEREFORE, the terms and conditions of this BOND are and shall be that if the PRINCIPAL and any SUBCONTRACTOR of the PRINCIPAL to whom any portion of the WORK shall be subcontracted, and if all assignees of the PRINCIPAL and of any such SUBCONTRACTOR, promptly shall pay or shall cause to be paid, in full all money which may be due any claimant supplying labor or materials in the prosecution and performance of the WORK in accordance with the CONTRACT DOCUMENTS, including any amendment, extension or addition to the CONTRACT DOCUMENTS, for material furnished or labor supplied or labor performed, then this BOND shall be void; otherwise, this BOND shall be and shall remain in force and effect.

This BOND, as provided by the Act, shall be solely for the protection of claimants supplying labor or materials to the PRINCIPAL or to any SUBCONTRACTOR of the PRINCIPAL in the prosecution of the WORK covered by the CONTRACT DOCUMENTS, including any amendment, extension or addition thereto. The term "claimant", where used herein and as required by the Act, shall mean any individual, firm, partnership, association or corporation. The phrase "labor or materials", when used herein and as required by the Act, shall include public utility services and reasonable rentals of equipment, but only for periods when he equipment rented is actually used at the site of the WORK covered by the CONTRACT. As required by the Act, the provisions of this BOND shall be applicable whether or not the material furnished or labor performed enters into and becomes a component part of the public building, public work or public improvement contemplated by the CONTRACT DOCUMENTS.

As provided and required by the Act, the PRINCIPAL and the SURETY agree that any claimant, who has performed labor or furnished material in the prosecution of the WORK in accordance with the CONTRACT

DOCUMENTS, including any amendment, extension or addition to the CONTRACT DOCUMENTS, and who has not been paid therefore, in full, before the expiration of ninety (90) days after the last day on which such claimant performed the last of such labor or furnished the last of such materials for which payment is claimed, may institute an action upon this BOND, in the name of the claimant, in assumpsit, to recover any amount due the claimant for such labor or material, and may prosecute such action to final judgment and may have execution upon the judgment; provided, however, that:

(a) Any claimant who has a direct contractual relationship with any SUBCONTRACTOR of the PRINCIPAL, but has no contractual relationship, express or implied, with the PRINCIPAL, may institute an action upon this BOND only if such claimant first shall have given written notice, served in the manner provided in the Act, to the PRINCIPAL, within ninety (90) days from the date upon which such claimant performed in the last of the labor or furnished the last of the materials for which payment is claimed, stating, with substantial accuracy, the amount claimed and the name of the person for whom the WORK was performed or to whom the material was furnished; and

(b) No action upon this BOND shall be commenced after the expiration of one (1) year from the day upon which the last of the labor was performed or material was supplied, for the payment of which such action is instituted by the claimant; and

(c) Every action upon this BOND shall be instituted either in the appropriate court of the County where the WORK is to be performed or of such other County as Pennsylvania statutes shall provide, or in the United States District Court for the district in which the PROJECT, to which the CONTRACT relates, is situated, and not elsewhere.

This BOND is executed and delivered under and subject to the Act, to which reference hereby is made.

The PRINCIPAL and the SURETY agree that any alterations, changes and/or additions to the CONTRACT DOCUMENTS, and/or any alterations, changes and/or additions to the WORK to be performed in accordance with the CONTRACT DOCUMENTS, and/or any alterations, changes and/or additions to the CONTRACT, and/or any given by the OBLIGEE of any extensions of time for the performance of the WORK in accordance with the CONTRACT DOCUMENTS, and/or any act of forbearance of either the PRINCIPAL or the OBLIGEE toward the other with respect to the CONTRACT DOCUMENTS, and/or the reduction of any percentage to be retained by the OBLIGEE as permitted by the CONTRACT DOCUMENTS, shall not release, in any manner whatsoever, the PRINCIPAL and the SURETY, or either of them, or their heirs, executors, administrators, successors and assigns, from liability and obligations under this BOND; and the SURETY for value received, does waive notice of any such alterations, changes, additions, extensions of time, acts of forbearance and/or reduction of retained percentage.

If the PRINCIPAL is a foreign corporation (incorporated under the laws other than those of the Commonwealth of Pennsylvania) then further terms and conditions of this BOND are and shall be that the PRINCIPAL or the SURETY shall not be discharged from liability on this BOND, nor this BOND surrendered until such PRINCIPAL files with the OBLIGEE a certificate from the Pennsylvania Department of Revenue evidencing the payment in full of all bonus taxes, penalties and interest, and a certificate from the Bureau of Employment and Unemployment Compensation of the Pennsylvania Department of Labor and Industry, evidencing the payment of all unemployment compensation, contributions, penalties and interest due the Commonwealth from said PRINCIPAL or any foreign corporation,

SUBCONTRACTOR thereunder or for which liability has accrued but the time for payment has not arrived, all in accordance with provisions of the Act of June 10, 1947, P.L 493, of the Commonwealth of Pennsylvania.

In Witness Whereof, the PRINCIPAL and the SURETY cause this BOND to be signed, sealed and delivered this day \_\_\_\_\_ of \_\_\_\_\_, 20 \_\_\_\_.

(INDIVIDUAL PRINCIPAL)

\_\_\_\_\_ (Seal)  
(Signature of Individual)

Witness:

\_\_\_\_\_

Trading and Doing Business as:

\_\_\_\_\_

(PARTNERSHIP PRINCIPAL)

\_\_\_\_\_ (Seal)  
(Name of Partnership)

Witness:

\_\_\_\_\_

By: \_\_\_\_\_ (Seal)  
(Partner)

Witness:

\_\_\_\_\_

(Seal)

By: \_\_\_\_\_  
(Partner)

Witness:

\_\_\_\_\_

By: \_\_\_\_\_ (Seal)  
(Partner)

Witness:

\_\_\_\_\_

By: \_\_\_\_\_ (Seal)  
(Partner)

(CORPORATION PRINCIPAL)

(Name of Corporation)

\_\_\_\_\_

(Vice) President

By: \_\_\_\_\_

Attest:

\_\_\_\_\_

(Assistant Secretary)

(Corporate Seal)

(OR, IF APPROPRIATE)

(Name of Corporation)

\_\_\_\_\_

(Authorized Representative)

By: \_\_\_\_\_

Signed \_\_\_\_\_

\_\_\_\_\_

(Title)

(CORPORATION SURETY)

(Name of Corporation)

\_\_\_\_\_

(Attorney-In-Fact)

By: \_\_\_\_\_

Witness:

\_\_\_\_\_

(Corporate Seal)

\*\* Attach an appropriate Power of Attorney, valid and in effect as of the date of this affidavit, evidencing the authority of the Attorney-In-Fact to act in behalf of the corporation.

WAGE RATE COMPLIANCE BOND

BOND NO. \_\_\_\_\_

KNOW ALL MEN BY THESE PRESENTS, that \_\_\_\_\_,  
(Contractor)

\_\_\_\_\_, (hereinafter referred  
(Full Address)

to as EMPLOYER), \_\_\_\_\_, Insurance Company, a corporation organized  
(Surety Company)

and existing under the laws of the State of \_\_\_\_\_ (hereinafter referred to as SURETY),

are hereby severally held and firmly bound in the sum of \_\_\_\_\_ Dollars, being 50% of the

estimated or bidded price of the contract, lawful money of the United States of America, unto the City of

Reading, City Hall, 815 Washington Street, Reading, PA, 19601-3690, (hereinafter referred to as CITY), as its  
interests may appear.

NOW THE CONDITION OF THE ABOVE OBLIGATION IS SUCH \_\_\_\_\_ that if Employer and any  
subcontractors shall promptly pay wages due their employees for work performed under an agreement dated  
\_\_\_\_\_, 20\_\_\_\_ (including amendments thereto), between Employer and City based on the  
minimum prevailing wages specified in said Agreement as published by the United States Department of Labor  
and as reflected in a Contract between Employer and City, dated \_\_\_\_\_, 20\_\_, then the above obligation  
shall be void, otherwise it shall remain in full force and effect.

The Surety's obligation under this Bond shall cover payments due as aforesaid for work performed by  
employees during the period commencing \_\_\_\_\_, 20\_\_\_\_, and ending with the completion  
of the project in accordance with a certificate of Completion issuable by the City.

We, the said Employer and Surety, and each of us do bind and oblige ourselves, to the extent of our respective liabilities hereunder, as well as our heirs, executors, administrators, successors and assigns, and every one of them, firmly by these presents.

SIGNED, SEALED, AND DATED this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

(INDIVIDUAL PRINCIPAL)

\_\_\_\_\_  
(Signature of Individual) (Seal)

Witness:

\_\_\_\_\_

Trading and Doing Business as:

\_\_\_\_\_

(PARTNERSHIP PRINCIPAL)

\_\_\_\_\_  
(Name of Partnership) (Seal)

Witness:

\_\_\_\_\_

By: \_\_\_\_\_ (Seal)  
(Partner)

(CORPORATION PRINCIPAL)

(Name of Corporation)

\_\_\_\_\_

(Vice) President

By: \_\_\_\_\_

Attest:

\_\_\_\_\_

(Assistant Secretary)

(Corporate Seal)

(OR, IF APPROPRIATE)

(Name of Corporation)

\_\_\_\_\_

(Authorized Representative)

By: \_\_\_\_\_

(CORPORATION SURETY)

(Name of Corporation)

\_\_\_\_\_

(Attorney-In-Fact)

By: \_\_\_\_\_

Witness:

\_\_\_\_\_

(Corporate Seal)

\*\* Attach an appropriate Power of Attorney, valid and in effect as of the date of this affidavit, evidencing the authority of the Attorney-In-Fact to act in behalf of the corporation.

MAINTENANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that we, \_\_\_\_\_

\_\_\_\_\_ hereinafter called the PRINCIPAL, and  
(CONTRACTOR)

\_\_\_\_\_ hereinafter called the SURETY, a corporation organized and existing  
(SURETY)

under laws of the \_\_\_\_\_ of \_\_\_\_\_, are held and firmly

bound unto \_\_\_\_\_, hereinafter called the OBLIGEE, as hereinafter set (OWNER)

forth, in the full and just sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_),

lawful money of the United States of America, for the payment of which we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents,

WITNESSETH THAT:

Whereas, the PRINCIPAL heretofore submitted to the OBLIGEE a certain PROPOSAL, dated \_\_\_\_\_, 20\_\_ to perform the WORK for the OBLIGEE, in connection with the construction of \_\_\_\_\_ as set forth in the

CONTRACT DOCUMENTS as prepared by the CITY OF READING.

Now, therefore, the condition of this BOND shall be such that: If the PRINCIPAL shall remedy, without cost to the OBLIGEE, all defects which may develop during the period of one (1) year from the date of completion by the PRINCIPAL and final acceptance of the OBLIGEE of the WORK performed in accordance with the CONTRACT DOCUMENTS, which defects, in the sole judgment of the OBLIGEE, shall be caused by or shall result from defective or inferior materials or workmanship, and if the PRINCIPAL shall satisfy all claims and demands arising from or related to such defects or growing out of such defects. and if the PRINCIPAL shall indemnify completely and shall save harmless the OBLIGEE from any and all costs and damages which the OBLIGEE may sustain or suffer by reason of the failure so to do; and if the PRINCIPAL shall reimburse completely and shall pay to the OBLIGEE any and all costs and expenses which the OBLIGEE may incur by reason of anv such default or failure of the PRINCIPAL, then this BOND shall be void; otherwise, this BOND shall be and shall remain in full force and effect.

The PRINCIPAL and the SURETY agree that any alterations, changes and/or additions to the CONTRACT DOCUMENTS, and/or any alterations, changes and/or additions to the WORK to be performed in accordance with the CONTRACT DOCUMENTS, and/or any alterations, changes and/or additions to the CONTRACT, and/or any giving by the OBLIGEE of any extensions of time for the performance of the WORK in accordance with the CONTRACT DOCUMENTS, and/or any act of forbearance of either the PRINCIPAL or the OBLIGEE toward the other with respect to the CONTRACT DOCUMENTS, and/or the reduction of any percentage to be retained by the OBLIGEE as permitted by the CONTRACT DOCUMENTS, shall not release, in any manner whatsoever, the PRINCIPAL and the SURETY, or either of them, or their heirs, executors, administrators, successors and assigns from liability and obligations under this BOND; and the SURETY for value received, does waive notice of any such alterations, changes, additions, extensions of time, acts of forbearance and/or reduction of retained percentage.

In Witness Whereof, the PRINCIPAL and the SURETY cause this BOND to be signed, sealed and delivered this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

(INDIVIDUAL PRINCIPAL)

\_\_\_\_\_  
(Signature of Individual) (Seal)

Witness:

\_\_\_\_\_

Trading and Doing Business as:

\_\_\_\_\_

(PARTNERSHIP PRINCIPAL)

\_\_\_\_\_  
(Name of Partnership) (Seal)

Witness:

\_\_\_\_\_

By: \_\_\_\_\_ (Seal)  
(Partner)

(CORPORATION PRINCIPAL)

(Name of Corporation)

\_\_\_\_\_

(Vice) President

By: \_\_\_\_\_

Attest:

\_\_\_\_\_  
(Assistant Secretary)

(Corporate Seal)

(OR, IF APPROPRIATE)

(Name of Corporation)

\_\_\_\_\_

(Authorized Representative)

By: \_\_\_\_\_

(CORPORATION SURETY)

(Name of Corporation)

\_\_\_\_\_

(Attorney-In-Fact)

By: \_\_\_\_\_

Witness:

\_\_\_\_\_

(Corporate Seal)

\*\* Attach an appropriate Power of Attorney, valid and in effect as of the date of this affidavit, evidencing the authority of the Attorney-In-Fact to act in behalf of the corporation.

STATEMENT ACCEPTING PROVISIONS OF WORKERS' COMPENSATION ACT

STATE OF \_\_\_\_\_

ss.

COUNTY OF \_\_\_\_\_

The undersigned contractor has accepted the provisions of the Workers' Compensation Act of Pennsylvania, with all supplements, and has insured liability thereunder in accordance with the terms thereof with the insurance company whose signature is attached hereto.

For Individual

\_\_\_\_\_ (SEAL)

FOR CORPORATION

\_\_\_\_\_ (Name of Corporation)

By: \_\_\_\_\_ (Official Title)

Attest: \_\_\_\_\_ (Secretary or Asst. Secretary)

FOR PARTNERSHIP

\_\_\_\_\_ (Name of Partnership)

By: \_\_\_\_\_ (SEAL)

\_\_\_\_\_ (SEAL)  
(Partners)

\_\_\_\_\_ (Name of Insurance Company)

By: \_\_\_\_\_ (Attorney-In-Fact)

STIPULATION AGAINST LIENS

WHEREAS, \_\_\_\_\_, hereinafter called the CONTRACTOR, has entered into a CONTRACT, dated \_\_\_\_\_, 20\_\_\_\_, with \_\_\_\_\_ hereinafter called the CITY, to provide materials and perform labor necessary for the manufacture and furnishing of the: as set forth in the CONTRACT DOCUMENTS as prepared by the City of Reading.

NOW, THEREFORE, it is hereby stipulated and agreed by and between the said parties, as part of the said CONTRACT, and for the consideration therein set forth, that neither the undersigned CONTRACTOR, any SUBCONTRACTOR or material man, nor any other person furnishing labor or materials to the said CONTRACTOR under this CONTRACT shall file a lien, commonly called a mechanic's lien, for WORK done or materials furnished for the above manufacture.

This stipulation is made and shall be filed with the Berks County Prothonotary within ten (10) days after execution, in accordance with the requirements of Section 1402 of the Mechanics Lien Law of 1963 of the Commonwealth of Pennsylvania in such case provided.

IN WITNESS WHEREOF, the parties hereto have caused the signature of their proper officers to be affixed thereto on this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_ .

(SEAL)

\_\_\_\_\_  
(CITY OF READING)

BY:\_\_\_\_\_

TITLE:\_\_\_\_\_

ATTEST:

BY:\_\_\_\_\_

TITLE:\_\_\_\_\_

(SEAL)

\_\_\_\_\_  
(CONTRACTOR)

ATTEST:

BY:\_\_\_\_\_

TITLE:\_\_\_\_\_

BY:\_\_\_\_\_

TITLE:\_\_\_\_\_

INDEMNITY AGREEMENT & HOLD HARMLESS

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS, the undersigned has entered into a contract with the CITY OF READING, dated \_\_\_\_\_, 20 \_\_, providing for the \_\_\_\_\_  
\_\_\_\_\_ City of Reading, Pennsylvania.

NOW, THEREFORE, in consideration of the award of said contract to the undersigned, \_\_\_\_\_, as well as in further consideration of the sum of ONE DOLLAR (\$1.00) in hand paid to the said \_\_\_\_\_ by the City of Reading, receipt whereof is hereby acknowledged, the said \_\_\_\_\_ agrees to indemnify and save harmless the CITY OF READING, its officers, agents, servants, and employees against any and all loss, damage, costs and expenses which the said CITY may hereafter suffer, incur, be put to or pay by reason of any bodily injury (including death) or damage to property arising out of any act or omission in performance of the work undertaken under the aforesaid contract.

EXECUTED this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

By: \_\_\_\_\_

Title: \_\_\_\_\_

ATTEST:

\_\_\_\_\_

\_\_\_\_\_  
(Title)

NOTICE TO PROCEED

TO:

Project \_\_\_\_\_

Contract No. \_\_\_\_\_

Amount of Contract \_\_\_\_\_

You are hereby notified to commence work on the referenced contract on or before \_\_\_\_\_, 20\_\_\_\_, and shall fully complete all of the work of said contract within \_\_\_\_\_ consecutive calendar days thereafter. Your completion date is therefore \_\_\_\_\_, 20\_\_\_\_.

The contract provides for an assessment of the sum of \$ \_\_\_\_\_ as liquidated damages for each consecutive calendar day after the above established contract completion date that the work remains incomplete.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

By \_\_\_\_\_

Title \_\_\_\_\_

ACCEPTANCE OF NOTICE

Receipt of foregoing Notice to Proceed is hereby acknowledged

By \_\_\_\_\_

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

By \_\_\_\_\_

Title \_\_\_\_\_

PREVAILING WAGE RATES

**BUREAU OF LABOR LAW COMPLIANCE  
PREVAILING WAGES PROJECT RATES**

Project Name:	Schlegel Park Pool
Awarding Agency:	City of Reading
Contract Award Date:	4/15/2020
Serial Number:	20-01865
Project Classification:	Building/Heavy/Highway
Determination Date:	3/3/2020
Assigned Field Office:	Scranton
Field Office Phone Number:	(570)963-4577
Toll Free Phone Number:	(877)214-3962
Project County:	Berks County

**BUREAU OF LABOR LAW COMPLIANCE  
PREVAILING WAGES PROJECT RATES**

<b>Project: 20-01865 - Building</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
Asbestos & Insulation Workers	6/26/2017		\$32.00	\$26.51	\$58.51
Asbestos & Insulation Workers	7/2/2018		\$32.80	\$26.76	\$59.56
Asbestos & Insulation Workers	7/2/2019		\$33.80	\$27.26	\$61.06
Asbestos & Insulation Workers	7/2/2020		\$32.80	\$30.01	\$62.81
Boilermaker (Commercial, Institutional, and Minor Repair Work)	3/1/2017		\$28.52	\$18.22	\$46.74
Boilermaker (Commercial, Institutional, and Minor Repair Work)	3/1/2018		\$29.52	\$18.22	\$47.74
Boilermaker (Commercial, Institutional, and Minor Repair Work)	1/1/2019		\$29.26	\$18.48	\$47.74
Boilermakers	1/1/2018		\$46.26	\$33.36	\$79.62
Boilermakers	3/1/2018		\$45.89	\$33.73	\$79.62
Boilermakers	1/1/2019		\$45.51	\$34.11	\$79.62
Boilermakers	8/1/2019		\$47.21	\$34.11	\$81.32
Bricklayer (Pointer, Cleaner, Caulker, Cement Mason, Plasterer, Tile Setter)	5/1/2018		\$29.40	\$20.35	\$49.75
Bricklayers, Stone Masons, Pointers, Caulkers, Cleaners	5/1/2017		\$34.11	\$15.19	\$49.30
Bricklayers, Stone Masons, Pointers, Caulkers, Cleaners	5/1/2018		\$34.53	\$15.57	\$50.10
Bricklayers, Stone Masons, Pointers, Caulkers, Cleaners	5/1/2019		\$35.04	\$15.96	\$51.00
Bricklayers, Stone Masons, Pointers, Caulkers, Cleaners	5/1/2020		\$35.64	\$16.36	\$52.00
Bricklayers, Stone Masons, Pointers, Caulkers, Cleaners	5/1/2021		\$36.33	\$16.77	\$53.10
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2017		\$30.05	\$16.05	\$46.10
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2018		\$29.53	\$16.20	\$45.73
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2019		\$30.18	\$16.65	\$46.83
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2020		\$30.88	\$17.10	\$47.98
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2021		\$31.77	\$17.41	\$49.18
Cement Finishers	5/1/2017		\$35.87	\$12.93	\$48.80
Cement Masons	5/1/2019		\$31.00	\$22.68	\$53.68
Cement Masons	5/1/2019		\$30.30	\$20.40	\$50.70
DockBuilder/Pile Drivers (Building, Heavy & Highway)	5/1/2018		\$43.45	\$34.47	\$77.92
Dockbuilder/Piledriver (Building, Heavy, Highway)	11/1/2017		\$43.45	\$33.22	\$76.67
Dockbuilder/Piledriver (Building, Heavy, Highway)	5/1/2018		\$44.70	\$33.22	\$77.92
Drywall Finisher	5/1/2017		\$27.81	\$18.17	\$45.98
Drywall Finisher	5/1/2019		\$28.58	\$19.64	\$48.22
Electricians	9/1/2017		\$34.77	\$21.77	\$56.54
Electricians	9/1/2018		\$36.02	\$22.51	\$58.53
Electricians	9/1/2019	8/31/2020	\$36.77	\$23.53	\$60.30
Electricians	9/1/2020		\$38.27	\$23.60	\$61.87
Elevator Constructor	1/1/2018		\$47.48	\$33.00	\$80.48

**BUREAU OF LABOR LAW COMPLIANCE  
PREVAILING WAGES PROJECT RATES**

<b>Project: 20-01865 - Building</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
Floor Coverer	5/1/2019		\$31.54	\$17.89	\$49.43
Floor Coverer	5/1/2020		\$32.66	\$17.89	\$50.55
Floor Layer	5/1/2017		\$30.80	\$16.71	\$47.51
Glazier	5/1/2017		\$34.69	\$18.05	\$52.74
Glazier	5/1/2018		\$35.69	\$18.35	\$54.04
Glazier	5/1/2019	4/30/2020	\$35.53	\$20.06	\$55.59
Glazier	5/1/2020	4/30/2021	\$35.53	\$21.51	\$57.04
Glazier	5/1/2021		\$35.53	\$22.86	\$58.39
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	7/1/2017		\$31.33	\$28.42	\$59.75
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	7/1/2018		\$32.53	\$28.42	\$60.95
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	7/1/2019		\$32.76	\$29.88	\$62.64
Laborers (Class 01 - See notes)	5/1/2017		\$21.57	\$15.04	\$36.61
Laborers (Class 01 - See notes)	5/1/2018	4/30/2019	\$22.07	\$15.59	\$37.66
Laborers (Class 01 - See notes)	5/1/2019	4/30/2020	\$23.02	\$15.92	\$38.94
Laborers (Class 01 - See notes)	5/1/2020		\$22.07	\$17.92	\$39.99
Laborers (Class 02 - See notes)	5/1/2017		\$23.57	\$15.04	\$38.61
Laborers (Class 02 - See notes)	5/1/2018		\$24.07	\$15.59	\$39.66
Laborers (Class 02 - See notes)	5/1/2019	4/30/2020	\$25.02	\$15.92	\$40.94
Laborers (Class 02 - See notes)	5/1/2020		\$24.07	\$17.92	\$41.99
Laborers (Class 03 - See notes)	5/1/2017		\$25.57	\$15.58	\$41.15
Laborers (Class 03 - See notes)	5/1/2018	4/30/2019	\$25.82	\$15.84	\$41.66
Laborers (Class 03 - See notes)	5/1/2019		\$26.87	\$15.94	\$42.81
Laborers (Class 04 - See notes)	5/1/2017		\$26.77	\$15.58	\$42.35
Laborers (Class 04 - See notes)	5/1/2018	4/30/2019	\$27.32	\$15.84	\$43.16
Laborers (Class 04 - See notes)	5/1/2019		\$28.37	\$15.94	\$44.31
Laborers (Class 05 - See notes)	5/1/2017		\$27.27	\$15.58	\$42.85
Laborers (Class 05 - See notes)	5/1/2018	4/30/2019	\$27.82	\$15.84	\$43.66
Laborers (Class 05 - See notes)	5/1/2019		\$28.87	\$15.94	\$44.81
Laborers (Class 06 - See notes)	5/1/2017		\$22.92	\$15.04	\$37.96
Laborers (Class 06 - See notes)	5/1/2018	4/30/2019	\$23.42	\$15.59	\$39.01
Laborers (Class 06 - See notes)	5/1/2019		\$24.37	\$15.92	\$40.29
Laborers (Class 06 - See notes)	5/1/2020		\$24.37	\$16.97	\$41.34
Marble Mason	5/1/2017		\$30.14	\$14.75	\$44.89
Marble Mason	5/1/2018		\$30.76	\$15.13	\$45.89
Marble Mason	5/1/2019		\$31.37	\$15.52	\$46.89
Marble Mason	5/1/2020		\$31.97	\$15.92	\$47.89
Marble Mason	5/1/2021		\$32.56	\$16.33	\$48.89
Millwright	7/1/2017		\$36.49	\$18.93	\$55.42
Millwright	5/1/2018		\$37.84	\$19.64	\$57.48
Millwright	5/1/2019		\$39.14	\$20.08	\$59.22
Operators (Building, Class 01 - See Notes)	5/1/2017		\$35.24	\$24.58	\$59.82
Operators (Building, Class 01 - See Notes)	5/1/2018		\$36.78	\$25.03	\$61.81

**BUREAU OF LABOR LAW COMPLIANCE  
PREVAILING WAGES PROJECT RATES**

<b>Project: 20-01865 - Building</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
Operators (Building, Class 01 - See Notes)	5/1/2019		\$36.78	\$27.03	\$63.81
Operators (Building, Class 01 - See Notes)	5/1/2020		\$38.32	\$27.49	\$65.81
Operators (Building, Class 01 - See Notes)	5/1/2021		\$39.87	\$27.94	\$67.81
Operators (Building, Class 01A - See Notes)	5/1/2017		\$37.49	\$25.23	\$62.72
Operators (Building, Class 01A - See Notes)	5/1/2018		\$39.03	\$25.69	\$64.72
Operators (Building, Class 01A - See Notes)	5/1/2019		\$39.03	\$27.69	\$66.72
Operators (Building, Class 01A - See Notes)	5/1/2020		\$40.57	\$28.15	\$68.72
Operators (Building, Class 01A - See Notes)	5/1/2021		\$42.12	\$28.60	\$70.72
Operators (Building, Class 02 - See Notes)	5/1/2017		\$34.96	\$24.49	\$59.45
Operators (Building, Class 02 - See Notes)	5/1/2018		\$36.50	\$24.95	\$61.45
Operators (Building, Class 02 - See Notes)	5/1/2019		\$36.50	\$26.94	\$63.44
Operators (Building, Class 02 - See Notes)	5/1/2020		\$38.05	\$27.39	\$65.44
Operators (Building, Class 02 - See Notes)	5/1/2021		\$39.59	\$27.85	\$67.44
Operators (Building, Class 02A - See Notes)	5/1/2017		\$37.21	\$25.16	\$62.37
Operators (Building, Class 02A - See Notes)	5/1/2018		\$38.75	\$25.61	\$64.36
Operators (Building, Class 02A - See Notes)	5/1/2019		\$38.75	\$27.61	\$66.36
Operators (Building, Class 02A - See Notes)	5/1/2020		\$40.30	\$28.06	\$68.36
Operators (Building, Class 02A - See Notes)	5/1/2021		\$41.84	\$28.52	\$70.36
Operators (Building, Class 03 - See Notes)	5/1/2017		\$32.23	\$23.68	\$55.91
Operators (Building, Class 03 - See Notes)	5/1/2018		\$33.78	\$24.12	\$57.90
Operators (Building, Class 03 - See Notes)	5/1/2019		\$33.78	\$26.13	\$59.91
Operators (Building, Class 03 - See Notes)	5/1/2020		\$35.32	\$26.59	\$61.91
Operators (Building, Class 03 - See Notes)	5/1/2021		\$36.87	\$27.04	\$63.91
Operators (Building, Class 04 - See Notes)	5/1/2017		\$30.33	\$22.12	\$52.45
Operators (Building, Class 04 - See Notes)	5/1/2018		\$32.63	\$23.80	\$56.43
Operators (Building, Class 04 - See Notes)	5/1/2019		\$32.63	\$25.81	\$58.44
Operators (Building, Class 04 - See Notes)	5/1/2020		\$34.18	\$26.26	\$60.44
Operators (Building, Class 04 - See Notes)	5/1/2021		\$35.72	\$26.72	\$62.44
Operators (Building, Class 05 - See Notes)	5/1/2017		\$29.87	\$21.99	\$51.86
Operators (Building, Class 05 - See Notes)	5/1/2018		\$32.18	\$23.69	\$55.87
Operators (Building, Class 05 - See Notes)	5/1/2019		\$32.19	\$25.67	\$57.86
Operators (Building, Class 05 - See Notes)	5/1/2020		\$33.73	\$26.13	\$59.86
Operators (Building, Class 05 - See Notes)	5/1/2021		\$35.27	\$26.59	\$61.86
Operators (Building, Class 06 - See Notes)	5/1/2017		\$29.00	\$21.72	\$50.72
Operators (Building, Class 06 - See Notes)	5/1/2018		\$31.31	\$23.41	\$54.72
Operators (Building, Class 06 - See Notes)	5/1/2019		\$31.31	\$25.41	\$56.72
Operators (Building, Class 06 - See Notes)	5/1/2020		\$32.86	\$25.86	\$58.72
Operators (Building, Class 06 - See Notes)	5/1/2021		\$34.40	\$26.32	\$60.72
Operators (Building, Class 07A- See Notes)	5/1/2017		\$42.44	\$28.13	\$70.57
Operators (Building, Class 07A- See Notes)	5/1/2018		\$44.29	\$28.68	\$72.97
Operators (Building, Class 07A- See Notes)	5/1/2019		\$44.60	\$30.77	\$75.37
Operators (Building, Class 07A- See Notes)	5/1/2020		\$46.46	\$31.31	\$77.77
Operators (Building, Class 07A- See Notes)	5/1/2021		\$48.31	\$31.86	\$80.17
Operators (Building, Class 07B- See Notes)	5/1/2017		\$42.09	\$28.03	\$70.12

**BUREAU OF LABOR LAW COMPLIANCE  
PREVAILING WAGES PROJECT RATES**

<b>Project: 20-01865 - Building</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
Operators (Building, Class 07B- See Notes)	5/1/2018		\$43.95	\$28.58	\$72.53
Operators (Building, Class 07B- See Notes)	5/1/2019		\$44.26	\$30.66	\$74.92
Operators (Building, Class 07B- See Notes)	5/1/2020		\$46.11	\$31.21	\$77.32
Operators (Building, Class 07B- See Notes)	5/1/2021		\$47.96	\$31.77	\$79.73
Painters Class 1 (see notes)	5/1/2017		\$27.25	\$18.17	\$45.42
Painters Class 1 (see notes)	5/1/2019		\$28.31	\$19.77	\$48.08
Painters Class 2 (see notes)	5/1/2017		\$30.15	\$18.17	\$48.32
Painters Class 2 (see notes)	5/1/2019		\$31.21	\$19.78	\$50.99
Painters Class 3 (see notes)	5/1/2017		\$36.25	\$18.17	\$54.42
Plasterers (Use Cement Masons)	5/1/2018		\$29.00	\$21.30	\$50.30
Plasterers	5/1/2017		\$24.23	\$21.38	\$45.61
Plasterers	5/1/2019		\$26.73	\$20.63	\$47.36
Plasterers	5/1/2019		\$32.08	\$21.86	\$53.94
plumber	5/1/2019		\$45.92	\$31.72	\$77.64
Plumbers	5/1/2017		\$44.39	\$30.60	\$74.99
Roofers (Composition)	5/1/2017		\$36.15	\$30.22	\$66.37
Roofers (Composition)	5/1/2018		\$37.15	\$31.27	\$68.42
Roofers (Composition)	5/1/2019		\$38.35	\$31.80	\$70.15
Roofers (Shingle)	5/1/2016		\$25.70	\$19.17	\$44.87
Roofers (Shingle)	5/1/2019		\$28.50	\$20.87	\$49.37
Roofers (Slate & Tile)	5/1/2016		\$28.70	\$19.17	\$47.87
Roofers (Slate & Tile)	5/1/2018		\$30.50	\$20.37	\$50.87
Roofers (Slate & Tile)	5/1/2019		\$31.50	\$20.87	\$52.37
Sheet Metal Workers	6/1/2016		\$33.60	\$33.43	\$67.03
Sheet Metal Workers	6/1/2017		\$33.98	\$35.40	\$69.38
Sheet Metal Workers	6/1/2018		\$34.78	\$36.45	\$71.23
Sheet Metal Workers	6/1/2019		\$36.08	\$37.65	\$73.73
Sprinklerfitters	4/1/2017		\$37.40	\$21.74	\$59.14
Sprinklerfitters	4/1/2018		\$38.80	\$22.74	\$61.54
Steamfitters	5/1/2017		\$46.99	\$32.67	\$79.66
Steamfitters	5/1/2019		\$49.93	\$35.82	\$85.75
Terrazzo Finisher	5/1/2017		\$31.64	\$15.62	\$47.26
Terrazzo Finisher	5/1/2018		\$32.35	\$15.91	\$48.26
Terrazzo Finisher	5/1/2019		\$33.04	\$16.22	\$49.26
Terrazzo Setter	5/1/2017		\$30.63	\$18.85	\$49.48
Terrazzo Setter	5/1/2018		\$31.23	\$19.25	\$50.48
Terrazzo Setter	5/1/2019		\$31.81	\$19.67	\$51.48
Tile & Marble Finisher	5/1/2017		\$26.89	\$13.86	\$40.75
Tile & Marble Finisher	5/1/2018		\$27.60	\$14.15	\$41.75
Tile & Marble Finisher	5/1/2019		\$28.29	\$14.46	\$42.75
Tile & Marble Finisher	5/1/2020		\$28.96	\$14.79	\$43.75
Tile & Marble Finisher	5/1/2021		\$29.61	\$15.14	\$44.75
Tile Setter	5/1/2017		\$30.14	\$14.75	\$44.89
Tile Setter	5/1/2018		\$30.76	\$15.13	\$45.89

**BUREAU OF LABOR LAW COMPLIANCE  
PREVAILING WAGES PROJECT RATES**

<b>Project: 20-01865 - Building</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
Tile Setter	5/1/2019		\$31.37	\$15.52	\$46.89
Tile Setter	5/1/2020		\$31.97	\$15.92	\$47.89
Tile Setter	5/1/2021		\$32.56	\$16.33	\$48.89
Truckdriver class 1(see notes)	5/1/2017		\$34.47	\$0.00	\$34.47
Truckdriver class 1(see notes)	5/1/2018		\$35.32	\$0.00	\$35.32
Truckdriver class 1(see notes)	5/1/2019		\$36.12	\$0.00	\$36.12
Truckdriver class 2 (see notes)	5/1/2017		\$34.54	\$0.00	\$34.54
Truckdriver class 2 (see notes)	5/1/2018		\$35.39	\$0.00	\$35.39
Truckdriver class 2 (see notes)	5/1/2019		\$36.19	\$0.00	\$36.19
Truckdriver class 3 (see notes)	5/1/2017		\$35.03	\$0.00	\$35.03
Truckdriver class 3 (see notes)	5/1/2018		\$35.88	\$0.00	\$35.88
Truckdriver class 3 (see notes)	5/1/2019		\$36.68	\$0.00	\$36.68
Window Film / Tint Installer	6/1/2019		\$24.52	\$12.08	\$36.60

**BUREAU OF LABOR LAW COMPLIANCE  
PREVAILING WAGES PROJECT RATES**

<b>Project: 20-01865 - Heavy/Highway</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
Carpenter - Chief of Party (Surveying & Layout)	5/1/2019	4/30/2020	\$36.88	\$15.49	\$52.37
Carpenter - Chief of Party (Surveying & Layout)	5/1/2020	4/30/2021	\$39.12	\$15.49	\$54.61
Carpenter - Chief of Party (Surveying & Layout)	5/1/2021		\$41.42	\$15.49	\$56.91
Carpenter - Instrument Person (Surveying & Layout)	5/1/2016		\$27.12	\$13.83	\$40.95
Carpenter - Instrument Person (Surveying & Layout)	5/1/2019	4/30/2020	\$32.07	\$15.49	\$47.56
Carpenter - Instrument Person (Surveying & Layout)	5/1/2020	4/30/2021	\$34.02	\$15.49	\$49.51
Carpenter - Instrument Person (Surveying & Layout)	5/1/2021		\$36.02	\$15.49	\$51.51
Carpenter - Rodman I (Survey & Layout)	5/1/2016		\$21.09	\$13.83	\$34.92
Carpenter - Rodman I (Survey & Layout)	5/1/2019	4/30/2020	\$25.66	\$12.39	\$38.05
Carpenter - Rodman I (Survey & Layout)	5/1/2020	4/30/2021	\$27.22	\$12.39	\$39.61
Carpenter - Rodman I (Survey & Layout)	5/1/2021		\$28.82	\$12.39	\$41.21
Carpenter - Rodman II (Survey & Layout)	5/1/2016		\$18.69	\$13.83	\$32.52
Carpenter	5/1/2019	4/30/2020	\$32.07	\$15.49	\$47.56
Carpenter	5/1/2020	4/30/2021	\$34.02	\$15.49	\$49.51
Carpenter	5/1/2021		\$36.02	\$15.49	\$51.51
Carpenters	6/1/2017		\$30.92	\$14.14	\$45.06
Cement Finishers	1/1/2017		\$27.70	\$20.20	\$47.90
Electric Lineman	5/29/2017		\$44.22	\$23.94	\$68.16
Electric Lineman	5/28/2018		\$45.25	\$24.94	\$70.19
Electric Lineman	5/27/2019		\$46.32	\$25.97	\$72.29
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	7/1/2017		\$31.33	\$28.42	\$59.75
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	7/1/2018		\$32.53	\$28.42	\$60.95
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	7/1/2019		\$32.76	\$29.88	\$62.64
Iron Workers	7/1/2106		\$31.95	\$27.65	\$59.60
Laborers (Class 01 - See notes)	5/1/2016		\$19.81	\$15.79	\$35.60
Laborers (Class 01 - See notes)	5/1/2017		\$20.36	\$16.29	\$36.65
Laborers (Class 01 - See notes)	5/1/2018		\$20.96	\$16.79	\$37.75
Laborers (Class 01 - See notes)	5/1/2019		\$21.61	\$17.29	\$38.90
Laborers (Class 02 - See notes)	5/1/2016		\$26.43	\$15.79	\$42.22
Laborers (Class 02 - See notes)	5/1/2017		\$26.98	\$16.29	\$43.27
Laborers (Class 02 - See notes)	5/1/2018		\$27.58	\$16.79	\$44.37
Laborers (Class 02 - See notes)	5/1/2019		\$28.23	\$17.29	\$45.52
Laborers (Class 03 - See notes)	5/1/2016		\$23.42	\$15.79	\$39.21
Laborers (Class 03 - See notes)	5/1/2017		\$23.97	\$16.29	\$40.26
Laborers (Class 03 - See notes)	5/1/2018		\$24.57	\$16.79	\$41.36
Laborers (Class 03 - See notes)	5/1/2019		\$25.22	\$17.29	\$42.51
Laborers (Class 04 - See notes)	5/1/2016		\$23.77	\$15.79	\$39.56
Laborers (Class 04 - See notes)	5/1/2017		\$24.32	\$16.29	\$40.61
Laborers (Class 04 - See notes)	5/1/2018		\$24.92	\$16.79	\$41.71
Laborers (Class 04 - See notes)	5/1/2019		\$25.57	\$17.29	\$42.86
Laborers (Class 05 - See notes)	5/1/2016		\$24.44	\$15.79	\$40.23
Laborers (Class 05 - See notes)	5/1/2017		\$24.99	\$16.29	\$41.28

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<b>Project: 20-01865 - Heavy/Highway</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
Laborers (Class 05 - See notes)	5/1/2018		\$25.59	\$16.79	\$42.38
Laborers (Class 05 - See notes)	5/1/2019		\$26.24	\$17.29	\$43.53
Laborers (Class 06 - See notes)	5/1/2016		\$23.86	\$15.79	\$39.65
Laborers (Class 06 - See notes)	5/1/2017		\$24.41	\$16.29	\$40.70
Laborers (Class 06 - See notes)	5/1/2018		\$25.01	\$16.79	\$41.80
Laborers (Class 06 - See notes)	5/1/2019		\$25.66	\$17.29	\$42.95
Laborers (Class 07 - See notes)	5/1/2016		\$24.15	\$15.79	\$39.94
Laborers (Class 07 - See notes)	5/1/2017		\$24.70	\$16.29	\$40.99
Laborers (Class 07 - See notes)	5/1/2018		\$25.30	\$16.79	\$42.09
Laborers (Class 07 - See notes)	5/1/2019		\$25.95	\$17.29	\$43.24
Laborers (Class 08 - See notes)	5/1/2016		\$24.63	\$15.79	\$40.42
Laborers (Class 08 - See notes)	5/1/2017		\$25.18	\$16.29	\$41.47
Laborers (Class 08 - See notes)	5/1/2018		\$25.78	\$16.79	\$42.57
Laborers (Class 08 - See notes)	5/1/2019		\$26.43	\$17.29	\$43.72
Operators (Building/Heavy, Class 01 - See Notes)	5/1/2016		\$32.16	\$22.64	\$54.80
Operators (Building/Heavy, Class 01 - See Notes)	5/1/2017		\$33.80	\$24.16	\$57.96
Operators (Building/Heavy, Class 01 - See Notes)	5/1/2018		\$35.35	\$24.61	\$59.96
Operators (Building/Heavy, Class 01 - See Notes)	5/1/2019		\$35.35	\$26.61	\$61.96
Operators (Building/Heavy, Class 01 - See Notes)	5/1/2020		\$36.90	\$27.06	\$63.96
Operators (Building/Heavy, Class 01 - See Notes)	5/1/2021		\$38.44	\$27.52	\$65.96
Operators (Building/Heavy, Class 01a - See Notes)	5/1/2017		\$36.05	\$24.82	\$60.87
Operators (Building/Heavy, Class 01a - See Notes)	5/1/2018		\$37.60	\$25.27	\$62.87
Operators (Building/Heavy, Class 01a - See Notes)	5/1/2019		\$37.60	\$27.27	\$64.87
Operators (Building/Heavy, Class 01a - See Notes)	5/1/2020		\$39.14	\$27.73	\$66.87
Operators (Building/Heavy, Class 01a - See Notes)	5/1/2021		\$40.69	\$28.18	\$68.87
Operators (Building/Heavy, Class 02 - See Notes)	5/1/2017		\$33.52	\$24.07	\$57.59
Operators (Building/Heavy, Class 02 - See Notes)	5/1/2018		\$35.07	\$24.52	\$59.59
Operators (Building/Heavy, Class 02 - See Notes)	5/1/2019		\$35.07	\$26.52	\$61.59
Operators (Building/Heavy, Class 02 - See Notes)	5/1/2020		\$36.61	\$26.98	\$63.59
Operators (Building/Heavy, Class 02 - See Notes)	5/1/2021		\$38.16	\$27.43	\$65.59
Operators (Building/Heavy, Class 02a - See Notes)	5/1/2017		\$35.78	\$24.72	\$60.50
Operators (Building/Heavy, Class 02a - See Notes)	5/1/2018		\$37.32	\$25.19	\$62.51
Operators (Building/Heavy, Class 02a - See Notes)	5/1/2019		\$37.32	\$27.19	\$64.51
Operators (Building/Heavy, Class 02a - See Notes)	5/1/2020		\$38.87	\$27.64	\$66.51
Operators (Building/Heavy, Class 02a - See Notes)	5/1/2021		\$40.41	\$28.10	\$68.51
Operators (Building/Heavy, Class 03 - See Notes)	5/1/2017		\$30.60	\$23.21	\$53.81
Operators (Building/Heavy, Class 03 - See Notes)	5/1/2018		\$32.15	\$23.66	\$55.81
Operators (Building/Heavy, Class 03 - See Notes)	5/1/2019		\$32.15	\$25.66	\$57.81
Operators (Building/Heavy, Class 03 - See Notes)	5/1/2020		\$33.69	\$26.12	\$59.81
Operators (Building/Heavy, Class 03 - See Notes)	5/1/2021		\$35.24	\$26.57	\$61.81
Operators (Building/Heavy, Class 04 - See Notes)	5/1/2017		\$29.47	\$22.88	\$52.35
Operators (Building/Heavy, Class 04 - See Notes)	5/1/2018		\$31.01	\$23.32	\$54.33
Operators (Building/Heavy, Class 04 - See Notes)	5/1/2019		\$31.01	\$25.33	\$56.34
Operators (Building/Heavy, Class 04 - See Notes)	5/1/2020		\$32.55	\$25.79	\$58.34

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<b>Project: 20-01865 - Heavy/Highway</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
Operators (Building/Heavy, Class 04 - See Notes)	5/1/2021		\$34.10	\$26.24	\$60.34
Operators (Building/Heavy, Class 05 - See Notes)	5/1/2017		\$29.02	\$22.74	\$51.76
Operators (Building/Heavy, Class 05 - See Notes)	5/1/2018		\$30.56	\$23.20	\$53.76
Operators (Building/Heavy, Class 05 - See Notes)	5/1/2019		\$30.56	\$25.20	\$55.76
Operators (Building/Heavy, Class 05 - See Notes)	5/1/2020		\$32.11	\$25.65	\$57.76
Operators (Building/Heavy, Class 05 - See Notes)	5/1/2021		\$33.65	\$26.11	\$59.76
Operators (Building/Heavy, Class 06 - See Notes)	5/1/2017		\$28.14	\$22.49	\$50.63
Operators (Building/Heavy, Class 06 - See Notes)	5/1/2018		\$29.68	\$22.93	\$52.61
Operators (Building/Heavy, Class 06 - See Notes)	5/1/2019		\$29.68	\$24.94	\$54.62
Operators (Building/Heavy, Class 06 - See Notes)	5/1/2020		\$31.23	\$25.39	\$56.62
Operators (Building/Heavy, Class 06 - See Notes)	5/1/2021		\$32.77	\$25.84	\$58.61
Operators (Class 02 - All Types of Cranes, Backhoes, Shovels)	5/1/2019		\$33.29	\$25.99	\$59.28
Operators (Heavy, Class 07A - See Notes)	5/1/2017		\$40.73	\$27.63	\$68.36
Operators (Heavy, Class 07A - See Notes)	5/1/2018		\$42.58	\$28.18	\$70.76
Operators (Heavy, Class 07A - See Notes)	5/1/2019		\$42.89	\$30.27	\$73.16
Operators (Heavy, Class 07A - See Notes)	5/1/2020		\$44.74	\$30.82	\$75.56
Operators (Heavy, Class 07A - See Notes)	5/1/2021		\$46.59	\$31.37	\$77.96
Operators (Heavy, Class 07B - See Notes)	5/1/2017		\$40.38	\$27.53	\$67.91
Operators (Heavy, Class 07B - See Notes)	5/1/2018		\$42.23	\$28.09	\$70.32
Operators (Heavy, Class 07B - See Notes)	5/1/2019		\$42.54	\$30.17	\$72.71
Operators (Heavy, Class 07B - See Notes)	5/1/2020		\$44.39	\$30.72	\$75.11
Operators (Heavy, Class 07B - See Notes)	5/1/2021		\$46.25	\$31.26	\$77.51
Operators (Highway, Class 01 - See Notes)	5/1/2016		\$32.16	\$22.64	\$54.80
Operators (Highway, Class 01 - See Notes)	5/1/2017		\$32.93	\$23.87	\$56.80
Operators (Highway, Class 01 - See Notes)	5/1/2018		\$34.47	\$24.33	\$58.80
Operators (Highway, Class 01 - See Notes)	5/1/2019		\$34.47	\$26.33	\$60.80
Operators (Highway, Class 01 - See Notes)	5/1/2020		\$37.56	\$25.24	\$62.80
Operators (Highway, Class 01 - See Notes)	5/1/2021		\$39.10	\$25.70	\$64.80
Operators (Highway, Class 01a - See Notes)	5/1/2017		\$35.18	\$24.56	\$59.74
Operators (Highway, Class 01a - See Notes)	5/1/2018		\$36.72	\$25.01	\$61.73
Operators (Highway, Class 01a - See Notes)	5/1/2019		\$36.72	\$27.01	\$63.73
Operators (Highway, Class 01a - See Notes)	5/1/2020		\$39.81	\$25.92	\$65.73
Operators (Highway, Class 01a - See Notes)	5/1/2021		\$41.35	\$26.38	\$67.73
Operators (Highway, Class 02 - See Notes)	5/1/2016		\$30.98	\$22.31	\$53.29
Operators (Highway, Class 02 - See Notes)	5/1/2017		\$31.75	\$23.53	\$55.28
Operators (Highway, Class 02 - See Notes)	5/1/2018		\$33.30	\$23.98	\$57.28
Operators (Highway, Class 02 - See Notes)	5/1/2019		\$33.29	\$25.99	\$59.28
Operators (Highway, Class 02 - See Notes)	5/1/2020		\$36.38	\$24.90	\$61.28
Operators (Highway, Class 02 - See Notes)	5/1/2021		\$37.93	\$25.35	\$63.28
Operators (Highway, Class 03 - See Notes)	5/1/2016		\$30.28	\$22.10	\$52.38
Operators (Highway, Class 03 - See Notes)	5/1/2017		\$31.06	\$23.32	\$54.38
Operators (Highway, Class 03 - See Notes)	5/1/2018		\$32.59	\$23.80	\$56.39
Operators (Highway, Class 03 - See Notes)	5/1/2019		\$32.59	\$25.79	\$58.38
Operators (Highway, Class 03 - See Notes)	5/1/2020		\$35.69	\$24.69	\$60.38

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Operators (Highway, Class 03 - See Notes)	5/1/2021		\$37.23	\$25.16	\$62.39
Operators (Highway, Class 04 - See Notes)	5/1/2016		\$29.82	\$21.98	\$51.80
Operators (Highway, Class 04 - See Notes)	5/1/2017		\$30.60	\$23.20	\$53.80
Operators (Highway, Class 04 - See Notes)	5/1/2018		\$32.14	\$23.66	\$55.80
Operators (Highway, Class 04 - See Notes)	5/1/2019		\$32.14	\$25.66	\$57.80
Operators (Highway, Class 04 - See Notes)	5/1/2020		\$35.23	\$24.57	\$59.80
Operators (Highway, Class 04 - See Notes)	5/1/2021		\$36.77	\$25.03	\$61.80
Operators (Highway, Class 05 - See Notes)	5/1/2016		\$29.31	\$21.83	\$51.14
Operators (Highway, Class 05 - See Notes)	5/1/2017		\$30.08	\$23.06	\$53.14
Operators (Highway, Class 05 - See Notes)	5/1/2018		\$31.63	\$23.51	\$55.14
Operators (Highway, Class 05 - See Notes)	5/1/2019		\$31.63	\$25.51	\$57.14
Operators (Highway, Class 05 - See Notes)	5/1/2020		\$34.72	\$24.42	\$59.14
Operators (Highway, Class 05 - See Notes)	5/1/2021		\$36.26	\$24.87	\$61.13
Operators (Highway, Class 06 - See Notes)	5/1/2016		\$32.40	\$22.70	\$55.10
Operators (Highway, Class 06 - See Notes)	5/1/2017		\$33.17	\$23.94	\$57.11
Operators (Highway, Class 06 - See Notes)	5/1/2018		\$34.71	\$24.39	\$59.10
Operators (Highway, Class 06 - See Notes)	5/1/2019		\$34.71	\$26.39	\$61.10
Operators (Highway, Class 06 - See Notes)	5/1/2020		\$37.79	\$25.30	\$63.09
Operators (Highway, Class 06 - See Notes)	5/1/2021		\$39.33	\$25.78	\$65.11
Operators (Highway, Class 06/A - See Notes)	5/1/2016		\$34.65	\$23.36	\$58.01
Operators (Highway, Class 06/A - See Notes)	5/1/2017		\$35.42	\$24.59	\$60.01
Operators (Highway, Class 06/A - See Notes)	5/1/2018		\$36.96	\$25.05	\$62.01
Operators (Highway, Class 06/A - See Notes)	5/1/2019		\$36.96	\$27.05	\$64.01
Operators (Highway, Class 06/A - See Notes)	5/1/2020		\$40.04	\$25.97	\$66.01
Operators (Highway, Class 06/A - See Notes)	5/1/2021		\$41.58	\$26.43	\$68.01
Operators (Highway, Class 07/A - See Notes)	5/1/2016		\$38.56	\$25.99	\$64.55
Operators (Highway, Class 07/A - See Notes)	5/1/2017		\$39.66	\$27.31	\$66.97
Operators (Highway, Class 07/A - See Notes)	5/1/2018		\$41.52	\$27.84	\$69.36
Operators (Highway, Class 07/A - See Notes)	5/1/2019		\$41.82	\$29.95	\$71.77
Operators (Highway, Class 07/A - See Notes)	5/1/2020		\$45.23	\$28.94	\$74.17
Operators (Highway, Class 07/A - See Notes)	5/1/2021		\$47.08	\$29.49	\$76.57
Operators (Highway, Class 07/B - See Notes)	5/1/2016		\$37.17	\$25.57	\$62.74
Operators (Highway, Class 07/B - See Notes)	5/1/2017		\$38.25	\$26.89	\$65.14
Operators (Highway, Class 07/B - See Notes)	5/1/2018		\$40.10	\$27.44	\$67.54
Operators (Highway, Class 07/B - See Notes)	5/1/2019		\$40.41	\$29.53	\$69.94
Operators (Highway, Class 07/B - See Notes)	5/1/2020		\$43.81	\$28.53	\$72.34
Operators (Highway, Class 07/B - See Notes)	5/1/2021		\$45.66	\$29.08	\$74.74
Painters Class 3 (see notes)	5/1/2019		\$37.31	\$19.78	\$57.09
Steamfitters (Heavy and Highway - Gas Distribution)	5/1/2017		\$40.98	\$32.53	\$73.51
Truckdriver class 1(see notes)	5/1/2016		\$33.57	\$0.00	\$33.57
Truckdriver class 1(see notes)	5/1/2017		\$34.47	\$0.00	\$34.47
Truckdriver class 1(see notes)	5/1/2018		\$35.32	\$0.00	\$35.32
Truckdriver class 1(see notes)	5/1/2019		\$36.12	\$0.00	\$36.12
Truckdriver class 2 (see notes)	5/1/2016		\$33.64	\$0.00	\$33.64

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Truckdriver class 2 (see notes)	5/1/2017		\$34.54	\$0.00	\$34.54
Truckdriver class 2 (see notes)	5/1/2018		\$35.39	\$0.00	\$35.39
Truckdriver class 2 (see notes)	5/1/2019		\$36.19	\$0.00	\$36.19
Truckdriver class 3 (see notes)	5/1/2016		\$34.13	\$0.00	\$34.13
Truckdriver class 3 (see notes)	5/1/2017		\$35.03	\$0.00	\$35.03
Truckdriver class 3 (see notes)	5/1/2018		\$35.88	\$0.00	\$35.88
Truckdriver class 3 (see notes)	5/1/2019		\$36.68	\$0.00	\$36.68

## **SUPPLEMENTARY GENERAL TERMS AND CONDITIONS**

### **1. Lead-Based Paint Hazard**

The contractor is hereby specifically made aware of the HUD lead-based paint regulations, 24 CFR, Part 35, which are applicable to the construction or rehabilitation of residential structures. To the extent that the subject matter of this contract involves residential structures, the contractor will comply with the lead-based paint regulations.

### **2. Compliance With Air and Water Acts**

The contract is subject to the requirements of the Clean Air Act, as amended, 42 USC 1857 et seq., the Federal Water Pollution Control Act, as amended, 32 USC 1251 et seq., and the regulations of the Environmental Protection Agency (EPA) with respect thereto, at 40 CFR Part 15, as amended from time to time.

The contractor and any of its subcontractors for work funded under the contract which is in excess of \$100,000 agree to the following agreements:

(a) A stipulation by the contractor or subcontractors that any facility to be utilized in the performance of any non-exempt contract or subcontract is not listed on the List of Violating Facilities issued by the EPA pursuant to 40 CFR 15.20.

(b) Agreement by the contractor to comply with all the requirements of Section 114 of the Clean Air Act, as amended, (42 USC 1857c-8) and Section 308 of the Federal Water Pollution Control Act; as amended, (33 USC 1318) relating to inspection, monitoring, entry, reports and information, as well as all other requirements specified in said Section 114 and Section 308, and all regulations and guidelines issued thereunder.

(c) A stipulation that as a condition for the award of the contract prompt notice will be given of any notification received from the Director, Office of Federal Activities, EPA, indicating that a facility utilized or to be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.

(d) Agreement by the contractor that he will include or cause to be included the criteria and requirements in paragraph (a) through (d) of this Section in every non-exempt subcontract and requiring that the contractor will take such action as the Government may direct as a means of enforcing such provision.

In no event shall any amount of the assistance provided under this contract be utilized with respect to a facility which has given rise to a conviction under Section 113(c) (l) of the Clean Air Act or Section 309(c) of the Federal Water Pollution Control Act.

### **3. Interest of Members, Officers, or Employees of Public Body, Member of Local Governing Body, or Other Public Officials**

No member, officer, or employee of the Public Body, or its designees or agents, no member of the governing body of the locality in which the program is situated, and no other public official of such locality or localities who exercises any functions or responsibilities with respect to the program during his tenure or for one (1) year thereafter, shall have any interest, direct or indirect, in any contract or subcontract, or the proceeds thereof, for work to be performed in connection with the program assisted under the contract.

**4. Prohibition Against Payments of Bonus or Commission**

The assistance provided under the contract shall not be used in the payment of any bonus or commission for the purpose of obtaining HUD approval of the application for such assistance, or HUD approval of applications for additional assistance, or any other approval or concurrence of HUD required under this contract, Title I of the Housing and Community Development Act of 1974 or HUD regulations with respect thereto; Provided, however, that reasonable fees or bona-fide technical consultant managerial or other such services, other than actual solicitation, are not hereby prohibited if otherwise eligible as program costs.

**5. Energy Conservation Provisions**

The contractor must recognize mandatory standards and policies relating to energy efficiency contained in the Cost Effective Energy Conservation Measures.

**6. Section 109 of the Housing and Community Development Act of 1974**

No person in the United States shall on the grounds of race, color, national origin, or sex be excluded from participation in, be denied the benefits, or be subjected to discrimination under any program or activity funded in whole or in part with funds made available under this Title.

**7. Executive Order 11625 – Minority Business Enterprise**

(a) It is the policy of the City to take positive steps to maximize the utilization of minority business enterprises in all contract activity administered by the City.

(b) The contractor will utilize his best efforts to carry out this policy in the award of his subcontracts to the fullest extent consistent with the efficient performance of this contract.

As used in the contract, the term "minority business enterprise" means a business, at least fifty percent (50%) of which is owned by minority group members, or in the case of publicly owned businesses, at least fifty-one percent (51%) of the stock is owned by minority group members. For the purpose of this definition, minority groups are members of Blacks, Hispanics, Asians, Native Americans, Alaskans, or Pacific Islanders.

**8. Executive Order 12138 – Women's Business Enterprise**

(a) It is the policy of the City to take positive steps to maximize the utilization of women business enterprises in all contracts administered by the City.

(b) The contractor will utilize his best efforts to carry out this policy in the award of his subcontracts to the fullest extent consistent with the efficient performance of this contract.

As used in the contract, the term "women business enterprise" means a business, that is at least fifty-one percent (51%) owned by a woman or women who also control and operate it. "Control" in this context means exercising the power to make policy decisions. "Operate" in this context means being actively involved in the day-to-day management.

**9. Age Discrimination Act of 1975**

No person in the United States shall, on the basis of age be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

**10. Section 504 Handicapped (if \$2,500 or over)**

Affirmative Action for Handicapped Workers:

**(a)** The contractor will not discriminate against any employee or applicant for employment because of physical or mental handicap in regard to any position for which the employee or applicant for employment is qualified. The contractor agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified handicapped individuals without discrimination based upon their physical or mental handicap in all employment practices such as the following: Employment upgrading, demotion or transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.

**(b)** The contractor agrees to comply with rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.

**(c)** In the event of the contractor's non-compliance with the requirements of this clause, actions for non-compliance may be taken in accordance with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.

**(d)** The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices in a form to be prescribed by the Director, provided by or through the contracting officer. Such notices shall state the contractor's obligation under the law to take affirmative action to employ and advance in employment qualified handicapped employees and applicants for employment, and the rights of applicants and employees.

**(e)** The contractor will notify each labor union or representative or workers with which it has a collective bargaining agreement or other contract understanding, that the contractor is bound by the terms of Section 503 of the Rehabilitation Act of 1973, and is committed to take affirmative action to employ and advance in employment physically and mentally handicapped individuals.

**(f)** The contractor will include the provisions of this clause in every subcontract or purchase order of \$2,500 or more unless exempted by rules, regulations, or orders of the Secretary issued pursuant to Section 503 of the Act, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the Director of the Office of Federal Contract Compliance Programs may direct to enforce such provisions, including action for non-compliance.

## SECTION 3 REQUIREMENTS

**SECTION 3 CLAUSE AND CERTIFICATION FOR COMPLIANCE FOR TRAINING, EMPLOYMENT AND CONTRACTING OPPORTUNITIES FOR BUSINESS AND LOW INCOME PERSONS**  
(Contracts over \$100,000)

A. The work to be performed under this contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, (12 U.S.C. of 1701u) (section 3). The purpose of section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low and very low income persons, particularly persons who are recipients of HUD assistance for housing.

B. The parties to this contract agree to comply with HUD's regulations in 24 CFR Part 135, which implement section 3. As evidenced by their execution of the contract, the parties certify that they are under no contractual or other impediment that would prevent them from complying with the part 135 regulations.

C. The contractor agrees to send to each labor organization or representative of worker with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or worker's representative of the contractor's commitments under this section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.

D. The contractor agrees to include this section 3 clause in every subcontract subject to compliance with regulations in 24 CFR part 135 (if subcontract is over \$100,000), and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this section 3 clause, upon finding that the subcontractor is in violation of the regulations in 24 CFR part 135. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR part 135.

E. The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR part 135 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR part 135.

F. Noncompliance with HUD's regulations in 24 CFR part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contacts.

G. The following forms: Contractor's Certification of Compliance with Section 3, Workforce Needs Table (Attachment I) and Utilization of Section 3 Business Concerns (Attachment II) must be completed and submitted to the Bureau of Development and Inspections **PRIOR** to executing the contract in order to determine compliance with Section 3 requirements. The Bureau will determine the acceptability of the submission.

\_\_\_\_\_  
COMPANY

By: \_\_\_\_\_  
AUTHORIZED SIGNATURE

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**ATTACHMENT I**

**WORKFORCE NEEDS TABLE**

**TOTAL # OF LOW INCOME CITY RESIDENTS TO BE HIRED \***

<u>TOTAL #</u> <u>OF</u> <u>SKILLED</u> <u>WORKERS</u> <u>OCCUPATION</u> <u>CATEGORY +</u>	<u>TOTAL #</u> <u>OF</u> <u>TRAINEES</u> <u>ON</u> <u>PAYROLL</u>	<u>TOTAL #</u> <u>OF</u> <u>SKILLED</u> <u>WORKERS</u> <u>ON</u> <u>PAYROLL</u>	<u>TOTAL #</u> <u>OF</u> <u>TRAINEES</u> <u>TO BE</u> <u>HIRED</u>	<u>TO BE</u> <u>HIRED</u>	<u>SKILLED</u> <u>WORKERS</u>	<u>TRAINEES</u>

**TOTALS:**

- \* The numerical goal for hirees is 20% of the aggregate number of new hires.
- + These classifications should relate to the classifications found in the wage rate determination.

**EMPLOYMENT AND TRAINEE CERTIFICATION**

- A. The Company hereby certifies that the above table represents the approximate number of employee and trainee positions required in the execution of this contract and which are not presently filled by regular and permanent employees and also represents the number of low income City residents that the company proposes to make good faith efforts to employ.
- B. The Company certifies that it will make a good faith effort to employ the number of lower income employees and trainees stated above utilizing: [1] such community based organizations and service agencies as the Spanish Speaking Council of Reading and Berks County, Berks Employment and Training Office, Berks Community Action Program, Reading Housing Authority Tenant Councils, and any others that may assist in meeting the goals; and [2] on-site company employment posters.
- C. The Company certifies that the trainees to be utilized on the project in no event is less than the number of trainees determined by the Secretary of Labor for each construction occupation.

\_\_\_\_\_  
COMPANY

DATE: \_\_\_\_\_

BY: \_\_\_\_\_  
(Authorized Signature)

**ATTACHMENT II**

**UTILIZATION OF SECTION 3 PROJECT BUSINESSES**

The Company shall require the services of companies engaged in the business of:

PROPOSED SUPPLIERS AND SUBCONTRACTORS	ESTIMATED \$ AMOUNT	SECTION 3 (YES OR NO)*

\* The numerical goal for committing to award to Section 3 business concerns is at least 10% of the total dollar amount of all Section 3 covered contracts for building trades work arising in connection with housing rehabilitation, housing construction, and other public construction; and, at least 3% of the total dollar amount of all other Section 3 covered contracts.

NOTE: A Section 3 business concern is defined as business: [1] that is 51% or more owned by Section 3 residents; or [2] whose permanent, full-time employees include persons, at least 30% of whom are currently Section 3 residents, or within three years of the date of first employment with the business concern were Section 3 residents; or [3] that provide evidence of a commitment to subcontract in excess of 25% of the dollar award of a subcontract to be awarded to business concerns that meet the qualifications set forth in number 10 and 20 of this definition. The Company certifies that it will make a good faith effort to utilize business concerns located in the City of Reading to the greatest extent feasible for Contract No. \_\_\_\_\_ in contracting for work to be performed in connection with the completion of the contract.

\_\_\_\_\_ COMPANY

DATE: \_\_\_\_\_

BY: \_\_\_\_\_  
(Authorized Signature)

## GENERAL PROVISIONS

## GENERAL PROVISIONS

G.1 SUB-HEADINGS. The paragraph headings are inserted in these provisions and the following specifications for convenience only and shall not be considered as interpreting or limiting the application of paragraphs.

G.2 DEFINITIONS. The following terms and expressions used in this contract and specifications shall be understood as follows:

The expression "The City" shall mean the City of Reading, Pennsylvania, the party of the first part to this contract.

The word "Engineer" shall mean the Engineer, Architect, or other official in direct charge of the work for the City or his authorized representative as designated by the applicable Director.

The word "Inspector" shall mean an inspector of the City assigned to the inspection of materials, structures and workmanship under this contract.

The word "Contractor" shall mean the party of the second part to this contract, whether a corporation, partnership, or individual.

The word "Specifications" shall mean the specifications describing the work, the drawings, and the general provisions.

The word "Drawings/Plans" shall mean the general drawings, plans, maps, diagrams or illustrations accompanying these specifications, and such supplementary drawings as may be furnished from time to time.

The term "Materials" as used herein includes, in addition, to materials incorporated in the project used or to be used in the operation thereof, equipment and other materials used and/or consumed in the performance of the work.

Wherever in the specifications the words "to be," "to be done," "if," "as," "directed," "required," "permitted," "ordered," "instructed," "designated," "considered necessary," or words of like import are used, it shall be understood that the direction, requirement, permission, order, instruction, designation or decision of the Engineer is intended, and similarly the words "approved," "acceptable," "satisfactory," or words of like import, shall mean approved by, acceptable or satisfactory to, the applicable Director or the Engineer, unless the context show that another meaning is plainly intended.

G.3 SPECIFICATIONS AND DRAWINGS. The specifications and drawings are intended to cover all of the work that is known to be required to effect a complete installation. They are intended to be mutually explanatory of each other, but should any discrepancy or inconsistency appear or any misunderstanding arise as to the import of anything contained in either the specifications or the drawings, the interpretation of the doubtful portions will be made by the Engineer, whose decision shall, in all cases, be final and binding on the Contractor. Any materials or workmanship obviously necessary to satisfactory completion shall be furnished and installed whether or not specifically shown or mentioned. Any corrections of errors or omissions in the specifications or drawings, or both, may be made by the Engineer when such correction is necessary for the proper fulfillment of their intention as determined by him/her. Figures shall have preference over scale in reading dimensions. Copies of the specifications and drawings shall be kept constantly at the work. Any supplementary or detail drawings which may be made by the Engineer subsequent to the date of this contract, relating to the work herein contemplated, as showing more particularly the details of the work to be done, or specifications and the drawings furnished by the Contractor and approved by the Engineer, are, and are to be held to be, controlling parts of this contract insofar as they do not conflict with other provisions of the contract.

If the Contractor, in the course of the work, finds any discrepancy between the plans and the physical conditions of the locality, or any errors or omissions in the plans or in the layout as given by the points and instructions furnished by the Engineer, it shall be his duty to inform the Engineer, in writing, and the Engineer shall promptly verify the same. Any work done after such discovery, until authorized, will be done at the Contractor's risk.

G.4 ENGINEER TO DECIDE. All work under this contract shall be done in a manner acceptable to the Engineer, who shall determine the amount, quality, acceptability and fitness of the several kinds of work and material which are to be paid for hereunder, and shall decide all questions which may arise as to measurements of quantities and the fulfillment of the conditions of this contract on the part of the Contractor.

G.5 WORK TO BE DONE IN ACCORDANCE WITH SPECIFICATIONS AND DRAWINGS. The work at all stages of its completion must conform with the specifications and drawings and with the lines and grades and other instructions of the Engineer, as given from time to time during the progress of the work. In no case will any work in excess of the requirements of the drawings as interpreted by the Engineer be paid for unless authorized in writing by the Engineer.

G.6 RIGHT TO MAKE CHANGES IS RESERVED. The City reserves the right to make alterations in the location, lines, grade, plan, form dimensions, numbers or materials of the work herein contemplated, either before or after the commencement of construction. If such alterations diminish the amount of work to be done, they shall not form the basis for a claim for damage or for loss of anticipated profits from the work which may be dispensed with; if they increase the amount of work, such increase shall be paid for according to the quantity of work actually done and at prices stipulated for such work under this contract. All work actually done under a unit price (where applicable) contract, whether more or less than the quantity estimated or specified, shall be paid for by the determined units, on the basis of the bid per unit in the proposal.

G.7 EXTENSION OF TIME. If the Contractor is delayed at any time in the progress of the work by any act or neglect of the City, or by City employees, or by any other contractor employed by the City, or by changes ordered in the work, or by strikes, lockouts, fire, unusual delay in transportation, unavoidable casualties or any causes beyond the Contractor's control, or by any cause which the Engineer shall decide to justify the delay, then the time of completion shall be extended for such reasonable time as the Engineer may decide subject to the approval of the applicable Director.

No such extension shall be made for delay due to rejection of defective materials or workmanship or for any delay occurring more than seven (7) days before claim therefore is made in writing to the Engineer. In the case of a continuing cause of delay, only one claim is necessary.

If no schedule or agreement stating dates upon which drawings shall be furnished is made, then no claim for delay shall be allowed because of any delay in the furnishing of drawings to the Contractor.

G.8 ADEQUATE PLANT AND METHODS. The Contractor shall furnish such construction plant and use such methods and appliances as will secure a satisfactory quality of work and a rate of progress which will insure the completion of the work within the time specified. Before starting the installation of the construction plant, the Contractor shall submit to the Engineer, for approval, a plan showing the general arrangement of the plant to be installed and the proposed facilities for storage of materials and equipment. If at any time the plant or any portion of it shall appear to the Engineer to be, or likely to become, inadequate, incomplete, faulty or unsafe, the Contractor shall promptly obey the orders of the Engineer to supplement or to remove or replace the same; but the failure of the Engineer to issue such orders shall not relieve the Contractor of his responsibility for the efficiency, adequacy and safe operation of the plant.

He shall cover and protect his work from damage, and all injury to the same, before completion of the contract.

He shall be financially responsible for all damage to the party of the first part or its property, to other contractors, to the neighboring premises, or to any private or personal property, for any cause whatsoever, during the period of the contract.

G.9 WORKERS. The Contractor shall employ only competent and skillful employees to do the work, and whenever the Engineer shall notify the Contractor, in writing, that any person on the work is, in his/her opinion, incompetent, unfaithful or disorderly, uses threatening or abusive language to any official having supervision of

the work, or is in any other way unsatisfactory, such person shall be discharged from the work and shall not again be employed on it except with the consent of the Engineer.

Neither party shall employ or hire any employee of the other party without the latter's consent.

G.10 WAGES. All employees directly employed on this work shall be paid wages which shall in no event be less than the minimum hourly wage rates for skilled, semi-skilled, and unskilled labor prescribed by the Commonwealth of PA Prevailing Wage Act, P.L. 987 as may be amended, if applicable.

G.11 PENALTY FOR FAILURE TO LIVE UP TO MINIMUM WAGE CONTRACT. A penalty shall be exacted from the Contractor in an amount equal to twice the difference between the minimum wage contained in the prescribed wage rates, and the wage actually paid to each laborer or mechanic for each day during which he has been employed at a wage less than that prescribed.

G.12 INSPECTORS TO REPORT VIOLATIONS. Every person assigned as an Inspector of the work to be performed under this contract, in order to aid in enforcing the fulfillment of the minimum wage requirements thereof, shall, upon observation or investigation, report to the applicable Director, all violations of minimum wage stipulations, together with the name of each laborer or mechanic who has been paid a wage less than that prescribed, and the day or days of such violation.

G.13 PENALTIES TO BE WITHHELD FROM MONEYS DUE THE CONTRACTOR.

All minimum wage violation penalties shall be withheld and deducted for the use of the City from any moneys due the Contractor by the City; provided, that if the Contractor subsequently pays to all laborers and mechanics the balance of the amounts stipulated as minimum wages, the City shall pay to the Contractor the amounts so withheld.

G.14 CONTRACTOR'S RESPONSIBILITY FOR EMPLOYEES. The Contractor

hereby assumes all responsibility for himself/herself, his/her agents and employees growing out of connection with the execution of the work called for by this contract, for the violation of, City ordinances and the laws governing contract work in the Commonwealth of Pennsylvania. The Contractor further agrees to hold the City of Reading harmless from all responsibility for employees on this work under the Workmen's Compensation Act of the Commonwealth of Pennsylvania, and to carry insurance on his/her employees, as provided thereby.

G.15 CONTRACTOR REPRESENTED ON THE WORK. The Contractor shall give personal attention constantly to the faithful prosecution of the work and shall be present, either in person or by a competent superintendent, on the site of the work, continuously during its progress. Such representative shall have authority to receive and to act without delay upon all instructions of the Engineer or assistants in the prosecution of the work in conformity with the contract.

In so far as it is practicable, all orders given by the Engineer to the Contractor shall be in writing. In those cases where orders are given orally they shall be confirmed in writing. Orders or directions, written or oral, from the Engineer, delivered to the Contractor's office shall be considered as delivered to the Contractor.

G.16 REPRESENTATIVE MUST BE PRESENT. In case the Engineer or a representative may at any time have occasion to give directions regarding the work for the reason that the same is not, in the Engineer's opinion, being carried out in accordance with the provisions of this contract, and should there be no responsible representative of the Contractor on the ground empowered to receive such instructions, the Engineer or a representative shall order that particular portion of the work to be stopped until such representative of the Contractor appears and receives instructions. It is hereby agreed that suspensions of the work for such cause shall not entitle the Contractor to claims for damage of any kind, nor to an extension of the time in which to complete the work to be done under this contract.

G.17 LEGAL ADDRESS OF CONTRACTOR. The address given in the bid or proposal upon which this contract is based is hereby designated as the legal address where all notices, letters and other communications to the Contractor shall be mailed or delivered prior to the beginning of the work provided for in this contract. The delivery at the above-named place, or depositing in a post-paid wrapper directed to the above place, in any post office box regularly maintained by the post office, of any notice, letter or other

communication to the Contractor, shall be deemed sufficient service thereof upon the Contractor and the date of said service shall be the date of such delivery or mailing.

**G.18 CHANGE IN ADDRESS.** Such address may be changed at any time by an instrument in writing executed and acknowledged by the Contractor and delivered to the City. Nothing herein contained shall be deemed to preclude or render inoperative the service of any notice, letter or other communication upon the Contractor personally.

**G.19 LAWS, ORDINANCES AND REGULATIONS.** The Contractor shall be fully informed as to all laws, ordinances and regulations in any manner affecting those engaged or employed in the work, or the materials used in the work, or in any way affecting the conduct of the work, and of all orders and decrees of bodies or tribunals having any jurisdiction over the same, if any discrepancy or inconsistency shall be discovered in this contract, specifications or drawings, in relation to any such law, ordinance, population, order or decree, the contractor shall immediately report the same in writing to the Engineer. At all times the Contractor shall observe and comply with all laws, ordinances, regulations, orders and decrees which may be in effect during the progress of this contract; and shall indemnify and save harmless the City and its officers and employees against any claim or liability arising from the violation of any legal requirement in the prosecution of this contract.

**G.20 INDEMNIFICATION OF CITY.** In case any action at law, proceeding in eminent domain, or suit in equity may or shall be brought against the party of the first part, or any of its offices or agents, for or on account of the failure, omission or neglect of the Contractor or the subcontractors, his/her or their employees or agents, to do and perform any of the covenants acts, matters, or things by this contract undertaken to be done or performed by the Contractor or subcontractors, his/her or their employees or agents, or for any injury or damage caused by the negligence of the Contractor or subcontractors, his/her or their employees or agents, or for damage or injury for which the Contractor undertakes responsibility under the provisions of this contract, the Contractor shall immediately assume and take charge of the defense to such actions, proceedings or suits in like manner and to all intents and purposes, as if said actions, proceedings or suits had been brought directly against the Contractor; and the Contractor shall also indemnify and save harmless the party of the first part, its officers and agents, of and from all loss, cost or damage whatever arising out of such actions, proceedings or suits as may or shall be brought as aforesaid.

**G.21 SUITS AND CLAIMS.** The Contractor agrees to indemnify and save harmless the City of Reading, the applicable Director, the Engineer, and their assistants, from all suits or actions of every name and description, either in law or in equity, including proceedings in eminent domain for the recovery of consequential damages, or for or on account of use of patented appliance, brought against them or either of them, or for any damage or injuries received or sustained by any party or parties, person or persons, natural or artificial, either in the performance or as a result of the work under this agreement, regardless of whether such suits, actions or proceedings brought are based or grounded upon negligence of the Contractor, the subcontractors, or his/her or their agents, servants or employees. The Contractor further agrees that all or as much of the monies due under this agreement as shall be or may be considered necessary by the applicable Director, shall or may be retained, without any liability of the City to the Contractor, for interest thereon because of the retention thereof, until all such suits, proceedings or claims have been settled or terminated, and satisfactory evidence to that effect furnished to the applicable Director, provided however, that no such monies shall be retained by the City after six (6) years following the completion and acceptance of the work under the contract, excepting for or on account of claims filed or suits or proceedings begun before the expiration of the applicable statute of limitations.

G.22 RESPONSIBILITY FOR INJURY. The Contractor shall assume all responsibility for loss, damage or injury to persons or property arising out of the nature of the work, from the actions of the elements, or from any unforeseen or unusual difficulties over which the City has no control, in addition to and without limiting the Contractor's liability under the other provisions of the contract.

G.23 CONTRACTOR'S CLAIMS FOR DAMAGE. If the Contractor claims compensation for any damage alleged to have been sustained by reason of any act or omission on the part of the City or any of its agents, he shall, within one (1) week after the sustaining of such damage, make a written statement to the Engineer of the nature of the damage sustained, and shall, on or before the fifteenth (15th) day of the month succeeding that in which any such damage shall have been sustained, file with the Engineer an itemized statement of the details and amounts of such damage, and unless such statement shall be made as so required, the claim for compensation shall be forfeited and invalid, and the Contractor shall not be entitled to payment on account of any such damage.

G.24 LINES AND GRADES. All lines and grades will be given by the Engineer, but the Contractor shall provide such material and give such assistance therefore as may be required by the Engineer, and the marks so given shall be carefully preserved. The Contractor shall keep the Engineer informed, a reasonable time in advance, of the time and places at which he/she intends to work, in order that lines and grades may be furnished and necessary measurements for record and payment made with the minimum inconvenience to the Engineer or delay to the Contractor. No claim for extra payment will be allowed for the cost to the Contractor of any material, work or delay occasioned by giving lines and grades, or making necessary measurements or inspections, as all such cost shall be considered to have been included in the price bid for the work.

G.25 INSPECTION. The Engineer will appoint such person or persons as may be deemed necessary to inspect properly the materials furnished and the work done under this contract, and to see that the same correspond strictly with these specifications. Such materials and workmanship shall always be subject to the approval of the Engineer, but no inspection, approval or acceptance of any part of the work herein contracted for or of the materials used therein, nor any payment on account thereof, shall prevent the rejection of said work or materials at any time thereafter during the existence of this contract, should said work or materials be found to be defective, or not in accordance with the requirements of the contract.

The Contractor shall permit, or secure permission for the Engineer or a duly authorized Inspector or representative to enter any manufactory, shop or other place where any material for, or part of the work is being prepared, manufactured or constructed, at any time when such work is in progress. The Contractor shall furnish and prepare, or cause to be furnished or prepared, without charge, all such assistance, appliances, samples of materials and test specimens as may be ordered by the Engineer or such Inspector or representative for the purpose of making official tests and investigations. The Engineer shall be notified of the time and place of preparation, manufacture or construction of any material for, or part of the work which he/she may wish to inspect before delivery at the site of the work. Such notification shall be given a sufficient time in advance of the beginning of the work on such material or part to allow arrangements to be made for inspection and testing.

G.26 NIGHT WORK. No night work, except for the inspection of lighting, requiring the presence of the Engineer or Inspector will be permitted except in case of emergency, and then only with the written consent of the Engineer and to such an extent as may be judged necessary.

G.27 SUNDAY WORK. No Sunday work will be permitted, except in case of great emergency, and then only with the written consent of the Engineer, and to such extent as is absolutely necessary.

G.28 NO WORK IN BAD WEATHER. No work shall be done under this contract when, in the opinion of the Engineer, the weather is unsuitable for good and careful work to be performed. No concrete work shall be done on days on which the temperature falls below 25 degrees Fahrenheit. Should the severity of the weather continue such that the work cannot be prosecuted successfully, the Contractor, upon order of the Engineer, shall cease all such work until directed to resume the same. In the latter case, suitable extension of time shall be allowed to compensate for time actually lost as provided for in Article G.7.

G.29. NOT TO SUBLET OR ASSIGN. The Contractor shall give personal attention constantly to the faithful prosecution of the work and shall not assign, transfer, convey, sublet or otherwise dispose of this contract, or

his/her title, right or interest in or to the same or any part thereof, nor shall the Contractor assign, by power of attorney or otherwise, any of the monies due or to become due, nor issue any order or orders or drafts on the Controller or Treasurer of the City of Reading for any monies due or to become due under this contract, unless by and with the consent of the City first duly had and obtained by resolution entered upon the minutes of said City.

**G.30 RIGHT OF PROPERTY IN MATERIALS.** Nothing in this contract shall be considered as vesting in the Contractor any right of property in materials used, after they shall have been attached to or incorporated in the work, nor in materials which have been estimated for partial payment, but all such materials, upon being so attached, incorporated or estimated, shall become the property of the City.

**G.31 DEFECTIVE MATERIALS AND WORKMANSHIP.** No materials of any kind shall be used until they have been examined and approved by the Engineer, who shall have full power to condemn any work and materials not in accordance with the specifications, and to require the Contractor to remove any work or materials so condemned. Inspections of the work shall not relieve the Contractor from any of his/her obligations to fulfill the contract as herein described, and defective work shall be made good, and unsuitable materials may be rejected, notwithstanding that such work or materials may have been previously overlooked by the Engineer and accepted or estimated for payment if the work or any part thereof shall be found defective at any time before the final acceptance of the whole work, the Contractor shall immediately make good such defect in a manner satisfactory to the Engineer, and if any material brought upon the ground for use in the work shall be condemned by the Engineer as unsuitable or not in conformity with the drawings or specifications, the Contractor shall forthwith remove such materials from the vicinity of the work. If the Contractor shall fail to remove or replace any defective or damaged materials or work after reasonable notice, the Engineer may cause such material or work to be removed or replaced, and the expense thereof shall be borne by the Contractor.

**G.32 RESPONSIBILITY FOR WORK.** The Contractor shall be held responsible for any or all materials or work to the full amount of all payments made thereon, and shall be required to make good, at his/her own cost, any injury or damage which said materials or work may have sustained from any source or cause whatever before its final acceptance.

**G.33 CONDITIONS UNDER WHICH CITY MAY COMPLETE WORK.** If the work to be done under this contract shall be neglected or abandoned, or the contract or any claim thereunder shall be assigned by the Contractor otherwise than as herein specified, or if at any time the Engineer shall be of the opinion, and shall so certify in writing to the City's representative, that the rate of progress is insufficient or that the work, or any part thereof, is unnecessarily or unreasonably delayed, or that the Contractor is violating any of the provisions of this contract or carelessly executing any portion of the work, the City may notify the Contractor and surety in writing to fulfill the conditions of the Contract; and should the Contractor or the surety fail to comply with said notice within ten (10) days, the City may notify the Contractor and the surety to discontinue all work, or any part thereof; and thereupon the Contractor and the surety shall discontinue said work, or said part thereof as the City may designate; and the City may thereupon, by contract or otherwise, as it may determine, complete the work or such part thereof, and charge the expenses thereof to the Contractor or the surety; and may take possession of and use therein such materials, animals, machinery, equipment, implements and tools of every description as may be found upon the work. The expense so incurred shall be deducted and paid by the City out of any monies then due or to become due the Contractor under this contract; or any part thereof; and in case such expense is less than the sum which would have been payable under this contract if the same had been completed by the Contractor, the Contractor shall be entitled to receive the difference, and in case such expense shall exceed the latter sum, the Contractor or the surety shall pay the amount of such excess to the party of the first part.

**G.34 ALL PARTS OF WORK COVERED.** The Contractor further agrees that the following clauses relative to the construction of the work shall apply to each and all of the separate parts of the work, as though specially mentioned under the different headings in the specifications:

Delivery of Materials - The Contractor shall be entirely responsible for delivery of all materials to the site of the work, making the arrangements therefore.

Engineer Shall Measure - No work shall be covered over or filled in until it shall have been inspected by the Engineer.

Materials Properly Stored - The materials to be used in construction shall be protected from deterioration and damage, and shall be so disposed of as not to endanger the work and in such manner that full access may be had at all times to all work under construction or completed.

Surplus Materials Removed - All parts of the work shall be kept in as neat and orderly condition as circumstances will permit and upon completion of the work, all surplus materials, earth, sand, rubbish and refuse of every kind, and all tools, machinery, equipment and other materials belonging to the Contractor shall be removed from the construction works and adjoining premises so as to leave everything in an acceptable condition, within a week after receipt of final certificate.

G.35 ESTIMATED QUANTITIES APPROXIMATE. In unit price contracts, the quantities of the various classes of work to be done and materials to be furnished under this contract, as estimated by the Engineer and listed in Specifications, attached hereto, are approximate and only for the purpose of comparing, on a uniform basis, the bids offered for the work under this contract; and neither the City nor the Council nor any member of the Council of the City of Reading is to be held responsible if any of the said estimated quantities shall be found to be not even approximately correct in the construction of the work; and the Contractor shall make no claim for damages on anticipated profits or loss of profit, because of a difference between the quantities of the various items of work actually done or materials actually furnished and the estimated quantities stated in the Specifications, or because of the entire omission of any of the quantities or items stated in the Specifications.

G.36 EXTRA WORK. The Contractor shall do any work not herein otherwise provided for which, in the opinion of the Engineer, is necessary for the proper completion of the work, but not such work will be allowed or paid for except on a written order of the Engineer, and there shall be no claim for extra work or materials or for damage sustained except under this Article. The extra work order issued by the Engineer shall specify the basis of payment for the extra work. Any extra work or changes in the work involving changes in the plans and/or specifications shall be approved by the applicable Director, prior to the execution of the work.

G.37 MONTHLY ESTIMATES. Current payments for work done under this contract will be made as follows: on invoices submitted by the Contractor and approved by the Engineer or Architect. Ten percent (10%) of each General Contractor invoice request shall be retained by the City on this contract until it is completed up to City codes and contract specifications and approved by a City Official or person representing a City Official Architect or Engineer.

It is further agreed and understood that inclusion of any portion of the work in the monthly estimate shall not be construed as final approval or acceptance of the same.

G.38 CONTRACTOR SHALL PREPARE FOR FINAL INSPECTION. Upon the completion of the work the Contractor shall tear down and remove all temporary buildings and structures built by the Contractor, remove and thoroughly clear away all debris, forms and surplus materials and leave the site of the work in a neat and satisfactory condition, and shall notify the Engineer when the work is ready for final inspection.

G.39 WORK TO BE PROPERLY PERFORMED. It is expressly understood that acceptance of work and materials during construction will not imply final acceptance of the work, if the final inspection shall disclose faulty workmanship or materials; and all work of whatever kind that, during its progress and before it is finally accepted, may become damaged from any cause, shall be repaired in a manner satisfactory to the Engineer or, if necessary, shall be broken up and removed and replaced with good and satisfactory work by the Contractor at his own expense. All work of every description shall be the best of its respective kind; and everything not particularly specified herein shall be done and finished in the best manner, and as is usual in first-class work of the several kinds.

Failure or neglect on the part of the Engineer, or any authorized agents to condemn or reject any bad or inferior work or materials shall not be construed to imply an acceptance of such work or materials, if such bad or inferior materials or work becomes evident at any time prior to the final acceptance of the work and the release of the Contractor by the Council of the City of Reading; nor shall it be construed as barring the City of Reading at any subsequent time from the recovery for damages of such sum of money as may be needed to build a new all portions of the work in which fraud was practiced or improper materials hidden, whenever found.

G.40 ACCEPTANCE AND FINAL PAYMENT. Upon receipt of written notice that the work is ready for final inspection and acceptance, the Engineer or Architect shall promptly make such inspection, and when he/she finds the work acceptable under the contract fully performed he/she shall promptly issue a final certificate, over his/her own signature, stating that the work provided for in this contract has been completed and is accepted under the terms and conditions thereof, and the entire balance found to be due the Contractor, including the retained percentage, shall be paid to the Contractor within (30) days after the execution of said final certificate.

G.41 WAIVER. Neither acceptance by the City, or any of its officers or employees, nor any order, measurement or certificate by the Engineer, nor any order by the City Council for payment of money, nor any payment for, nor any extension of time, nor any possession taken by the City or its officers or employees, shall operate as a waiver of any portion of this contract or of any power herein reserved to the City, or of any right to damage herein provided; nor shall any waiver of any breach of this contract be held to be a waiver of any other or subsequent breach. All remedies provided in this contract shall be taken and construed as cumulative; that is, in addition to each and every other remedy herein provided.

G.42 ACCEPTANCE OF FINAL CERTIFICATE. The acceptance by the Contractor of payment of the final estimate shall be conclusive evidence of acceptance and approval of estimates, accounting and deductions, and of full payment by the City for all work, labor, materials and services done or furnished hereunder, and of full satisfaction, discharge, release and waiver of all claims and demand of; or on behalf of the Contractor against the City, arising out of this agreement and the execution thereof. It is hereby further agreed that the Contractor shall not be entitled to demand or receive payment except in the manner set forth in this contract; and the Contractor further agrees that the final payment of the amount due under this contract and payment of the bills rendered for work done and materials furnished in accordance with any alterations of the same, shall release the City of Reading from any and all claims and liabilities on account of the work performed and materials furnished under said contract, or any alteration thereof.

G.43 MAINTENANCE AFTER COMPLETION. The Performance Bond shall remain in force for one (1) year from the date of completion and acceptance of the work under this contract, as security against any and all damage which may result from defects of materials or workmanship which may become apparent prior to the expiration of the one-year maintenance period. During this period the Contractor shall, promptly upon notification from the Engineer, repair all breaks and failures due to defects of material or workmanship at his own expense. If the Engineer shall deem it necessary and shall so direct, such repairs shall be made within twenty-four (24) hours after service of notice. If the Contractor unnecessarily delays making repairs ordered, or if delay would cause serious loss or damage, the City may undertake to have such repairs made or defects repaired without previous notice, and the expense of such repairs shall be borne by the Contractor or the surety. The Contractor shall be responsible for any damage resulting to any person or property from any violation of the guarantee and from unnecessary delays in making repairs.

G.44 PRICES. The City agrees to pay, and the Contractor agrees to receive, the price specified in the proposal submitted, as full compensation for furnishing all the materials called for, and for all labor and use of all machinery, equipment and tools necessary for executing the work contemplated in this contract; for all

royalties, for patents and patented materials, appliances and processes; also for all loss or damage arising out of the nature of the work, or from the action of the elements, or from any unforeseen reasons, obstructions or difficulties which may be encountered in the prosecution of the work, for all risks of every description connected with the work, and for all expenses incurred by or in consequence of the suspension of discontinuance of said work as herein specified, and for well and faithfully completing the work, and the whole thereof, according to the specifications and drawings and the requirements of the Engineer under them.

G.45 NO EXTRA COMPENSATION. The Contractor further agrees not to ask, demand, sue for, or recover for any extra compensation, for any materials furnished or work done under this contract, beyond the amounts payable for the several classes of work or kinds of materials herein enumerated, which shall be actually performed and furnished at the prices therefore herein agreed upon and fixed.

G.46 CONTRACTOR TO TAKE OUT ALL PERMITS. The Contractor shall take out all necessary permits required by agencies of the City of Reading and/or all other governmental agencies; shall give all notices required by law or ordinances; shall pay all fees and charges incident to the due and lawful prosecution of the work covered by the contract, and shall comply with all laws and regulations relating to buildings and public highways. All permits shall be at his expense.

G.47 NO CLAIM FOR EXTRA WORK. No claim for extra work or material shall be allowed to the Contractor, unless before the performance of all such extra work the applicable Director shall have first authorized the same in writing, and the price or prices to be paid therefore shall first have been agreed upon in writing between the Director and the Contractor, and the same shall have been done or furnished under a written order from the Director given before the performance of such extra work or the furnishing of such extra materials. All claims for extra work or materials in any month shall be made to the Director in writing before the fifteenth (15th) day of the following month, and failing to make such claim within the time required, the right of the Contractor to extra pay for such extra work or materials shall be deemed to have been waived and forfeited.

G.48 WORK TO BE DONE TO THE SATISFACTION OF THE CITY ENGINEER. All the work under this contract shall be done to the satisfaction of the City Engineer, who shall in all cases determine the amount, quality, acceptability and fitness of the several amounts of work and materials which are to be paid for hereunder and shall decide all questions which may arise as to the measurement of quantities in the fulfillment of this contract on the part of the Contractor, and shall determine all questions respecting the true construction or meaning of the plans and specifications, and the determination and decision thereon shall be final and conclusive; and such determination and decision, in case any question shall arise, shall be a condition precedent to the right of the Contractor to receive any money hereunder.

G.49 ENGINEER TO INSPECT AND REJECT. The Engineer shall inspect the materials furnished and the work done, and see that the same strictly correspond to the specifications, and he shall at all times have free access to the works, storehouse and yard of the Contractor, and shall be privileged to take such samples therefrom as he may deem necessary; and if the work, or any material brought on the grounds for the use of the work, or selected for the same, shall be condemned by the Engineer, as unsuitable or not in conformity with the specifications, the Contractor shall forthwith remove such materials from the work.

Before issuance of the final certificate the Contractor shall furnish evidence satisfactory to the Engineer that all payrolls, materials, bills and other indebtedness connected with the work have been paid.

It is understood and agreed by the parties hereto that the final estimate of the Engineer shall be evidence of the amount of work performed by the Contractor under and by virtue of this agreement, and shall be taken as the full measure of the compensation to be received by the Contractor. The aforesaid estimate shall be based upon the contract price for the furnishing of all the different materials and labor, and the performance of all the work mentioned in this contract, including the specifications, and where there may be any ambiguity therein, the Engineer's instructions shall be considered explanatory and the decision shall be final.

No inspection, approval or acceptance of any of the work herein contracted for, or of the materials used herein, or any payment on account thereof shall prevent the party of the first part from objecting to the acceptance of said work or materials at any time during the existence of this contract. Neither the inspection of the applicable Director, or Division Head, or the City Engineer or any of their employees nor any order, measurement or certificate by the City Engineer nor any order by the Director for the payment of money, nor any payment for, or acceptance of, the whole or any part of the work, by the Director of the Division of Planning, nor any extension of time, nor any possession taken by the Director or his employees, shall operate as a waiver of any provision of this contract, or any power herein reserved to the party of the first part, or of any right to damage herein provided; nor shall any waiver of any breach of this contract be held to be a waiver of any other subsequent breach.

Any remedy provided in this contract shall be taken and construed as cumulative; that is, in addition to each and every other remedy herein provided; and in addition to all other suits, actions or legal proceedings the party of the first part shall be entitled to as of right.

**G.50 CONTRACTOR NOT TO DISCOMMODE PRIVATE COMPANIES.** The Contractor shall afford while the work is underway, the necessary facilities to any and all companies owning railway tracks, pipes, subway ducts, or other surface, sub-surface or super-surface construction on the line of the work, in the preservation of the same from injury, all without charge therefore the expense to the City.

**G.51 EXAMINATIONS.** At any time before or after completion of the work, should the City Engineer require it, the Contractor shall make such openings, and to such extent, through such part or parts of the work, as the City Engineer may direct, and shall restore the work so distributed to the satisfaction of the City Engineer; and should the work, in the opinion of the City Engineer, whose decision shall be final and conclusive therein, be found faulty in any respect, the whole of the expense incurred thereby shall be defrayed by the Contractor, according to and upon the prices herein set forth, but if otherwise, by the City.

SUPPLEMENTARY GENERAL TERMS & CONDITIONS

SUPPLEMENTARY GENERAL CONDITIONS

PENNSYLVANIA HUMAN RELATIONS ACT CONDITIONS

GENERAL

The CONTRACTOR shall conform to the provisions of Act No. 222 (October 27, 1955) and as amended and supplemented, known as the "Pennsylvania Human Relations Act", and in accordance with the provisions of the Regulations of the Pennsylvania Human Relations Commission, as adopted March 8, 1974, 4 Pa.B. 409, amended March 7, 1975, 5 Pa. B. 434, 16 Pa. Code Chapter 49.

NON-DISCRIMINATION PROVISION

During the term of this CONTRACT, the CONTRACTOR shall agree to the following provisions

(a) The CONTRACTOR shall not discriminate against any employee, applicant for employment, independent contractor or any other person because of race, color, religious creed, ancestry, national origin, age or sex.

The CONTRACTOR shall take affirmative action to ensure that applicants are employed, and that employees or agents are treated during employment, without regard to their race, color, religious creed, ancestry, national origin, age or sex. Such affirmative action shall include, but is not limited to, the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training.

The CONTRACTOR shall post in conspicuous places, available to employees, agents, applicants for employment and other persons, a notice, to be provided by the OWNER, setting forth the provisions of this nondiscrimination clause.

(b) The CONTRACTOR shall in advertisements or requests for employment, placed by it or on its behalf, state that all qualified applicants will receive consideration for employment without regard to race, color, religious creed, ancestry, national origin, age or sex.

(c) The CONTRACTOR shall send each labor union or workers' representative or understanding, a notice advising said labor union or workers' representative of its commitment to this nondiscrimination clause. Similar notice shall be sent to every other source of recruitment regularly utilized by the CONTRACTOR.

## SUPPLEMENTARY GENERAL PROVISIONS

### 1. Contract Work Hours and Safety Standards Act Provisions

The Contractor, if the contract is in excess of \$2,000, and any of his subcontractors, shall comply with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 USC 327- 330) as supplemented by Department of Labor Regulations contained in 29 CFR Part 5.

Under Section 103 of the Act, the Contractor and any of his subcontractors, shall be required to compute the wages of every mechanic and laborer on the basis of a standard work day of eight hours and a standard work week of forty hours. Work in excess of the standard work day or week is permissible, provided the worker is compensated at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of eight hours in any calendar day or forty hours in any work week. Section 5 of the Federal Labor Standards Provisions, for the Community Development Block Grant Program, dated 9/75, and appearing elsewhere in this Contract, sets forth in detail the Section 103 requirements.

Section 107 of the Act provides that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous to his health and safety, as determined under construction, safe and health standards promulgated by the Secretary of Labor. These requirements do not apply to the purchase of supplies or materials or articles ordinarily available on the open market.

### 2. Lead-Based Paint Hazard

The Contractor is hereby specifically made aware of the HUD lead-based paint regulations, 24 CFR, Part 35, which are applicable to the construction or rehabilitation of residential structures. To the extent that the subject matter of this Contract involves residential structures, the Contractor will comply with the lead-based paint regulations.

### 3. Compliance with Air and Water Acts

This Agreement is subject to the requirements of the Clean Air Act, as amended, 42 USC 1857 et seq., the Federal Water Pollution Control Act, as amended, 32 USC 1251 et seq., and the regulations of the Environmental Protection Agency with respect thereto, at 40 CFR Part 15, as amended from time to time.

The Contractor and any of its subcontractors for work funded under this Agreement which is in excess of \$100,000 agree to the following requirements:

- (1) A stipulation by the Contractor or subcontractors that any facility to be utilized in the performance of any non-exempt contract or subcontract is not listed on the List of Violating Facilities issued by the Environmental Protection Agency (EPA) pursuant to 40 CFR 15.20.
- (2) Agreement by the Contractor to comply with all the requirements of Section 114 of the Clean Air Act, as amended, (42 USC 1857c-8) and Section 308 of the Federal Water Pollution Control Act; as amended, (33 USC 1318) relating to inspection, monitoring, entry, reports and information, as well as all other requirements specified in said Section 114 and Section 308, and all regulations and guidelines issued thereunder.
- (3) A stipulation that as a condition for the award of the Contract prompt notice will be given of any notification received from the Director, Office of Federal Activities, EPA, indicating that a facility utilized or to be utilized for the Contract is under consideration to be listed on the EPA List of Violating Facilities.
- (4) Agreement by the Contractor that he will include or cause to be included the criteria and requirements in paragraph (1) through (4) of this Section in every non-exempt subcontract and requiring that the Contractor will take such action as the Government may direct as a means of enforcing such provision.

In no event shall any amount of the assistance provided under this Agreement be utilized with respect to a facility which has given rise to a conviction under Section 113(c)(1) of the Clean Air Act or Section 309(c) of the Federal Water Pollution Control Act.

4. Interest of Members, Officers, or Employees of Public Body, Member of Local Governing Body, or Other Public Officials

No member, officer, or employee of the Public Body, or its designees or agents, no member of the governing body of the locality in which the program is situated, and no other public official of such locality or localities who exercises any functions or responsibilities with respect to the program during his tenure or for one year thereafter, shall have any interest, direct or indirect, in any contract or subcontract, or the proceeds thereof, for work to be performed in connection with the program assisted under the Agreement.

5. Prohibition Against Payments of Bonus or Commission

The assistance provided under this Agreement shall not be used in the payment of any bonus or commission for the purpose of obtaining HUD approval of the application for such assistance, or HUD approval of applications for additional assistance, or any other approval or concurrence of HUD required under this Agreement, Title I of the Housing and Community Development Act of 1974 or HUD regulations with respect thereto; Provided, however, that reasonable fees or bona-fide technical consultant managerial or other such services, other than actual solicitation, are not hereby prohibited if otherwise eligible as program costs.

## SUPPLEMENTAL GENERAL CONDITIONS

### FEDERAL AND STATE STATUTES

This Section is a listing of Federal and State statutes, rules, and regulations dealing with the prevention of environmental pollution and the preservation of public natural resources that could effect the project. The **CONTRACTOR** shall be responsible for compliance with all applicable statutes, rules and regulations, including, but not limited to the following.

#### PENNSYLVANIA STATUTES AND REGULATIONS

The Clean Streams Law, Act of June 22, 1937, P.L. 1987, as amended 35 P.S. 691 et seq. and Chapters 73, 91, 92, 93, 97, 101, and 104 of Department of Environmental Resources regulations promulgated thereunder.

Pennsylvania Sewage Facilities Act, Act of January 24, 1966, P.L. 1535, Subsection 1 (35 P.S., Subsection 750.1) and Chapters 71 and 73 of Department of Environmental Resources regulations promulgated thereunder.

Air Pollution Control Act, Act of January 8, 1960, P.L. 2119, as amended, October 26, 1972, 35 P.S. Subsection 4001 et seq. and Chapters 121, 123, 127, 129, 131, 135, 137, 139, and 141 of Department of Environmental Resources regulations promulgated thereunder.

Surface Mining Conservation and Reclamation Act, Act of May 31, 1945, P.L. 1193, as amended, 52 P.S. 1396.1 et seq. and Chapter 77 of Department of Environmental Resources regulations promulgated thereunder,

Bituminous Coal Open Pit Mining Conservation Act, Act of May 31, 1945, P.L. 1198, 52 P.S. 1396.1 et seq.

Pennsylvania Solid Waste Management Act, Act of July 31, 1968, P.L. (No. 241), 35 P.S. 6001 et seq. and Chapter 75 of the Department of Environmental Resources regulations promulgated thereunder.

Dams and Encroachments Act, Act of June 25, 1913, P.L. 555, Subsection 4, as amended, 32 P.S. 684; Water Power and Water Supply Act, Act of June 14, 1923, P.L. 704, Subsection 7, 32 P.S. 597; Section 1920-A of the Administrative Code, 71 P.S. 510-520 and Chapter 105 of the Department of Environmental Resources regulations promulgated under all three Acts.

Water Well Drillers License Act, Act of Way 29, 1956, P.L. 1840 Subsection 12, 32 P.S. 645.12, and Chapter 107 of the Department of Environmental Resources regulations promulgated thereunder.

Waterworks Act, Act of April 22, 1905, P.L. 260, as amended, 35 P.S. 711 et seq., and Sections 1918-A, 1920-A of the Administrative Code 71 P.S. Subsection 510-20 and Chapter 109 of the Department of Environmental Resources regulations promulgated under both Acts.

Sections 1917-A and 1920-A of the Administrative Code, 71 P.S. 510-17 and 510-20 and Chapters 179, 191, 201, 203, 241, and 243 of the Departmental Regulations issued thereunder.

Atomic Energy Act, Act of January 28, 1966, P.L. 152s, Subsection 301 (73 P.S. 130I) and Chapters 221, 227, 229, 231, 233, and 235 of the Department's Regulations issued thereunder.

Act of November 18, 1968, P.L. (No. 322), Subsection 4, (63 P.S. 1004) and Chapters 301, 303, and 305 of the Department's regulations promulgated thereunder,

The State-Pennsylvania Environmental Bill of Rights, Article 1, section 27 of Pennsylvania Constitution.

Land Acquisition Act, Act of June 22, 1964, P.L. 131, 72 P.S. 3946.1 et seq.

Act authorizing Commonwealth to acquire open space, Act of January 19, 1968, P.L. 992, 3 P.S. 5001 et seq.

Land and Water Conservation and Reclamation Act, Act of January 19, 1963, P.L. 996, 32 P.S. 5101 et seq.

Land Recycling and Environmental Remediation Standards Act of May 19, 1995, P.L. 4, No. 2, as amended, 35 P.S. 6062.301 et seq.

Act authorizing covenants with land owners for open space, Act of January 13, 1966, P.L. 1292, 16 P.S. 11941 et seq.

Coal Land Improvement Act, Act of July 19, 1965, P.L. 216, 52 P.S. 30.101 et seq.

Soil Conservation Law Act, Act of May 15, 1945, P.L. 547, 3 P.S. 849 et seq.

Susquehanna River Basin Compact, Act of July 17, 1968, P.L. 32 P.S. 820.1 et seq.

Wheeling Creek Watershed Protection and Flood Prevention Commission Act of August 2, 1967, P.L. 189, 32 P.S. 819.1 et seq.

Disaster Relief Act, Act of July 6, 1961, P.L. 515, 71 P.S. 1689.101 et seq.

Brandywine River Valley Compact, Act of September 9, 1959, P.L. 848, 32 P.S.

Great Lakes Basin Compact, Act of March 22, 1956, P.L. 1333, 32 P.S. 817.1-817

An Act protecting water supply sources, Act of January 18, 1952, P.L. 2148 35 P.S. 731, 732

Stream Clearance Act of June 5, 1947, P.L. 420, 32 P.S. 659

Ohio River Valley Sanitation Compact, Act of April 2, 1945, P.L. 103, 32 P.S., 816.1 et seq.  
Potomac River Valley Compact, Act of May 29, 1945, P.L. 1134 32 P.S. 741 et seq.

Act of June 4, 1945, P.L. 1383, 32 P.S. 751.1 et seq.

Uniform Interstate Air Pollution Agreements Act, Act of February 17, 1972

Act limiting the amount of noise produced by motor vehicles, providing noise testing and fixing penalties, Act of January 26, 1972

Act regulating vehicle emission systems, Act of June 16, 1972

Act creating a weather modification board, Act of 449, January 19, 1968, P.L. 1024, 3 P.S. 1101 et seq.

Hazardous Substances: Transportation Act, 1966 of (November 9, 1966), 75 P.S., 2101 et seq., P.L. 657

Vehicle Code, Act of (April 29, 1959), 75 P.S. 101 et seq., P.L. 58, as amended.

State Highway Law, Act of (June 1, 1945), 36 P.S. 670-101 et seq., P.L. 1242, as amended.

Outdoor Advertising Control Act of 1971, Act of (December 15, 1971), 32 P.S. 2718.101 et seq.

Regulating snowmobiles, providing registration and fees, and providing penalties, Act of (August 12, 1971)

Providing for roadside landscaping and scenic development, Act of (September 27, 1966), 36 P.S. 670-413.1, P.L. 94

Act restricting the establishment and maintenance of junkyards along highways, Act of (July 28, 1966), 36 P.S. 2719.1 et seq., P.L. 91

Camp Regulation Act, Act of (November 10, 1959), 35 P.S. 3001 et seq., P.L. 14

The Fish Law of 1925, Act of May 2, 1925, P.L. 448, as amended, 30 P.S. 1 et seq.

Act creating the "Pennsylvania Historical and Museum Commission", Act of June 6, 1945, P.S. 61, 62, 70, 104, 142, 158, 716, P.L. 1398

Relating to wildlife land management and research, Act of (June 24, 1939), 34 P.S. 1311.944, P.L. 239

Penal Code, Act of (June 24, 1939) 18 P.S. 4101 et seq., P.L. 872, as amended

Workmen's Compensation Act, Act of (June 21, 1939), 77 P.S. 1 et seq., P.L. 15

Occupational Disease Act, Act of (June 21, 1939), 77 P.S. 1201 et seq., P.L. 5

The Game Law, Act of (June 3, 1937), 34 P.S. 1311.1 et seq., P.L. 1225

Uniform Standards Code for Mobile Homes, Act 69, May 11, 1972

Industrial Housing Act, Act 70, May 11, 1972

Pennsylvania Meat and Poultry Hygiene Law of 1968, Act of July 9, 1968, P.L. 31 P.S. 438.1 et seq.

Housing Agency Law, P.L. 1688 (1959), 35 P.S. 1680, 101 et seq.

Pennsylvania Pesticide Act of 1957, Act of (1957), 63 P.S. 390-9, P.L. 248

Local Health Administration Law, Act of (August 24, 1951) 16 P.S. 1201 et seq. P.L. 1305

Housing and Redevelopment Assistant Law, Act of (May 20, 1949) 35 P.S. 166l et seq., P.L. 1633

Housing and Redevelopment Assistance Law, Act of (May 20, 1949) 72 P.S. 5860 612; 5860 701, 5860 703; P.L. 579

Pennsylvania Plant Pest Act of 1937, Act of (April 21, 1937) 3 P.S. 214-1 et seq., P.L. 318

General Safety Law, Act of (May 18, 1937), 43 P.S. 25-1 et seq., P.L. 654

Explosives Law, Act of (July 1, 1937), 73 P.S. 151 et seq., P.L. 2681

Milk Sanitation Law, Act of (1935), 31 P.S. 645 to 660g

Industrial Park Loans, Act of (August 31, 1971) Authorizing the Department of Community Affairs to develop and administer an Urban Technical Assistance Program, Act of (March 21, 1970), 71 P.S. 1049 101 et seq., P.L. 195

Development Act, Act of (May 6, 1968), 73 P.S. 361 et seq.

Urban Redevelopment Law, Act of (November 16, 1967), 35 P.S., 1704. 1 et seq., P.L. 498

Industrial Development Assistance Law, Act of (May 31, 1956), 73 P.S. 351 et seq., P.L. 1911

Industrial Development Authority Law, Act of (May 17, 1957), 73 P.S. 301 et seq., P.L. 1609

Commerce Law, Act of (May 10, 1939), 71 P.S. 1709-1 et seq., P.L. 111

Act 484 (August 23, 1961) bringing clay mines within the scope (Subsidence Insurance) of the Act, Act of (July 1, 1971)

Refuse Disposal Control Act, Act of (September 24, 1968), 52 P.S. 3051 et seq.

Bituminous Mine Subsidence and Land Conservation Act, Act of (April 27, 1966), 52 P.S. 1406.1 et seq., P.L. 31

Interstate Mining Compact, Act of (May 5, 1966), 52 P.S., 3251 et seq., P.L. 40

Pennsylvania Anthracite Coal Mine Act, Act of (November 10, 1965), 52 P.S., 70-101 et seq., P.L. 721  
providing funds to alleviate pollution of streams from abandoned coal mines, Act of (December 15, 1965), 35  
P.S. 760.1, P.L. 1075

Coal Mine Subsidence Insurance Fund, Act of (August 23, 1961), as amended, 51 P.S. 3201 et seq., P.L.  
1068

Oil and Gas Conservation Law, Act of (July 25, 1961), 58 P.S. 401 et seq., P.L. 825

Laws relating to bituminous coal mines, Act of (July 17, 1961), 52 P.S. 701-101 et seq., P.L. 659

Relating to Subsidence Safety, Anthracite Coal, Act of (Sept. 20, 1961), 52 P.S. 672.1 et seq., P.L. 1538

Relating to Mining in Safety Zones, Act of (December 22, 1959), 52 P.S. 3101 et seq., P.L. 1994

Providing for anthracite mine drainage, Act of (July 7, 1955), 52 P.S. 687 et seq., P.S. 258

Coal Mine Sealing Act of 1947, Act of (June 30, 1947), 52 P.S. 28.1 et seq.

#### FEDERAL STATUTES & REGULATIONS

Airport and Airway Development Act of 1970, 49 U.S.C. 1701, 1703, 1717-1222.

Anadromous Fish Conservation Act, 16 U.S.C. 7579-757f.

Appalachian Regional Development Act of 1965, 40 App. U.S.C., Subsection 1,2, 202, 205, 206, 212.

Atomic Energy Act of 1954 42 U.S.C., Sec. 2011

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7 U.S.C. 1010:	36 C.F.R. 213, 7 C.F.R. Part 15 111-161
1011:	55 C.F.R. 211, 231, 7 C.F.R. Part 15, 600, 1800
1012:	7 C.F.R. Part 5

Black Bass Act		
16 U.S.C.	851	
852		
852a		
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Clean Air Act		
42 U.S.C.		1857-1857L, 1857a, 1857b, 1857b-1, 1857c to 1857c-9, 1857d, 1857d-1, 1857e, 1857-6b,1857f t. 1857f-5a, 1857-6 to 1857f-6c, 1857f-6e, 1857f-7, 1857f-9 to 1857f-12, 1857g, 1857h to 1857h- 1857i, a857j to 1857-3, 1857k, 1857l, 1858, 1858a.
42 U.S.C,		1857 et seq. 40 C.F.R. Parts 30, 51 1857b 42 C.F.R. Parts 52,61 1857c 40 C.F.R. Part 81 1857f-3 19 C.F.R. Part 12 1857f-6b 40 C.F.R. Part 30 1857f-6c 40 c,F.R. Part 79 1857g 40 C.F.R. Parts 81 and 85 42 C.F.R. Parts 52 and 61 1857h-2 45 C.F.R. Part 54 1858 et seq. 40 C.F.R. Part 30
Consolidated Farmers Home Administration Act of 1961		
7 U.S.C.		1921 7 C.F.R. Part 1800 1922; 7 C.F.R. Part 15, 1821 1923 7 C.F.R. Part 15, 1821 1924 7 C.F.R. Part 15, 1821 1925 7 C.F.R. Part 1821 1926 7 C.F.R. Part 15 1942 7 C.F.R. Part 15 1961-1967 7 C.F.R. Part 1832
Delaware River Basin Compact		75 Stat. 688 Enacted 1961
Department of Transportation Act,		29 U.S.C. 213 (a) (5), 40 U.S.C. 201, 206; 49 U.S.C. 1653
Dingell-Johnson Sport Fish Restoration Act,		23 U.S.C. 204; 23 C.F.R. Part 15
Endangered Species Conservation of 1969,		16 U.S.C., 668aa-668cc-5
Environmental Protection Agency Regulations,		40 C.F.R. Part 15
Federal Aid Highway Act of 1968,		49 U.S.C. 1653, 23 U.S.C. 131, 138, 205, 319;
		23 U.S.C. 131 23 C.F.R. Parts 20, 21, 22 205 36 C.F.R. Parts 212

National Historic Preservation Act of 1966

16 U.S.C.

Federal Insecticide, Fungicide, and Rodenticide Act, 7 U.S.C.

135, 135a, 135b-k

7 U.S.C. 136b 10 C.F.R. Part 164 7 C.F.R. Part 760

135d 40 C.F.R. Part 162, 164

Federal Power Act

16 R.S.C. 803; 18 C.F.R. Parts 4-8, 11-12, 131;

16 R.S.C. 828

Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et. seq. 201, 302, 303, 304, 306, 307, 308, 310, 311, 312, 316, 318, 401, 402, 403, 404, 405

Federal Water Project Recreation Act,

16 U.S.C. 460L-5, 460L-72 to 460L-21

16 U.S.C. 460L-5 36 C.F.R. Part 251

Fish and Game Sanctuary Act, 16 U.S.C. 694-694b

Fish Restoration and Management Project Act, 16 U.S.C. 777-777k, 777a, 777c, 777c-777g, 16 U.S.C. 777 43 C.F.R. Part 17

Fish and Wildlife Act of 1956, 16 U.S.C. 742a-742j

16 U.S.C. 742c 50 C.F.R. Part 250

742c 50 C.F.R. Part 255

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266-279

Fish and Wildlife Coordination Act, 16 U.S.C. 661-666c

Fisherman's Protective Act of 1967, 22 U.S.C. 1971-1976

Flood Control Act of 1944, 33 U.S.C. 701, 708, 16 U.S.C. 1001, 1002, 4601, also see: River & Harbor Act of 1962 and Flood Control Act of 1962; 33 U.S.C. 426e, 596 and River & Harbors Flood Control Act of 1965, 42 U.S.C., 1962d-4 16 U.S.C. 460d 32 C.F.R. Part 300 36 C.F.R. Parts 311-326, 16 U.S.C. 1001, 1002, 7 C.F.R. Parts 15, 600

Game and Wildlife Act, 16 U.S.C, 715d-1, 715d-2, 715e, 715e-1,

715k-1, 715s, 718b-818e;

16 U.S.C. 715s

18 U.S.C. 42, 44, 2054, 3112;

43 C.F.R. Part 17

50 C.F.R. Parts 28, 34

18 U.S.C. 42

19 C.F.R. Part 12

50 C.F.R. Part 13

Highway Beautification Act of 1965, 23 U.S.C. 131,

23 C.F.R. Parts 20, 21 @ 22

Land and Water Conservation Fund Act of 1965, 16 U.S.C. 460L-4 to 460L-11

Migratory Bird Conservation Act, 16 U.S.C. 715-715r, 715g, 715c, 715i-715k,  
16 U.S.C. 715i 36 C.F.R. Part 322  
43 C.F.R. Parts 5, 4250  
50 C.F.R. Parts 25-33, 60

Migratory Bird Treaty Act, 16 U.S.C. 703-708, 709a, 710, 668aa, 668b, 668d-1  
60 U.S.C. 668aa, 50 C.F.R. Part 17  
668bb 50 C.F.R. Parts 70, 71, 31, 35  
668cc-1 50 C.F.R. Part 17

Multiple-Use Sustained Yield Act of 1966, 16 U.S.C. 475, 528, 531  
16 U.S.C. 475 36 C.F.R. Part 221  
528-531 36 C.F.R. Part 212, 221, 251-261

Federal Noise Control Act of 1972, 42 USCA Section 1858

National Emission Standards Act, 42 U.S.C. 1857f-1 to 1857f-7

National Environmental Policy Act of 1969, 42 U.S.C. 4311, 4331-4335, 4341-434  
42 U.S.C. 4321 et. seq. 40 C.F.R. Part 30  
45 C.F.R. Part 640  
4332 10 C.F.R. Part 50  
14 C.F.R. Part 1204

National Trails System Act, 16 U.S.C. 1241-1249,  
36 C.F.R. Part 251

National Wildlife Refuge System Administration Act of 1966,  
16 U.S.C. 668dd, 668ee  
16 U.S.C. 668dd 50 C.F.R. Part 32

Oil Pollution Act of 1961, 33 U.S.C. 1001-1015  
33 U.S.C. 1007 46 C.F.R. Parts 2, 35, 78, 93, 97,  
167, 196  
1008-1011 32 C.F.R. 151

Recreational Use of Conservation Areas Act, 16 U.S.C. 450K, 50 C.F.R.  
Parts 25-29, 31-33, 70-71

Refuse Act of 1899, 33 U.S.C. 401, 403-4, 406-9, 411-415

Resource Recovery Act of 1970, 42 U.S.C. 3251-3254f, 3256-3259

River and Harbor Act of 1958, 33 U.S.C. 610

Soil Conservation and Domestic Allotment Act  
16 U.S.C. 590-a-590-g, 590i, -590o  
16 U.S.C. 590a-7 C.F.R. Part I5;  
16 U.S.C. 5909 7 C.F.R. Parts 701-706, 708, 780

Solid Waste Disposal Act,  
42 U.S.C. 3251-3259, 40 C.F.R. Part 30

Water Bank Act, 16 U.S.C. 1301-1311

Watershed Protection and Flood Prevention Act,  
16 U.S.C. 1001-1008, 1006a, 1006b  
16 U.S.C. 1001-1007 7 C.F.R. Part 600

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7 C.F.R. Part 1800, 1861

Wetlands Acquisition Act, 16 U.S.C. 715K-3 to 715K-5

Wilderness Act, 16 U.S.C. 1131-1136;

36 C.F.R. Parts 251-261,

43 C.F.R. Part 19

50 C.F.R. Part 35

Wildlife Restoration Act, 16 U.S.C. 669-669b, 669c-669i

16 U.S.C. 669

43 C.F.R. Part 17

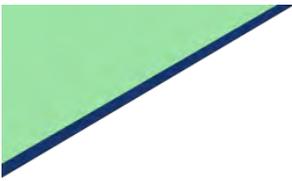
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50 C.F.R. Part 30

Wild and Scenic Rivers Act, 16 U.S.C. 1271-1287

ATTACHMENT 1

TECHNICAL SPECIFICATIONS



CITY OF READING  
SCHLEGEL PARK POOL  
REA-18-350  
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Stormwater Utility Drainage Pipe 334100

## SECTION 011000 - SUMMARY

### PART 1 - GENERAL

#### 1.1 SUMMARY

##### A. Section Includes:

1. Project information.
2. Project Time for Completion
3. Work covered by Contract Documents.
4. Work to be Performed by the Owner.
5. Access to site.
6. Work restrictions.
7. Specification and drawing conventions.
8. Contractor Qualifications.

##### B. Related Requirements:

1. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

#### 1.2 PROJECT INFORMATION

##### A. Project Identification: Schlegel Park Pool.

1. Project Location: 299 N. Carroll Street, Reading PA 19611.

##### B. Owner: City of Reading

815 Washington Street, Reading PA 19601

1. Owner's Representative: Cindy Castner, Public Property Manager.  
Phone: 610-655-6220

##### C. Engineer: CEDARVILLE Engineering Group, LLC.

159 E. High Street, Suite 500, Pottstown, PA 19464

1. Engineer's Contact: Kyle R. Turner, P.E.  
Phone: 610-705-4500

#### 1.3 PROJECT TIME FOR COMPLETION AND LIQUIDATED DAMAGES

##### A. Time of the Essence

1. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the

Contract. The Contractor shall make every effort to complete the work prior to the substantial completion date.

2. Substantial Completion shall be defined as the pool being placed back into operation.
3. Final Completion shall be defined as all Punchlist and Contract Requirements are completed to the satisfaction of the City of Reading and its representatives.

B. Contract Times: Days

1. The Work will be substantially completed on or before 60 days after the date when the Contract Times commence to run, starting the day a Notice to Proceed is issued and completed and ready for final payment within 75 days after the date when the Contract Times commence to run, starting the day a Notice to Proceed is issued.

#### 1.4 WORK COVERED BY CONTRACT DOCUMENTS

A. The Project Work is defined by the Contract Documents and consists of the following:

1. Pool Rehabilitation:
  - a. Selective demolition of the existing pool and wading pool.
  - b. Installation of a new gutter system, pool return and gutter piping, pool interior finishes, and electrical bonding.
  - c. Installation of a new wading pool and water features.
2. Pool Area Renovations:
  - a. Removal of existing concrete pool decking;
  - b. Removal and capping of existing stormwater drainage system around the pool;
  - c. Installation of a trench drain drainage system, with associated piping, catch basin and connection to stormwater system to remain;
  - d. Replacement of an existing yard drain with a catch basin;
  - e. New concrete pool decking.

B. Type of Contract.

1. Project will be constructed under a single prime contract.

#### 1.5 WORK TO BE PERFORMED BY THE OWNER

1. The Owner shall drain the pool of any accumulated water prior to the start of construction. The Contractor shall give the owner at least 7 days' notice prior to the start of work to drain any accumulated water.
2. The Owner shall unlock the gate at the start of construction to permit the Contractor to place a second lock on the gate.

## 1.6 ACCESS TO SITE

- A. Use of Site: Limit use of Project site to work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
  - 1. Limits: Confine construction operations to areas as indicated on Contract drawings.
  - 2. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
    - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
    - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- B. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

## 1.7 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
  - 1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Limit work in the existing building to normal business working hours of 7:00 a.m. to 5:00 p.m., Monday through Friday, unless otherwise indicated.
- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
  - 1. Notify Engineer not less than two days in advance of proposed utility interruptions.
  - 2. Obtain Engineer's written permission before proceeding with utility interruptions.
- D. Nonsmoking: Smoking is not permitted within the project site.
- E. Controlled Substances: Use of tobacco products and other controlled substances on Project site is not permitted.

## 1.8 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
  - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
  2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and scheduled on Drawings.
  3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

#### 1.9 CONTRACTOR QUALIFICATIONS

- A. Describe experience in construction work similar in importance to this project on an attached sheet. Contractor must be able to show at least 10 years' experience working on public pool systems to qualify for this bid.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

## SECTION 013216 - CONSTRUCTION PROGRESS SCHEDULE

### PART 1 - GENERAL

#### 1.1 SECTION INCLUDES

- A. Submittals.
- B. Bar chart schedules.
- C. Updating schedules.

#### 1.2 SUBMITTALS

- A. Within 20 days after date of Notice to Proceed, submit proposed schedule in electronic format.
- B. Schedule Updates:
  - 1. Overall percent complete, projected and actual.
  - 2. Completion progress by listed activity and subactivity, to within five working days prior to submittal.
  - 3. Changes in Work scope and activities modified since submittal.
  - 4. Delays in submittals or resubmittals, deliveries, or Work.
  - 5. Adjusted or modified sequences of Work.
  - 6. Other identifiable changes.
  - 7. Revised projections of progress and completion.
- C. Narrative Progress Report:
  - 1. Submit with each monthly submission of Progress Schedule.
  - 2. Summary of Work completed during the past period between reports.
  - 3. Work planned during the next period.
  - 4. Explanation of differences between summary of Work completed and Work planned in previously submitted report.
  - 5. Current and anticipated delaying factors and estimated impact on other activities and completion milestones.
  - 6. Corrective action taken or proposed.

#### 1.3 BAR CHART SCHEDULES

- A. Format: Bar chart Schedule, to include at least:
  - 1. Identification and listing in chronological order of those activities reasonably required to complete the Work, including:
    - a. Subcontract Work.

- b. Major design, fabrication, factory testing, and delivery dates including required lead times.
  - c. Equipment and equipment system test and startup activities (if applicable).
  - d. Project closeout and cleanup.
  - e. Work sequences, constraints, and milestones.
- 2. Listings identified by Specification Section number.
  - 3. Identification of the following:
    - a. Horizontal time frame by year, month, and week.
    - b. Duration, early start, and completion for each activity and subactivity.
    - c. Critical activities and Project float.
    - d. Subschedules to further define critical portions of Work.

#### 1.4 UPDATING SCHEDULES

- A. Maintain schedules to record actual start and finish dates of completed activities.
- B. Indicate progress of each activity to date of revision, with projected completion date of each activity. Update schedules to depict current status of Work.
- C. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
- D. Upon approval of a Change Order, include the change in the next schedule submittal.
- E. Indicate changes required to maintain Date of Substantial and Total Completion.
- F. Submit sorts as required to support recommended changes.
- G. Prepare narrative report to define problem areas, anticipated delays, and impact on schedule. Report corrective action taken or proposed and its effect including effects of changes on schedules of separate Contractors.

PART 2 - PRODUCTS Not Used

PART 3 - EXECUTION Not Used

END OF SECTION

## SECTION 013233 – PHOTOGRAPHIC DOCUMENTATION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Section includes administrative and procedural requirements for the following:
  - 1. Preconstruction photographs.
  - 2. Periodic construction photographs.
  - 3. Final completion construction photographs.

#### 1.2 SUMMARY

- A. Section Includes:
- B. Section 013300 – Submittal Procedures for submitting photographic documentation.
- C. Section 017700 – Closeout Procedures.

#### 1.3 INFORMATIONAL SUBMITTALS

- A. Key Plan: Submit key plan of Project Site with notation of vantage points marked for location and direction of each photograph and video recording.
- B. Digital Photographs: Submit image files within three days of taking photographs.
  - 1. Digital Camera: Minimum sensor resolution of 8 megapixels.
  - 2. Format: JPG with minimum 3200 by 2400 pixels, in unaltered original files, with same aspect ratio as the sensor, uncropped, date and time stamped, in folder named by date of photograph, accompanied by key plan file.
  - 3. Identification: Provide the following information with each image description in file metadata tag:
    - a. Name of Project.
    - b. Name and Contact information for photographer.
    - c. Name of Engineer.
    - d. Name of Contractor.
    - e. Date photograph was taken.
    - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
    - g. Unique sequential identifier keyed to accompanying key plan.

#### 1.4 USAGE RIGHTS

- A. Transfer copyright usage rights to Owner for unlimited use and reproduction of photographic documentation.

PART 2 - PRODUCTS – Not Used

PART 3 - EXECUTION

3.1 GENERAL

- A. Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
  - 1. Maintain key plan with each set of construction photographs that identifies each photographic location.

3.2 PRECONSTRUCTION PHOTGRAPHS

- A. Photographic documentation is required prior to the start of any construction. Coverage shall include everything within the construction limits as identified on the Contract Drawings.
- B. Include coverage driveways, sidewalks, curbs, ditches (to show drainage patterns), street (as full width as possible), landscaping, trees, shrubs, culverts, catch basins, retaining walls, headwalls, fences, visible utilities, and building exteriors within the zones of influence. Buildings should be identified visibly when possible.
- C. Properly identify all photographs by number, date, locations and project name.

3.3 PERIODIC CONSTRUCTION PHOTOGRAPHS

- A. Take photographs bi-weekly, with timing each month adjusted to coincide with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.

3.4 FINAL COMPLETION CONSTRUCTION PHOTGRPAHS

- A. Take color photographs after date of Substantial Completion for submission as project record documents. Select vantage points to show status of construction and progress since last photographs were taken.

END OF SECTION

## SECTION 013300 - SUBMITTAL PROCEDURES

### PART 1 - GENERAL

#### 1.1 SECTION INCLUDES

- A. Definitions.
- B. Submittal procedures.
- C. Construction progress schedules.
- D. Proposed product list.
- E. Product data.
- F. Shop Drawings.
- G. Samples.
- H. Other submittals.
- I. Test reports.
- J. Certificates.
- K. Manufacturer's instructions.
- L. Manufacturer's field reports.
- M. Contractor review.
- N. Engineer review.

#### 1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Engineer's responsive action.
- B. Informational Submittals: Written and graphic information and physical Samples that do not require Engineer's responsive action. Submittals may be rejected for not complying with requirements.

#### 1.3 SUBMITTAL PROCEDURES

- A. Transmit each submittal with Engineer accepted form.

- B. Sequentially number transmittal forms. Mark revised submittals with original number and sequential alphabetic suffix.
- C. Identify: Project, Contractor, Subcontractor and supplier, pertinent Drawing and detail number, and Specification Section number appropriate to submittal.
- D. Apply Contractor's stamp, signed or initialed, certifying that review, approval, verification of products required, field dimensions, adjacent construction Work, and coordination of information is according to requirements of the Work and Contract Documents.
- E. Schedule submittals to expedite Project, and deliver to Engineer at business address. Coordinate submission of related items.
- F. For each submittal for review, allow fifteen (15) days excluding delivery time to and from Contractor.
- G. Identify variations in Contract Documents and product or system limitations that may be detrimental to successful performance of completed Work.
- H. Allow space on submittals for Contractor and Engineer review stamps.
- I. When revised for resubmission, identify changes made since previous submission.
- J. The Engineer's approval of the Contractor's submittal is for general conformance with the design concept only. Although the Engineer may review submittals in more or less detail, such reviewing is an effort to discover errors and omission in the Contractor's submittals and to safeguard the Owner from unnecessary costs and delays resulting from errors or omissions in the Contractor's submittals. The Engineer's review shall in no way relieve the Contractor of his obligation and responsibility to coordinate the Work and plan the details of the Work or to relieve him of his responsibility in fulfilling the purpose and intent of the Contract. Review by the Engineer shall not be construed as placing on him or on the Owner any responsibility for the accuracy, proper fit, functioning or performance of any phase of the Work included in the Contract.
- K. For all re-submittals except for the first, Engineer and Engineer's consultants will record manhours required for review of the re-submittal. At the discretion of the Owner, Contractor may be charged for review of such repeat re-submittals at Engineer's (and Engineer's consultant's) current hourly rates. Charges for repeat re-submittals will be subtracted from Contractor's next progress payment.
- L. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report inability to comply with requirements.
- M. Submittals not requested will not be recognized nor processed.
- N. Incomplete Submittals: Engineer will not review. Complete submittals for each item are required. Delays resulting from incomplete submittals are not the responsibility of /Engineer.

#### 1.4 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit initial schedule in duplicate within twenty (20) days after the Notice to Proceed as per Section 013216 Construction Progress Schedule.
- B. Review and resubmit as required.
- C. Submit revised schedules with each Application for Payment, identifying changes since previous version.
- D. Show complete sequence of construction by activity, identifying Work of separate stage and other logically grouped activities. Indicate the early and late start, early and late finish, float dates and duration.
- E. Indicate estimated percentage of completion for each item of Work at each submittal.
- F. Indicate submittal dates required for shop drawings, product data, samples and product delivery dates, including those furnished by Owner and required by Allowances.

#### 1.5 PROPOSED PRODUCT LIST

- A. Within ten (10) days after date of Owner-Contractor Agreement, submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.
- B. For products specified only by reference standards, indicate manufacturer, trade name, model or catalog designation, and reference standards.

#### 1.6 PRODUCT DATA

- A. Action Submittal: Submit to Engineer for review for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.
- B. Submit electronic submittals via email as PDF electronic files.
- C. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- D. After review, produce copies and distribute according to "Submittal Procedures" Article and for record documents described in Section 017000 - Execution and Closeout Requirements.

#### 1.7 SHOP DRAWINGS

- A. Shop Drawings: Action Submittal: Submit to Engineer for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.
- B. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

- C. When required by individual Specification Sections, provide Shop Drawings signed and sealed by a professional Engineer responsible for designing components shown on Shop Drawings.
  - 1. Include signed and sealed calculations to support design.
  - 2. Submit Shop Drawings and calculations in form suitable for submission to and approval by authorities having jurisdiction.
  - 3. Make revisions and provide additional information when required by authorities having jurisdiction.
- D. Submit electronic submittal via email as PDF.
- E. After review, produce copies and distribute according to "Submittal Procedures" Article and for record documents described in Section 017000 - Execution and Closeout Requirements.

## 1.8 SAMPLES

- A. Samples: Action Submittal: Submit to Engineer for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.
- B. Samples for Selection as Specified in Product Sections:
  - 1. Submit to Engineer for aesthetic, color, and finish selection.
  - 2. Submit Samples of finishes, textures, and patterns for Engineer selection.
- C. Submit Samples to illustrate functional and aesthetic characteristics of products, with integral parts and attachment devices. Coordinate Sample submittals for interfacing work.
- D. Include identification on each Sample, with full Project information.
- E. Submit number of Samples specified in individual Specification Sections; Engineer will retain one Sample.
- F. Reviewed Samples that may be used in the Work are indicated in individual Specification Sections.
- G. Samples will not be used for testing purposes unless specifically stated in Specification Section.
- H. After review, produce copies and distribute according to "Submittal Procedures" Article and for record documents described in Section 017000 - Execution and Closeout Requirements.

## 1.9 OTHER SUBMITTALS

- A. Closeout Submittals: Comply with Section 017000 - Execution and Closeout Requirements.
- B. Informational Submittal: Submit data for Architect/Engineer's knowledge as Contract administrator or for Owner.
- C. Submit information for assessing conformance with information given and design concept expressed in Contract Documents.

#### 1.10 TEST REPORTS

- A. Informational Submittal: Submit reports for Engineer's knowledge as Contract administrator or for Owner.
- B. Submit test reports for information for assessing conformance with information given and design concept expressed in Contract Documents.

#### 1.11 CERTIFICATES

- A. Informational Submittal: Submit certification by manufacturer, installation/application Subcontractor, or Contractor to Engineer, in quantities specified for Product Data.
- B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- C. Certificates may be recent or previous test results on material or product but must be acceptable to Engineer.

#### 1.12 MANUFACTURER'S INSTRUCTIONS

- A. Informational Submittal: Submit manufacturer's installation instructions for Engineer's knowledge as Contract administrator or for Owner.
- B. Submit printed instructions for delivery, storage, assembly, installation, startup, adjusting, and finishing, to Engineer in quantities specified for Product Data.
- C. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

#### 1.13 MANUFACTURER'S FIELD REPORTS

- A. Informational Submittal: Submit reports for Engineer's knowledge as Contract administrator or for Owner.
- B. Submit report within 30 days of observation to Engineer for information. Illegible or incomplete reports will be rejected.
- C. Submit reports for information for assessing conformance with information given and design concept expressed in Contract Documents.
- D. Manufacturer's Field Reports shall include, as a minimum, the following information:
  - 1. Name of Field Service Representative.
  - 2. Date(s) of site visit.
  - 3. Duration of site visit (actual man-hours on the site).
  - 4. Name of equipment manufacturer.
  - 5. Complete list of equipment inspected and/or started up.

6. Description of any problems, unfinished work, required changes, etc. remaining at the conclusion of the site visit.
7. Statement that the installation is or is not acceptable to the equipment manufacturer.
8. If installation is not acceptable, provide narrative, sketches, itemized list, etc. of what is required to make installation acceptable.
9. Statement that equipment is or is not operating properly according to the equipment manufacturer.
10. If equipment is not operating properly, provide narrative on what is required to make equipment operate properly.

#### 1.14 CONTRACTOR REVIEW

- A. Review for compliance with Contract Documents and approve submittals before transmitting to Engineer.
- B. Contractor: Responsible for:
  1. Determination and verification of materials including manufacturer's catalog numbers.
  2. Determination and verification of field measurements and field construction criteria.
  3. Checking and coordinating information in submittal with requirements of Work and of Contract Documents.
  4. Determination of accuracy and completeness of dimensions and quantities.
  5. Confirmation and coordination of dimensions and field conditions at Site.
  6. Construction means, techniques, sequences, and procedures.
  7. Safety precautions.
  8. Coordination and performance of Work of all trades.
- C. Stamp, sign or initial, and date each submittal to certify compliance with requirements of Contract Documents.
- D. Do not fabricate products or begin Work for which submittals are required until approved submittals have been received from Architect/Engineer.

#### 1.15 ENGINEER REVIEW

- A. Do not make "mass submittals" to Engineer. "Mass submittals" are defined as six or more submittals or items in one day or 20 or more submittals or items in one week. If "mass submittals" are received, Engineer's review time stated above will be extended as necessary to perform proper review. Engineer will review "mass submittals" based on priority determined by Engineer after consultation with Owner and Contractor.
- B. Informational submittals and other similar data are for Engineer's information, do not require Engineer's responsive action, and will not be reviewed or returned with comment.
- C. Submittals made by Contractor that are not required by Contract Documents may be returned without action.

- D. Submittal approval does not authorize changes to Contract requirements unless accompanied by Change Order.
- E. Owner may withhold monies due to Contractor to cover additional costs beyond the second submittal review.

PART 2 - PRODUCTS      Not Used

PART 3 - EXECUTION      Not Used

END OF SECTION

## SECTION 014000 - QUALITY REQUIREMENTS

### PART 1 - GENERAL

#### 1.1 SECTION INCLUDES

- A. Quality control.
- B. Tolerances.
- C. References.
- D. Mockup requirements.
- E. Testing and inspection services.
- F. Manufacturers' field services.

#### 1.2 QUALITY CONTROL

- A. Monitor quality control over suppliers, manufacturers, products, services, Site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with specified standards as the minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- C. Comply with manufacturer's installation instructions, including each step in sequence.
- D. Should manufacturer's instructions conflict with Contract Documents, request clarification from Engineer before proceeding.
- E. Perform Work using persons qualified to produce required and specified quality.
- F. Products, materials, and equipment may be subject to inspection by Engineer at place of manufacture or fabrication. Such inspections shall not relieve Contractor of complying with requirements of Contract Documents.
- G. Supervise performance of Work in such manner and by such means to ensure that Work, whether completed or in progress, will not be subjected to harmful, dangerous, damaging, or otherwise deleterious exposure during construction period.
- H. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion and disfigurement.

### 1.3 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' recommended tolerances and tolerance requirements in reference standards. When such tolerances conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

### 1.4 REFERENCES

- A. For products or workmanship specified by association, trade, or other consensus standards, comply with requirements of standard except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current as of date of Contract Documents except where specific date is established by code.
- C. Obtain copies of standards and maintain on Site when required by product Specification Sections.
- D. When requirements of indicated reference standards conflict with Contract Documents, request clarification from Engineer before proceeding.
- E. Neither contractual relationships, duties, or responsibilities of parties in Contract nor those of Engineer shall be altered from Contract Documents by mention or inference in reference documents.

### 1.5 MOCK-UP REQUIREMENTS

- A. Tests will be performed under provisions identified in this Section and identified in individual product Specification Sections.
- B. Assemble and erect specified or indicated items with specified or indicated attachment and anchorage devices, flashings, seals, and finishes.
- C. Accepted mockups shall be comparison standard for remaining Work.
- D. Where mockup has been accepted by Engineer and is specified in product Specification Sections to be removed, remove mockup and clear area when directed to do so by Engineer.

### 1.6 TESTING AND INSPECTION SERVICES

- A. Independent firm will perform tests, inspections, and other services specified in individual Specification Sections and as required by Engineer.

- B. Testing, inspections, and source quality control may occur on or off Project Site. Perform off-Site testing as required by Engineer or Owner.
- C. Reports shall be submitted by independent firm to Engineer, Contractor, and authorities having jurisdiction, in duplicate, indicating observations and results of tests and compliance or noncompliance with Contract Documents.
  - 1. Submit final report indicating correction of Work previously reported as noncompliant.
- D. Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
  - 1. Notify Engineer and independent firm twenty-four (24) hours before expected time for operations requiring services.
  - 2. Make arrangements with independent firm and pay for additional Samples and tests required for Contractor's use.
- E. Employment of testing agency or laboratory shall not relieve Contractor of obligation to perform Work according to requirements of Contract Documents.
- F. Retesting or re-inspection required because of nonconformance with specified or indicated requirements shall be performed by same independent firm on instructions from Engineer. Payment for retesting or re-inspection will be charged to Contractor by deducting testing charges from Contract Sum/Price.
- G. Agency Responsibilities:
  - 1. Test Samples of mixes submitted by Contractor.
  - 2. Provide qualified personnel at Site. Cooperate with Engineer and Contractor in performance of services.
  - 3. Perform indicated sampling and testing of products according to specified standards.
  - 4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
  - 5. Promptly notify Engineer and Contractor of observed irregularities or nonconformance of Work or products.
  - 6. Perform additional tests required by Engineer.
  - 7. Attend preconstruction meetings and progress meetings when requested.
- H. Agency Reports: After each test, promptly submit two (2) copies of report to Engineer, Contractor, and authorities having jurisdiction. When requested by Engineer, provide interpretation of test results. Include the following:
  - 1. Date issued.
  - 2. Project title and number.
  - 3. Name of inspector.
  - 4. Date and time of sampling or inspection.
  - 5. Identification of product and Specification Section.
  - 6. Location in Project.
  - 7. Type of inspection or test.
  - 8. Date of test.
  - 9. Results of tests.
  - 10. Conformance with Contract Documents.

I. Limits on Testing Authority:

1. Agency or laboratory may not release, revoke, alter, or enlarge on requirements of Contract Documents.
2. Agency or laboratory may not approve or accept any portion of the Work.
3. Agency or laboratory may not assume duties of Contractor.
4. Agency or laboratory has no authority to stop the Work.

1.7 MANUFACTURER'S FIELD SERVICES

- A. When specified in individual Specification Sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe Site conditions, conditions of surfaces and installation, quality of workmanship, startup of equipment, testing, adjusting, and balancing of equipment as applicable, and to initiate instructions when necessary.
- B. Submit qualifications of field service representative to Engineer thirty (30) days in advance of required observations. Field service representative subject to approval of Engineer.
- C. Report observations and Site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturer's written instructions.

PART 2 - PRODUCTS      Not Used

PART 3 - EXECUTION      Not Used

END OF SECTION

## 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. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Engineer, 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.

#### 1.3 INFORMATIONAL SUBMITTALS

- A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.
- B. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire prevention program.

#### 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.

## PART 2 - PRODUCTS

### 2.1 TEMPORARY FACILITIES

- A. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

### 2.2 EQUIPMENT

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

## PART 3 - EXECUTION

### 3.1 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.

### 3.2 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. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
- C. Sanitary Facilities: Provide temporary toilets, wash 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.
- D. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
  - 1. Install electric power service overhead unless otherwise indicated.
- E. 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.

### 3.3 SUPPORT FACILITIES INSTALLATION

- A. 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.
- B. Parking: Use designated areas of Owner's existing parking areas for construction personnel.
- C. 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 touchup signs so they are legible at all times.
- D. Waste Disposal Facilities: Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."

### 3.4 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: 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 erosion- and sedimentation-control Drawings.
- D. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- E. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.
- F. 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.
  - 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.

### 3.5 MOISTURE AND MOLD CONTROL

- A. Contractor's Moisture Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.
- B. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect materials from water damage and keep porous and organic materials from coming into prolonged contact with concrete.

### 3.6 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 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
  - 1. Disposing of nonhazardous demolition and construction waste.
- B. Related Requirements:
  - 1. Section 024119 "Selective Demolition" for disposition of waste resulting from partial demolition of buildings, structures, and site improvements.
  - 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 and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

#### 1.3 INFORMATIONAL SUBMITTALS

- A. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

### PART 2 - PRODUCTS (Not Used)

### PART 3 - EXECUTION

#### 3.1 DISPOSAL OF WASTE

- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, 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 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 waste materials.
- C. Disposal: Remove waste materials from Owner's property and legally dispose of them.

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.
  - 5. Repair of the Work.
- B. Related Requirements:
  - 1. Section 013233 "Photographic Documentation" for submitting final completion construction photographic documentation.

#### 1.2 ACTION SUBMITTALS

- A. Product Data: For cleaning agents.
- 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 10 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, final completion construction photographic documentation, 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 changeover information related to Owner's occupancy, use, operation, and maintenance.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 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.
  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 heat and other utilities.
  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, including touchup painting.
  10. Touch up 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 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer 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 Engineer, that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
  2. Results of completed inspection will form the basis of requirements for final completion.

## 1.5 FINAL COMPLETION PROCEDURES

- A. Preliminary Procedures: Before requesting final inspection for determining final completion, complete the following:
1. Submit a final Application for Payment.

2. Certified List of Incomplete Items: Submit certified copy of Engineer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Engineer. 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. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
- B. Inspection: Submit a written request for final inspection to determine acceptance. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer 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. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

#### 1.6 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- 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.
  2. Organize items applying to each space by major element, including equipment and systems.
  3. Submit list of incomplete items in the following format:
    - a. PDF electronic file. Engineer will return annotated copy.

#### 1.7 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Engineer for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, 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 the Project Manual.
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.
  2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
  3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

4. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
- C. 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. General: 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, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
    - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
    - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
    - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
    - e. Clean exposed exterior 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.
    - f. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
    - g. Remove labels that are not permanent.
    - h. Leave Project clean and ready for occupancy.

### 3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
  - 1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
  - 2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence of repair or restoration.
    - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
  - 3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.

END OF SECTION 017700

## SECTION 024119 – SELECTIVE BUILDING DEMOLITION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Demolition and removal of selected site elements.

#### 1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.
- B. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

#### 1.4 MATERIALS OWNERSHIP

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

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Schedule of Selective Demolition Activities: Indicate the following:
  - 1. Interruption of utility services. Indicate how long utility services will be interrupted.
  - 2. Coordination for shutoff, capping, and continuation of utility services.
  - 3. Means of protection for existing items to remain.
- B. Inventory: Submit a list of items to be removed and salvaged and deliver to Owner prior to start of demolition.

#### 1.6 CLOSEOUT SUBMITTALS

- A. Inventory: Submit a list of items that have been removed and salvaged.
- B. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

## 1.7 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI A10.6 and NFPA 241.

## 1.8 PROJECT CONDITIONS

- A. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- B. Notify Engineer of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- C. Hazardous Materials: Hazardous materials are not present in structures to be selectively demolished.
- D. Storage or sale of removed items or materials on-site is not permitted.
- E. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations

## PART 2 - PRODUCTS – Not Used

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Engineer.

### 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.
  - 1. Comply with requirements for existing services/systems interruptions specified in Section 011000 “Summary”.

- B. Existing Services/Systems to Be Removed: Locate, identify, disconnect, and seal or cap off indicated utility services serving areas to be selectively demolished.
  - 1. If services/systems are required to be removed or abandoned, including alarms and control systems, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
  - 2. Disconnect, demolish, and remove plumbing and components indicated to be removed.
    - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
    - b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material.

### 3.3 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
  - 1. Comply with requirements for access and protection specified in Section 015000 "Temporary Facilities and Controls."
- B. Temporary Shoring: Provide and maintain shoring, bracing, thrust restraint, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
  - 1. Strengthen or add new supports when required during progress of selective demolition.

### 3.4 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
  - 1. Proceed with selective demolition systematically, from higher to lower level.
  - 2. 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, to minimize disturbance of adjacent surfaces.
  - 3. Do not use cutting torches until work area is cleared of flammable materials. Maintain portable fire-suppression devices during flame-cutting operations.
  - 4. Maintain adequate ventilation when using cutting torches.
  - 5. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
  - 6. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
  - 7. Dispose of demolished items and materials promptly.
- B. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Engineer, items may be removed to a suitable, protected storage location during selective demolition, cleaned, and reinstalled in their original locations after selective demolition operations are complete.

### 3.5 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.
  - 1. Do not allow demolished materials to accumulate on-site.
  - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
  - 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

### 3.6 CLEANING

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

### 3.7 SELECTIVE DEMOLITION SCHEDULE

- A. Existing Items to Be Removed: See Contract Drawings.
- B. Existing Items to Remain: See Contract Drawings.

END OF SECTION

## 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.
- B. Related Requirements:
  - 1. Section 312000 "Earth Moving" for drainage fill under slabs-on-grade.

#### 1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Design Mixtures: For each concrete mixture.
- C. Steel Reinforcement Shop Drawings: Placing Drawings that detail fabrication, bending, and placement.

#### 1.3 INFORMATIONAL SUBMITTALS

- A. Material certificates.
- B. Material test reports.
- C. Formwork Shop Drawings: Prepared by or under the supervision of a qualified professional engineer, detailing fabrication, assembly, and support of formwork.
- D. Floor surface flatness and levelness measurements indicating compliance with specified tolerances.

#### 1.4 QUALITY ASSURANCE

- A. 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.
- B. Testing Agency Qualifications: An independent agency, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.

#### 1.5 PRECONSTRUCTION TESTING

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

## 1.6 FIELD CONDITIONS

- 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).

## PART 2 - PRODUCTS

### 2.1 CONCRETE, GENERAL

- A. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
  - 1. ACI 301 (ACI 301M).
  - 2. ACI 117 (ACI 117M).

### 2.2 FORM-FACING MATERIALS

- A. Smooth-Formed Finished Concrete: Form-facing panels that provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
- B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

### 2.3 STEEL REINFORCEMENT

- A. Plain-Steel Welded-Wire Reinforcement: ASTM A 1064/A 1064M, plain, fabricated from as-drawn steel wire into flat sheets.
- B. Deformed-Steel Welded-Wire Reinforcement: ASTM A 1064/A 1064M, flat sheet.
- C. Galvanized-Steel Welded-Wire Reinforcement: ASTM A 1064/A 1064M, plain, fabricated from galvanized-steel wire into flat sheets.
- D. 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."

### 2.4 CONCRETE MATERIALS

- A. Cementitious Materials:
  - 1. Portland Cement: ASTM C 150/C 150M, Type I/II, gray.
  - 2. Fly Ash: ASTM C 618, Class F or C.
  - 3. Slag Cement: ASTM C 989/C 989M, Grade 100 or 120.

- B. Normal-Weight Aggregates: ASTM C 33/C 33M, graded.
  - 1. Maximum Coarse-Aggregate Size: 1 inch (25 mm) nominal.
  - 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- C. Air-Entraining Admixture: ASTM C 260/C 260M.
- D. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures and that do 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/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.
- E. Water: ASTM C 94/C 94M.

## 2.5 WATERSTOPS

- A. Flexible Rubber Waterstops: CE CRD-C 513, for embedding in concrete to prevent passage of fluids through joints. Factory fabricate corners, intersections, and directional changes.
- B. Chemically Resistant Flexible Waterstops: Thermoplastic elastomer rubber waterstops, for embedding in concrete to prevent passage of fluids through joints; resistant to oils, solvents, and chemicals. Factory fabricate corners, intersections, and directional changes.
- C. Flexible PVC Waterstops: CE CRD-C 572, for embedding in concrete to prevent passage of fluids through joints. Factory fabricate corners, intersections, and directional changes.
- D. 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 (19 by 25 mm).
- E. Self-Expanding Rubber Strip Waterstops: Manufactured rectangular or trapezoidal strip, bentonite-free hydrophilic polymer-modified chloroprene rubber, for adhesive bonding to concrete, 3/8 by 3/4 inch (10 by 19 mm).

## 2.6 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. (305 g/sq. m) when dry.
- C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- D. Water: Potable.

- E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.
- F. Clear, Solvent-Borne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.
  - 1. Curing and sealing compounds shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- G. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.

## 2.7 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber or ASTM D 1752, cork or self-expanding cork.

## 2.8 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 (ACI 301M).
- B. Admixtures: Use admixtures according to manufacturer's written instructions.
  - 1. Use water-reducing, high-range water-reducing, or plasticizing admixture in concrete, as required, for placement and workability.
  - 2. Use water-reducing and -retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
  - 3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a w/c ratio below 0.50.

## 2.9 CONCRETE MIXTURES FOR BUILDING ELEMENTS

- A. Normal-Weight Concrete:
  - 1. Minimum Compressive Strength: 3500 psi (24.1 MPa) at 28 days.
  - 2. Maximum W/C Ratio: 0.45.
  - 3. Slump Limit: 5 inches (125 mm) for concrete with verified slump of 2 to 4 inches (50 to 100 mm) before adding high-range water-reducing admixture or plasticizing admixture, plus or minus 1 inch (25 mm).
  - 4. Air Content: 5.5 percent, plus or minus 1.5 percent at point of delivery for 1-1/2-inch (38-mm) nominal maximum aggregate size.
  - 5. Air Content: 6 percent, plus or minus 1.5 percent at point of delivery for 1-inch (25-mm) nominal maximum aggregate size.
  - 6. Air Content: Do not allow air content of trowel-finished floors to exceed 3 percent.
  - 7. Synthetic Micro-Fiber: Uniformly disperse in concrete mixture at manufacturer's recommended rate, but not less than a rate of 1.0 lb/cu. yd. (0.60 kg/cu. m).

## 2.10 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

## 2.11 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M and ASTM C 1116/C 1116M, and furnish batch ticket information.
  - 1. When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

## PART 3 - EXECUTION

### 3.1 FORMWORK INSTALLATION

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301 (ACI 301M), 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 (ACI 117M).
- C. Chamfer exterior corners and edges of permanently exposed concrete.

### 3.2 EMBEDDED ITEM INSTALLATION

- A. 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.

### 3.3 STEEL REINFORCEMENT INSTALLATION

- A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

### 3.4 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.
- C. Contraction 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. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch (3.2 mm). Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool 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- (3.2-mm-) wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.
- 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.

### 3.5 WATERSTOP INSTALLATION

- A. Waterstops: Install in construction joints and at other locations indicated, according to manufacturer's written instructions.

### 3.6 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections are completed.
- B. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
1. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301 (ACI 301M).

### 3.7 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 public 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 public view.
- C. 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.

### 3.8 FINISHING FLOORS AND SLABS

- A. General: Comply with ACI 302.1R recommendations for screeding, restraighening, 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 restraighening until surface is left with a uniform, smooth, granular texture.
  - 1. Apply float finish to surfaces to receive broom finish.
- 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 that would telegraph through applied coatings or floor coverings.
  - 1. Apply a trowel finish to surfaces exposed to view.
  - 2. Finish and measure surface, so gap at any point between concrete surface and an unlevelled, freestanding, 10-ft.- (3.05-m-) long straightedge resting on two high spots and placed anywhere on the surface does not exceed 3/16 inch (4.8 mm).
- 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 Engineer before application.

### 3.9 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 (ACI 301M) 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 (1 kg/sq. m 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 remainder of curing period.
- D. 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.
  - 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 (300 mm), 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.

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 does not interfere with bonding of floor covering used on Project.
4. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated 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.

### 3.10 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair and patch defective areas when approved by Engineer. Remove and replace concrete that cannot be repaired and patched to Engineer's approval.

### 3.11 FIELD QUALITY CONTROL

- A. Special Inspections: Owner will engage a qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.

END OF SECTION 033000

## SECTION 033200 - POOL SHELL CONSTRUCTION

### PART 1 – GENERAL

#### 1.1 SUMMARY

- A. Specially placed (pneumatically applied) concrete shall be used by Contractor for construction of the swimming pool walls and floor. Work shall include, but not be limited to:
  - 1. Pool wall forming
  - 2. Placement of fittings
  - 3. Concrete structure (concrete and reinforcement)
  - 4. Reinforcement steel
  - 5. Water tightness testing
  - 6. Interior finish including bond coat, quartz plaster, and tile
  - 7. Filling and balancing water
  
- B. Related sections include:
  - 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specifications Sections, apply to this Section.
  - 2. Division 13000 Pool Construction “General”.
  - 3. Section 16450 – Pool Grounding and Bonding.

#### 1.2 STANDARDS

- A. American Concrete Institute (ACI) 506R-05 Guide to Shotcrete. This represents both:
  - 1. Shotcrete; wet mix-transit
  - 2. Guniting; dry mix
  
- B. American Concrete Institute (ACI) 306R-10 Guide to Cold Weather Concreting
  
- C. American Concrete Institute (ACI) 305.1M-14 Specification for Hot Weather Concreting
  
- D. American Concrete Institute (ACI) 347R-14 Guide to Form Work for Concrete
  
- E. American Concrete Institute (ACI) 308.1-11 Specification for Curing Concrete
  
- F. American Concrete Institute (ACI) 524R-08 Guide to Portland Cement Based Plaster
  
- G. American Concrete Institute (ACI) 232.2R-03 Use of Fly Ash in Concrete
  
- H. CRSI Manual of Standard Practice and Placing Reinforcing Bars
  
- I. National Plasterers Council (NPC). All referenced herein to plaster implies a quartz aggregate plaster material. Standard plaster “marcite” shall not be used.

### 1.3 QUALITY ASSURANCE

- A. Use adequate number of skilled workers who are thoroughly trained and experienced in the necessary crafts and are completely familiar with the Specific requirements and methods needed for proper performance of the Work in this Section.
1. Concrete (gunite/shotcrete) Crew qualifications including foreman – A foreman who normally has proficiency at all crew positions and should have a minimum of 3000 hours experience and the nozzlemán who must have certification (refer to ACI 506.3R) and a minimum of 3000 hours experience as a nozzlemán. He should be able to demonstrate, by test, his ability to satisfactorily perform his duties and to apply pneumatically applied concrete as required by these specifications.
  2. The plaster interior finish shall be applied by mechanics having at least five (5) years experience in the application of this finish to masonry concrete/gunite swimming pool interiors, and bidding pool contractors shall provide with this bid a list of 15 projects which have been completed by the bidding contractor's firm with surface areas of 3000 sq. ft. or larger in which the bidding contractor has had the contractual responsibility to provide a plaster interior pool coating. Note: Failure of bidding contractor to provide the experience project listing required above with bid documents will result in their bid considered as non-responsive and cause for bid rejection. Plaster foreman must have NPC Certification.
  3. All setting and lying of tile shall be by experienced tile mechanics who can supply evidence that they have been steadily employed in the installation of the pool tile work during the past three (3) years.
  4. Both Nozzlemán and Plasterers must provide current certifications prior to work. Certificates are to be issued by ACI and NPC respectively.
- B. Quality Control
1. Do not commence the placement of concrete until mix designs have been reviewed and approved by Engineer and all governmental agencies who have jurisdiction, and until copies are at the job site, batch plant, and building department.
  2. Pressure test and maintain pressure throughout concrete installation on all piping.
  3. An accredited representative of the Plaster Manufacturer must inspect concrete conditions of shell immediately before plastering and issue an Approval/Acceptance letter.
- C. Inspection and Testing of Concrete
1. All testing and inspection Work shall be done by qualified inspection agency selected by Owner; payment for this Work shall be made by Contractor.
    - a. Design mixes will be determined in advance of concrete placement.
    - b. Three test panel 30" X 30" X 4", will be made each day of shooting for each nozzlemán used. Test panels will be cored in three places for visual grading and compressive strength testing, seven days after placement and 28 days after placement, and a third core shall be kept for backup purposes.
    - c. Reinforcement configuration and placement position of the test panels will simulate in-place work to be done that day. If cores from daily test panels are found to be defective, then cores will be extracted from in place material of that day's shoot.
    - d. Each test sample shall be inscribed with date and location from where it was taken.
    - e. Test samples shall remain on site at locations where concrete was placed and shall be exposed to the same environment as material in the structure.

- f. Inspection will include checking forms and reinforcement soil conditions, and weather conditions.
- g. Work performed by testing agency is for benefit of Owner and does not relieve Contractor from performing Work, in accordance with the requirements of Contract Documents.

#### 1.4 SUBMITTALS

- A. Placement Drawings shall show all recesses, depressions, joints, openings, sleeves and other built-in items for installation in concrete required for Work of all trades and Contracts. Also, show all cold joints expected.
- B. Provide design mix. If site mixed, provide procedures for achieving proper proportion. Obtain approval of Engineer before starting Work.
- C. Product Data
  - 1. Contractor shall submit
    - a. Materials list of items proposed, to be provided under this Section.
    - b. Manufacturer's specifications and other data needed to prove compliance with Specified requirements.
    - c. Submit manufacturer's descriptive literature; including surface preparation and installation instructions and color charts.
    - d. Certified copies of mill test reports for all reinforcement materials.
  - 2. The Pool Contractor shall furnish and install this equipment as herein specified and as shown on the project drawings.
  - 3. Exceptions to the specifications will not be considered unless equal to the specified system in every respect in the opinion of the Engineer and must be submitted for approval. It is cautioned that bidders must include in their base bid the products specified.
- D. Samples
  - 1. Provide samples of each type of aggregate or sand to be used (one-half (1/2) cubic foot each) when requested by Owner or Engineer.

#### 1.5 PRODUCT HANDLING

- A. Store cement sacks above ground on level platforms or pallets, which allow air circulation under the stacked units.
- B. Cover and protect against wetting prior to use; no material shall be used when the bag shows water marks.
- C. Store sand in dry areas; cover securely to prevent exposure to rain or water or contamination.

## 1.06 WARRANTY

- A. All work and materials are subject to general warranty as described in the Conditions of the Contract. In addition, the following guarantee applies:
  - 1. Guarantee: Provide for repairing and replacing, at no cost to the Owner, plaster and grouts, which fail to perform as intended because of either leaking, crumbling, hardening, shrinkage, bleeding, sagging, staining, loss of adhesion or loss of cohesion, within a minimum period of 2 years from date of Substantial Completion as certified by the Engineer.
  - 2. This guarantee shall include all labor and material for replacement of any defective materials or work, but shall not include or cover abusive or improper treatment to the shell by others during construction or when operational.
  - 3. Provide manufacturer warranty on plaster, include bag batch numbers.
- B. Provide complete descriptive information detailing proper care, maintenance and cleaning of pool shell.

## PART 2 – PRODUCTS

### 2.1 STEEL REINFORCEMENT

- A. All reinforcing steel shall be standard sizes of deformed bars equal to the requirements of the “Standard Specifications for New Billet Steel, Concrete Reinforcement”, Intermediate Grade, Serial Designation ASTM A-615, Grade 60, latest revision, as adopted by the American Society for Testing Materials.
- B. Reinforcing steel shall be sized and positioned as noted on drawings.
- C. Steel reinforcing placement schedule is predicated on the following:

Method of analysis: ACI-31B, ultimate strength method concrete pump mix: 4,500 psi  
fr = 600 psi  
reinforcing: fy = 60 ksi  
soil backfill @ walls: 120 pcf  
angle internal friction of soil = 34 degrees  
soil/sub-base: 6” compacted crushed stone K = 300 pci
- D. All rebar to be supported by wire chairs; blocks or half blocks not acceptable.

### 2.2 PNEUMATIC CONCRETE

- A. Dry-Mix Guniting aggregate shall consist of clean, hard, sharp particles containing maximum moisture content of 5% and the sand shall be well graded in size within the following limits:

Passing Through	Percent by Weight
3/8 Screen	100
No. 4 Mesh Sieve	98 to 100
No. 8 Mesh Sieve	70 to 95
No. 16 Mesh Sieve	60 to 85
No. 30 Mesh Sieve	45 to 65

No. 50 Mesh Sieve	15 to 35
No. 100 Mesh Sieve	0 to 5

- B. All cement for gunite shall conform to the requirements of the “Standard Specifications for Portland Cement” serial designation C-150 of the ASTM and shall be Type I or Type II, and shall be delivered to the job site in original packages and well protected from weather and moisture during storage.
- C. The concrete in the floor of the swimming pool may be poured in place. A 4” – 6” slump, 4,500 pounds transit mixed concrete shall be used (minimum). All concrete in the floor shall be placed in one continuous pour avoiding cold joints. The surface shall be screened off and finished to receive interior coating specified.
- D. If the floor is poured, the reinforcing steel shall run continuously between the floor and the wall. The area of the floor which is in contact with the wall shall be cleaned and sloshed with neat cement before commencing the wall gunite operation.
- E. In the event wet-mix, pneumatically placed concrete (shotcrete) is used, the mix design shall be as noted below. The mix design may be modified to address the specific characteristics of the local aggregate or to address weather conditions.

**Mix Design**

Sand.....	1,750 lbs.
Cement.....	750 lbs.
3/8” Stone.....	950 lbs.
Air.....	7%
Slump.....	3”

- F. At no time shall a retarder admixture be used. Should there be an issue with transit time and preapproved by the Engineer for this project the following Hydration Control Admixture may be used:
  - 1. Manufacturer: W.R. Grace Chemical Company
  - 2. Product: Recover, Hydration Control Admixture
  - 3. Dosage: Up to 3 to 6 oz. per 100 wt. of cement/fly ash
- G. When additional waterproofing is required and noted on plans, the following admixture is to be used:
  - 1. Manufacturer: Premier Magnesia, LLC
  - 2. Product: Prevent + - C Admixture
  - 3. Dosage: 5% per wt.
- H. Use only water which is clean, potable and free from deleterious amounts of acid, alkali, salt, organic materials. The contractor is responsible for the cleanliness of the water regardless of source. (i.e. Owner provided)

**2.3 CERAMIC TILE**

- A. Ceramic tile work shall be installed in conjunction with plaster interior and/or as indicated on the drawings.

- B. The Pool Contractor shall furnish and install tile work within the pool shell as indicated herein or on the drawings.
- C. Tile shall be certified by the Tile Council of America (TCA) to be equal to or in excess of standard grade requirements of ANSI A-1237.1. Grouting and setting materials shall be as manufactured under TCA criteria.
- D. Tile shall be ceramic “Standard Grade” porcelain units cushion edge.
- E. New tile shall be furnished for floor lane line and water line tile and shall be installed on clean concrete utilizing a mastic designed for this purpose and as recommended by TCA.
- F. New tile wall targets shall be furnished and installed on racing end walls. Tile targets shall be installed in a “thin-set” bed of mortar in accordance with the specifications of the American National Standards Institute, at an elevation to accept new interior coating, and such that end wall shall be vertical in end-plane.
- G. Tile shall be ceramic, frostproof, cushion edged as manufactured by:
  - 1. Keystone series by Dal-Tile, or approved equal.
  - 2. Colorways by American Olean, or approved equal.
  - 3. The tile must be full-depth color. Top coated coloring will be rejected.

## 2.4 BOND COATING

- A. A ‘Permacoat’ bond coating system as manufactured by CL Industries shall be applied to the entire pool interior prior to the plaster application.
- B. Bond coat shall be comprised of a listed bonding agent, Acryl 60 or equal, sand, and Portland cement. This mixture shall be mixed in the following proportion:

2½ gallons Acryl 60  
94 lb Permacoat cement  
100 lb sand  
Water as required to provide a mixture with the consistency of heavy paint

- C. A bond coat is required.
- D. A plaster or cement slurry is not an acceptable bond coat.

## 2.5 INTERIOR COATING

- A. The Pool Contractor shall furnish and install a permanent quartz aggregate plaster interior coating as shown on the project drawings. Coating shall include a blend of quartz aggregate and polymer-modified white cement.
- B. Quartz aggregate plaster coating shall be “Diamond Brite” as manufactured by SGM, [www.sgm.cc](http://www.sgm.cc), 800-641-9247. Color to be “Super Blue” or such other color as may be selected by the Owner/Engineer.

- C. The finish shall be ½” thick minimum and shall be troweled to a smooth, dense, impervious surface. Extreme care shall be taken to avoid staining the surface of the finish during troweling operations.
- D. Prior to application of the finish, the surfaces to be coated shall be thoroughly cleaned of dust, oil, paint, loose materials and any foreign matter.
- E. Note that all Quartz Plaster comes in pre-mixed bags. This material must be checked and data recorded for:
  - 1. Batch number (every bag)
  - 2. Bag count
  - 3. Date of manufacturer – There is a shelf life
- F. No additional materials may be added except:
  - 1. No more than 1% calcium chloride. This must be properly measured in a graduated container and written results of calculations provided with Item E above.
  - 2. One bag of standard plaster per hopper mix plaster lubricates the flow when pumped and should only be used for this purpose.
  - 3. Any arbitrary addition of materials by improperly calculating bags or just using coffee cans will be cause for immediate rejection.

## PART 3 – EXECUTION

### 3.1 POOL WALL FORMING

- A. The Contractor shall furnish a perimeter screed which shall serve to delineate the top and back of the pool wall. If necessary due to unstable soil conditions the Contractor shall furnish and erect a full perimeter wall back form against which the pneumatic concrete shell shall be placed. Form shall in any case properly designate the outline of the pool including the beam section of the wall.
- B. The Contractor shall take all necessary measures and precautions to ensure the integrity of the perimeter back form to ensure no movement or deflection during the concrete placement process.
- C. Wooden materials utilized for any portion of the back form that shall remain in place subsequent to concrete placement shall be pressure treated.
- D. Formwork to be adjusted for embedments, such as recessed steps to ensure proper clearance steel.

### 3.2 PLACEMENT OF FITTINGS

- A. Before commencing the steel and/or concrete work, the Contractor shall place all special pool fittings and receptacles that are to be embedded in the gunite structure and shall be responsible for their positioning in accordance with the drawings.
- B. Pressure test and hold pressure on all piping running under or connecting within pool structure for entire duration of concrete installation.

- C. Confirm main drains are hydraulically plumbed, fitted with collection tubes and clear around base to allow for concrete below.

### 3.3 STEEL REINFORCEMENT

- A. Steel reinforcing shall be placed accurately in position as noted on project drawings, and securely fastened and supported to prevent displacement before or during concrete placement. Cleaning, bending, placing and splicing of reinforcement shall be done in accordance to American Concrete Institute Building Code. Minimum lap for spliced bar reinforcing shall be forty (40) bar diameters. No splicing shall be made except where supported. Metal chairs shall be used to support steel away from the earth, stone, or formwork. All splice wires must be bent down after installed.
- B. After reinforcing has been placed and supported, no wheeling of materials shall be done across steel except over proper run-ways bearing on forms rather than reinforcing. Lifting reinforcement by estimate as concrete structure is placed will not be allowed.
- C. Rebar must have 3” minimum clearance from any formwork or earth and 2” minimum clearance from all interior surfaces.
- D. Steel must be secured from any movement; vertically and horizontally.
- E. Install bolsters, chairs, spacers, and other devices for spacing, supporting and fastening reinforcement in-place:
  - 1. Use wire bar type supports; comply with CRSI recommendations, unless otherwise shown on drawings.
  - 2. Do not use wood, brick, or other noncomplying material.
  - 3. For slabs on grade where base material will not support chair legs, use supports with sand plates or horizontal runners.
  - 4. For exposed-to-view concrete surfaces where support legs are in contact with forms, provide supports with either hot-dip galvanized or plastic-protected legs.
- F. ! Bonding !  
Upon completion of steel work and embedment, verify that surfaces and sub base for the pool have been properly prepared. Check that all reinforcing steel is in place, properly tied, and has been electrically bonded. Confirm that anchors for gutter, cup anchors and any other metal parts exceeding 4” have been installed and are properly set. Conduct electrical continuity test for bonding in accordance with NEC. Obtain Electrical Inspector’s approval before proceeding. Bond wire to be #8 gauge solid copper with UL Approved connectors.

### 3.4 PNEUMATIC CONCRETE

- A. The pool structure is designed as a monolithic unit and all gunite, walls and floor, in one unit of construction shall be placed, insofar as possible, in one continuous operation. Gunite surfaces against which new gunite is to be placed shall be thoroughly cleaned and slushed with neat cement. Structural designs as shown on the pool drawings shall govern. The pool structural design is based on the use of pneumatically applied concrete, utilizing dry or wet mix delivery equipment. There are no expansion joints called for or will be allowed in the pool structure. All pneumatically applied concrete shall meet 4,500-psi design requirements tested in accordance with the procedures outlined herein. Using lesser strength material in hopes that it will cure stronger will be cause for immediate rejection and removal.

- B. The structural design as shown on the drawings is based on information available prior to construction and may require modification based on actual observed conditions after excavation. The Contractor shall notify the Engineer and Soil Testing Agency in advance of the completion of excavation so that a meeting can be arranged on the site to view the completed excavation. At that time, the Engineer / Soil Testing Agency shall determine, by observing actual soil and/or water conditions, if any structural redesign is required.
- C. Although the concrete application method herein outlined is consistent with the “dry-mix” gunite delivery method, “wet-mix” shotcrete application is considered an equal under the design requirements of this project.
- D. Dry-Mix Gunite materials shall be mixed in the proportion of one (1) part cement to three (3) parts gunite sand by volume, mixed dry in a batch mixing machine for a period of not less than one minute after all materials have been added. Hydration shall occur at the nozzle of the cement gun using just enough water so that no slump shall occur in the placed material. The cement gun shall be equipped with an air pressure gauge and the air pressure at the end of the gun shall not be less than 45 lbs. nor more than 70 lbs. when hose is 200 ft. in length or less. Air pressure shall increase 5 lbs. for each additional 50 ft. of material hose used unless approved by the Engineer. Water pressure at the nozzle shall be maintained at not less than 15 lbs. greater than the air pressure at the gun. Structural gunite shall be applied against original undisturbed soil, thoroughly compacted earth or suitable forms that will not yield during application of the gunite. Surface upon which the gunite is to be applied shall be shot at a right angle to the surface starting at the bottom and continuing upward. It will be built up in layers of thickness that will not slump allowing sufficient time between the placing of layers for initial set to take place. All loose fine aggregate or rebound shall be removed from the surface being gunited before placing succeeding layers and whenever possible, the first layer shall entirely cover the reinforcing steel in order to secure it in its proper position.
- E. The operating air pressure is the pressure driving the material from the gun into the hose and is measured at the material outlet or air inlet on the gun. The operating pressure varies directly with the hose length, the specific weight of the material mix, the height of the nozzle above the gun, the number of hose bends, plus other factors. A rule of thumb is that operating pressures should not be less than 40 psi (275 kPa) when 100 ft. (30 m) or less of material hose is used and the pressure should be increased 5 psi (35 kPa) for each additional 50 ft. (15 m) of hose and 5 psi (35 kPa) for each additional 25 ft. (8 m) the nozzle is above the gun. At no time shall concrete be placed with less than 40 psi unless specifically pouring the floor. A poured floor must commence at least 14 days before shooting walls.
- F. Gunite must test in place 4,500 psi after 28 days. Coordination with the Independent Testing Agency and provision of testing samples shall be the responsibility of the Pool Contractor pursuant to the appropriate sections of these specifications.
- G. At the end of a day’s shooting or any similar stopping point the gunite shall be tapered to a thin edge. Before shooting the next day, the tapered portion shall be thoroughly cleaned and wetted. No square joints will be allowed.
- H. Taut cutting wires shall be established and anchored to insure dimensions integrity of the gunite structure. Cutting wires shall be placed at all intersections of pool radius and vertical walls and on floor elevation pins to insure dimensional accuracy of the structure.

- I. Protect gunite against frost and rapid drying. All completed areas shall be cured by continuous wetting for a period of seven (7) days after placing; during this period gunite shall be maintained above 32 degrees F for at least five (5) days.
- J. The air temperature may not drop below 40 degrees F at any time for at least five (5) days prior to shooting, at time of shoot, and throughout entire duration of placement. Pneumatically applied concrete shall not be placed during freezing weather, nor against any surface on which frost is present.
- K. Surfaces upon which gunite is to be applied shall be sufficiently damp to prevent excessive absorption of water content in the gunite mix, but not so wet as to overcome suction.
- L. Reinforcing steel shall be clean and unpainted.
- M. A blowpipe and operator shall be used to prevent a buildup of rebound on the prepared surface.
- N. All rebound materials shall be removed continuously and shall not be permitted to accumulate; no rebound material will be permitted within completed concrete structure; such inclusions will be cause for rejection of work. Rebound shall be removed from site.
- O. No joints will be allowed other than construction joints, as indicated on approved Shop Drawings. Once shooting has commenced, the operation must be continuous until section is complete.
- P. All minor voids occurring on surfaces of structure shall be filled in with Thoroseal or Water-Plug. Large voids shall be filled in by applying additional gunite.

### 3.5 GROUT

- A. Before placing grout the contact surface of the pool shell shall be thoroughly cleaned and moistened; grout shall be rodded and puddled to insure complete filling of all voids. Once grout has taken initial set the interior form shall be removed, any voids discovered immediately filled and the surface of the grout dressed to desired texture. Rebate for caulked joint should be cut, cleaned and dressed to insure optimum placement and proper bonding.

### 3.06 WATERBLASTING (when specified, shall mean:)

- A. Waterblast, at 35,000 psi minimum, existing pool walls and floor to remove all existing plaster and to leave a sufficient rough texture on the concrete substrate to receive pre-plaster bond coating.
- B. Care shall be taken to remove all material so as to insure that new finished dimensions are no shorter than the original finish dimensions.

### 3.7 INTERIOR FINISH OF SWIMMING POOL

#### A. Surface Roughness

- 1. Check that all surfaces have been adequately prepared for plaster during the preliminary Work for tile. Surfaces that are unacceptably smooth shall be etched with a fifteen percent (15%) solution of muriatic acid to obtain proper surface roughness.

2. All acid-washed surfaces shall be flushed with fresh water to remove all traces of the muriatic acid and any foreign contaminants. If acid is to be applied, do not allow acid to contact tile, tile grout or tile setting bed; repair or replace any material so affected.

#### B. Surface Cleaning Preparation

1. Pool interior shall be cleaned by conventional acid-washing processes to etch and clean all surfaces.
2. Residual water shall be passivated by adding pH neutralizing compounds prior to and during the discharge of the waste water.
3. Subsequent to acid wash, pool shell interior shall be further cleaned with a neutralizing and degreasing solution containing TSP or equal. Rinse with fresh water.

#### C. Ceramic tile trim and markings:

1. Ceramic tile work shall be installed in conjunction with plaster interior and as indicated on the drawings.
2. Step edge or other markings in plaster pools shall be installed in a "thin-set" bed of mortar in accordance with the specifications of the American National Standards Institute.

#### D. Bond Coat

1. A Permacoat bond coating system shall be applied to the entire pool interior prior to the plaster application. A layer of plaster will not be acceptable.
2. Application:
  - a. Dampen surface to receive coating immediately prior to application.
  - b. Apply by paint rollers to all surfaces ensuring coverage is sufficient to ensure finished texture will be extremely rough as approved by Plaster Rep.
  - c. Allow minimum curing time of 36 hours.

#### E. Plaster Interior Coating General

1. The finish shall be to ½" thick minimum and shall be troweled to a smooth, dense, impervious surface. Extreme care shall be taken to avoid staining the surface of the finish during troweling operations. When properly controlled, calcium chloride may be added to the mix.
2. Prior to application of the finish, the surfaces to be coated shall be thoroughly cleaned of dust, oil, paint, loose materials and any foreign matter.
3. The interior finish shall not be applied until:
  - a. All work in the pool area including any finish grading, deck work, etc. has been completed.
  - b. The filter system is completely installed with electric connected and ready to operate.
  - c. Water for filling the pool uninterruptedly will be available immediately upon completion of the interior finish application.
4. Water shall be supplied by and monitored by the Owner during the filling process. Owner shall be responsible to turn-off water supply upon completion of filling.

5. Plaster surfaces shall be maintained wet at all times. Provide wetting devices (sprinklers) as required until pool can be filled.
6. Contractor shall ascertain that there is an adequate supply of clean, fresh water available before starting work. Supply waterline shall be thoroughly flushed to remove all impurities, especially rust. Provide sequestering agents to prevent stains from materials precipitating out of the water. Immediately remove any materials that have fallen onto the pool surfaces.
7. All materials for performing work shall be on-hand before starting; special care shall be taken to make certain that the finish coat is uniform in color and texture and Contractor shall protect it from becoming stained. Contractor shall verify that all cement is from the same plant batch, that the lime is uniform in color, and that aggregate is from the same location and is of uniform size and color. Replace any plaster that becomes discolored and does not match remaining surfaces.
8. Inspect and verify that all pool interior tile has been installed and accepted by Engineer. Do no work until all tile is in place and accepted. During plastering operations, remove all splatter from tile surfaces before the end of the day. Do not allow to set up overnight.
9. Plaster Manufacturer's Representative to be on site during install and shall sign off directly on warranty prior to leaving site. Any costs associated with having Manufacturer out is to be covered by Contractor.

### 3.8 CLEAN-UP

- A. At completion of Work, carefully clean all surfaces and remove any plaster spatter, lumps, sharp points, and rough spots. Check all tile and plaster by bare hand and remove any sharp edges. Grind sharp edges before filling pool. Note: Contractor may be required to perform this check using a diver after pool has been filled if plaster appears to have inconsistencies.
- B. All plaster and excess plaster shall be removed immediately and not allowed to harden on other surfaces; excess plaster shall not be dumped or otherwise allowed to flow down into main drain. At end of plaster work, pump pool dry using sump pump. Under no conditions allow water to enter main drain line. Contractor shall check that main drain grates and pool shell fittings are free and clear of plaster and shall check that the main drain is unrestricted. If these items are restricted or covered they shall be removed, cleaned and reinstalled by the Contractor before completing work.
- C. Do not wash tools or equipment in pool; under no conditions shall plaster in any way be washed down main drain. Unplug main drains only after all debris and contaminants have been removed from the pool.
- D. Maintain the pool for a period of five days or until handover to Owner. This includes brushing down the walls daily and keeping the pool clean and clear. **REFER ALSO TO NPC START UP CHART.**

### 3.9 WATER CHEMISTRY BALANCE

- A. Pool Contractor shall, prior to the filling of pool, obtain a sample of the fill-make-up water and shall have same tested for:

Total alkalinity  
Calcium Hardness  
pH

Copper  
Manganese  
Iron  
Total Dissolved Solids

The test results shall be forwarded to the Owner.

- B. Upon completion of pool filling and prior to the addition of any adjustment or sanitizing chemicals, an appropriate chemical sequestering agent shall be added to the pool water as required to prevent and minimize any metal precipitant. Pool shall be allowed 24 hours to circulate before any additional adjustment or sanitizing chemicals are added.
- C. Upon completion of pool filling, Contractor shall provide a one-time adjustment of pool water chemistry to the following parameters:

Total Alkalinity - 100 - 120 ppm  
Calcium Hardness - 150 - 250 ppm  
pH - 7.4 - 7.8

After balancing, fill out start up checklist provided on plans, with Owner or Engineer present.

- D. All chemicals required to perform the above adjustments as well as sequestering agents shall be provided by the Pool Contractor.
- E. Top off chlorine tank prior to handing over pool to Owner
- F. Do Not Heat water for fourteen (14) days after initial plastering.

### 3.10 GUARANTEE

- A. Contractor shall provide a bonded warranty for two (2) years and an extended warranty for a period of four (4) years beyond first year for workmanship and materials.
- B. Repairs shall be coordinated with Owner's scheduled use of the facility.
- C. Dumping of pool water for Contractor's convenience shall be paid for by Contractor.

END OF SECTION 033200

## SECTION 037300 – CONCRETE REHABILITATION

### PART 1 – GENERAL

#### 1.1 SUMMARY OF WORK

- A. Patch all broken out areas including, but not limited to:
  - 1. Floor at removed partition wall
  - 2. Sawcut walls of partition wall
  - 3. Area at removed pump base and pipe support column
- B. Install new equipment pads following including, but not limited to:
  - 1. Filter tank leveling pad.
  - 2. Recirculation pump.

#### 1.2 REFERENCED DOCUMENTS

- A. Section 03732 - Concrete Repair
- B. ACI 304

#### 1.3 QUALITY ASSURANCE

- A. All work shall be accomplished by workers trained and experienced in this trade and who are completely familiar with the Work.
- B. Provide laboratory test report for concrete materials and mix design test.

### PART 2 – PRODUCTS

#### 2.1 GROUT

- A. Use Portland cement conforming to ASTM C-150, type 1, 1/8” clean stone aggregate, potable water, air entrained conforming with ASTM C-260.
- B. No chloride ions or accelerating admixtures.
- C. Grout mix shall attain 4,000 psi strength after 28 days

#### 2.2 PATCHING MATERIAL

- A. Use SikaRepair 222 for deep horizontal patched surfaces
- B. Use SikaDur 45 for shallow horizontal patched surfaces
- C. Use SikaRepair 223 for shallow vertical patched surfaces
- D. Install per manufacturers directions including application of primer.

### PART 3 – EXECUTION

#### 3.1 PREPARATION

- A. Power wash all newly exposed concrete, acid etch and then power wash all previously exposed concrete.
- B. Take precautions to protect all personnel including Owner and Engineer from injury during installation procedures. Review all first aid procedures associated with chemicals.

### 3.2 GENERAL INSTALLATION

- A. Bring all horizontal surfaces level with existing deck, strike off.
- B. Do not install any concrete work when the temperature is below 45° f.
- C. Chamfer all equipment base edges, rub finished walls smooth. Install additional reinforcement as required.

END OF SECTION 037300

## SECTION 079050 - POOL INTERIOR SEALANTS

### PART 1 - GENERAL

#### 1.1 WORK INCLUDED

- A. Work includes, but is not limited to, the following
  - 1. All penetrations and openings in pool structure.
  - 2. Concrete shell expansion joints.
  - 3. Main drain penetrations.
  - 4. Pipe penetrations.
  - 5. Gutter to pool wall.
  - 6. Gutter to deck.
  - 7. Deck to deck.

#### 1.2 RELATED WORK

- A. Section 13160 - Pool Recirculation System
- B. Section 13163 - DE Filter. Or Section 13163 - High Rate Sand Filter.

#### 1.3 QUALITY ASSURANCE

- A. Use adequate number of skilled workers who are thoroughly trained and experienced in the necessary crafts and are completely familiar with the Specified requirements and methods needed for proper performance of the Work of this Section
  - 1. Workers used to perform this Work shall have at least five (5) years experience in their craft.
  - 2. Workers shall have performed similar Work on at least five (5) pools of similar type and size.
  - 3. Work shall be done by a Sika approved, trained Contractor.
- C. Check all labels to ascertain that proper materials have been shipped and that the shelf-life of product has not expired.
- D. Store material indoors at temperature condition specified by manufacturer.
- E. Where substitute materials are offered, Contractor shall verify substitute is compatible with other components of the Work and recommended by manufacturer for the purpose intended. Contractor shall provide with product submittal such statement signed by Contractor and product manufacturer, and make such remedial action, as necessary to correct any defects in the Work, including total replacement, if such appears necessary in the opinion of Engineer.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURER

- A. Products are as manufactured by Sika Corporation, 201 Polito Avenue, Lyndhurst, NJ 07071 (Tel: 201/933-8800) and as indicated below.
- B. Pecora Corp., 165 Wambold Road, Harleysville, PA 19438, (Tel: 800/523-6688).

### 2.2 JOINTS EXPOSED TO AIR AND NOT IMMERSED

- A. PVC to Concrete
  - 1. Primer; Sika Primer 429/202.
  - 2. Sealant; Sikaflex-1a Polyurethane.
- B. Steel to Concrete
  - 1. Primer; Sika Primer 429/202.
  - 2. Sealant; Sikaflex-1a Polyurethane.
- C. Concrete to Concrete (Joint)
  - 1. Primer; Sika Primer 429/202.
  - 2. Sealant; Sikaflex-1a Polyurethane.
- D. Backer Material
  - 1. Expanded, closed-cell polyethylene of size required to fill gap, or **as shown on Drawings**. As manufactured by A.H. Harris, Newark, N.J.
- E. Solvent
  - 1. Toluene; equipment cleaner, as manufactured by Sika Corporation, Lyndhurst, NJ.
- F. Masking Tape
  - 1. Paint masking tape 3/4 " as manufactured by Scotch 3M Co., St. Paul Mn.

### 2.3 JOINTS IMMERSED IN POOL WATER

- A. PVC to Concrete
  - 1. Primer; Pecora P-53.
  - 2. Sealant; Pecora Synthacalk GC-2
- B. Steel to Concrete
  - 1. Primer; Pecora P-53.
  - 2. Sealant; Pecora Synthacalk GC-2

- C. Concrete to Concrete
  - 1. Primer; Pecora P-53.
  - 2. Sealant; Pecora Synthacalk GC-2
- D. Backer Material
  - 1. Closed cell polyethylene of size required to fill gap or as shown of Drawings.
- E. Solvent
  - 1. Toluene product recommended by the manufacturer.
- F. Masking Tape
  - 1. Paint masking tape to 3/4" wide as manufactured by Scotch 3M Co. St. Paul. Mn.
- G. Paint for Pool Water Immersed Caulking. Sau Sea Pool Paint, 149 Highway #206 North, Vincentown, N.J. 08088. (Tel: 609/859-8500).

## PART 3 - EXECUTION

### 3.1 PRELIMINARY

- A. Sealant manufacturer shall agree to send a qualified technical representative to site, when requested, to advise in selection of proper materials and their installation.
- B. Do not proceed with sealant installation during inclement weather, until joint is thoroughly dry, and until all requirements and manufacturer's instructions can be complied with.
- C. Concrete and Masonry Joint Surfaces
  - 1. Etch bonding surfaces with five percent (5%) solution of muriatic acid.
  - 2. Rinse thoroughly with water and dry.
- D. All joints, cracks and apertures shall be clean and free of deleterious substances and moisture. All joints shall be primed, in accordance with manufacturer's recommendations.

### 3.2 BACKER MATERIAL

- A. Installation
  - 1. Pack joint with backer rod after concrete has cured or install backer sheet material before pouring.
  - 2. Material shall be larger than the opening.
  - 3. Joint shall not be wider than one half inch (1/2") or deeper than one half inch (1/2").

### 3.3 JOINT SEALANT

#### A. Application

1. Apply sealant in continuous beads with no open joints, voids or air pockets.
2. Remove any spillage or overflow that may occur.
3. Confine sealants in joint areas with masking tape.
4. Apply compound in concealed compression joints accurately so excess compound will not exude from joint.

### 3.4 FINISHED JOINT

- A. Top surface of sealant shall be slightly concave, smooth, continuous and free of air bubbles.

### 3.5 CLIMATE CONDITIONS

- A. Do no Work until conditions of temperature and humidity, as specified by manufacturer, have been met. Protect Work from weather after completing.

### 3.6 PENETRATION

- A. Do not apply paint, silicone damp-proofing or other coating or substances to surface adjoining joint surface until sealants have been applied and are nominally cured.
- B. Apply elastomeric sealants, which are not subject to traffic or other abrasions, to a depth equal to one half ( $\frac{1}{2}$ ) joint width; but not less than one quarter ( $\frac{1}{4}$ ) and not more than one half ( $\frac{1}{2}$ ) joint width.
- C. Tool exposed surfaces of compounds and sealants to profile as shown on Drawings; if not shown, tool slightly concave.
- D. Pour self-leveling grade compounds in horizontal joints to level or, if none is shown, to a level one-sixteenth inch ( $\frac{1}{16}$ " ) below adjoining surfaces.
- E. Remove excess compound or sealant promptly, as Work progresses, and clean adjoining surfaces.
- F. In rough surfaces or joints of uneven width, apply sealant well back in joints.
- G. Color match sealant to adjoining surfaces; except where indicated, color is to be as selected by Engineer.

END OF SECTION 079050

## SECTION 092230 - POOL INTERIOR COATING

### PART 1 – GENERAL

#### 1.1 SUMMARY

- A. Waterblast (35,000 psi) painted finish completely off
- B. Remove and replace racing lanes and end wall target tile
- C. Remove and replace waterline tile
- D. Remove and replace coping (set 1” higher)
- E. Clean out and rebuild interior expansion joints
- F. Plaster (Diamond Brite) entire interior
- G. Filling and balancing Pool

#### 1.2 RELATED WORK

- A. Applicator Qualifications: Contractor and job foreman shall have a minimum of 5 years experience installing swimming pool plaster and tile work.
- B. All construction to be in accord with standard industry practices, using all new and unused materials to produce a quality, finished product.
- C. The plaster interior finish shall be applied by mechanics having at least five (5) years experience in the application of this finish to masonry concrete swimming pool interiors, and bidding pool contractors shall provide with their bid a list of 10 projects which have been completed by the bidding contractors firm with surface areas of 3000 sq ft or larger in which the bidding contractor has had the contractual responsibility to provide a plaster interior pool coating.

#### 1.3 PRODUCT DELIVERY AND STORAGE

- A. Delivery shall be in the manufacturer's original unopened container, clearly identifying each product specified, relating it to the product literature submitted.

#### 1.4 SUBMITTALS

- A. Submit Product Data on sealants and primers.
- B. Submit manufacturer's descriptive literature; including surface preparation and installation instructions and color charts.

#### 1.5 WARRANTY

- A. All work and materials are subject to the general warranty for a period of 2 years from date of Substantial Completion against: failure to perform as intended because of either leaking, crumbling, hardening, shrinkage, bleeding, sagging, staining, loss of adhesion or loss of cohesion.

## 1.6 QUALITY ASSURANCE

- A. All construction to be in accord with standard industry practices, using all new and unused materials to produce a quality, finished product.

## PART 2 - PRODUCTS

### 2.1 CERAMIC TILE

- A. Ceramic tile work shall be installed in conjunction with plaster interior and/or as indicated on the drawings.
- B. The Pool Contractor shall furnish and install 2" x 2", tile work within the pool shell as indicated herein or on the drawings. Color shall be selected by the Architect.
- C. Tile shall be certified by the Tile Council of America (TCA) to be equal to or in excess of standard grade requirements of ANSI A-1237.1. Grouting and setting materials shall be as manufactured under TCA criteria.
- D. Tile shall be ceramic "Standard Grade" porcelain units, 2" x 2" cushion edge, satin finish (on floor), glossy finish at waterline.
- E. New tile shall be furnished for floor lane lines, end wall targets, waterline and construction joints and shall be installed on clean concrete utilizing a mastic designed for this purpose and as recommended by TCA. Size of lane shall consistent with existing.
- F. New tile wall targets shall be furnished and installed on racing end walls. Tile targets shall be installed in a "thin-set" bed of mortar in accordance with the specifications of the American National Standards Institute, at an elevation to accept new interior coating, and such that end wall shall be vertical in end-plane. Configuration of targets shall be as those removed.
- G. Two (2) inch band of tile shall be placed at both sides of all expansion joints for the entire length to provide a terminus for the new interior coating.
- H. Tile shall be ceramic, frostproof, cushion edged Moonbeam series as distributed by the National Pool Group, 888-476-7665, or as noted on drawings.

### 2.2 DIAMOND BRITE INTERIOR COATING

- A. The Pool Contractor shall furnish and install a permanent quartz aggregate plaster interior coating as shown on the project drawings. Coating shall include a blend of quartz aggregate and polymer-modified white cement.
- B. Quartz aggregate plaster coating shall be "Diamond Brite" as manufactured by Southern Grouts and Marble, 1502 S.W 2nd Place, Pompano Beach, FL 33069 800-641-9247, 954-943-2288, or equal. Color to be "Super Blue" or such other color as may be selected by the Owner/Engineer.

- C. The finish shall be ½” thick and shall be troweled to a smooth, dense, impervious surface. Extreme care shall be taken to avoid staining the surface of the finish during troweling operations.
- D. Prior to application of the finish, the surfaces to be coated shall be thoroughly cleaned of dust, oil, paint, loose materials and any foreign matter.
- E. Interior finish shall be applied by mechanics having at least three (3) years experience in the application of this finish to gunite swimming pool interiors.

### 2.3 BOND COATING

- A. A ‘Bond Kote’ bond coating system as manufactured by SGM Industries shall be applied to the entire pool interior prior to the plaster application.
- B. Bond coat shall comprise a bonding agent, Acryl 60 or equal, sand, and portland cement.

This mixture shall be mixed in the following proportion:

2 ½ gallons Acryl 60

94 lb Permacoat cement

100 lb sand

Water as required to provide a mixture with the consistency of heavy paint.

## PART 3 - EXECUTION

### 3.1 PRELIMINARY

- A. Note that plaster work will have to be accomplished after tile work has been installed and setting grout cured. Pool shall be drained of any water by pumping to nearest storm sewer. As draining progresses, dirt, loose concrete, etc., if any, shall be scrubbed and removed from all surfaces.
- B. Pool surface shall be thoroughly flushed with fresh water to assure complete removal of foreign materials and to minimize the amount of acid washing required before application of plaster. If dirt cannot be removed, pool shell may require acid washing before the application of plaster. Plaster shall be applied to all concrete except where tile is to be installed.
- C. Plug main drain openings after pool is drained and before any acid washing or plaster Work is started. Under no condition shall any acid or plaster be allowed to enter main drain. Do not wash off tools in main drain.

### 3.2 SELECTIVE DEMOLITION

- A. Pool Contractor to demolish existing finishes and ancillary items noted as required to complete proposed renovation process. Demolition to include removal as required of demolished/excavated material.

B. Demolition to include but is not limited to the following:

1. Remove completely all paint and tile within the pool down to sound substrate, walls and floor. See water blasting section 3.03 below
2. Rout and prepare approximately 100 lf of existing cracks for repair.
3. Remove all racing lane tiles and prep for new tile installation.
4. Remove existing tile wall targets.
5. Remove existing caulk at expansion joints.
6. Protect portions of facility beyond the work area to prevent contamination, damage or accumulation relating to airborne debris or any other deleterious consequence of the subject work.
7. Rake out, clean and power wash existing pool expansion joints.

3.3 WATERBLASTING

1. Waterblast, at 35,000 psi minimum, existing pool walls and floor to remove all existing paint and to leave a sufficient rough texture on the concrete substrate to receive pre-plaster bond coating.
2. Care shall be taken to remove all material so as to insure that new finished dimensions are no shorter than the original finish dimensions.

3.4 INTERIOR SHELL REPAIR

Interior shell repair shall include all work as outlined below:

A. Structural Cracks

1. Pool Contractor to include repair of 100 lf of structural cracks as required on pool interior.
2. Cracks to be routed in a "V" configuration to a minimum depth of  $\frac{3}{4}$ ". Surface to be prepared by applying a proper bonding agent and filling with an epoxy grout.
3. All crack repair material shall be as manufactured by Sika Corporation and products utilized shall be placed as recommended by the manufacturer.

B. Shell Coating Repair

1. All sections of wall and floor which have been removed due to hollow, loose, or deteriorated areas, as well as those tile areas which may have been removed, shall be repaired to existing interior coating elevation in preparation for new interior coating process.
2. All repair material shall be a modified polymer cementitious material as manufactured by Sika Corporation and products utilized shall be placed as recommended by the manufacturer.
3. Carefully check all concrete surfaces. Remove and control all construction materials, including control wires and bars. Any ferrous materials shall be cut back a least one inch (1") beneath concrete surfaces and covered with a hydraulic cement. Use WaterPlug in holes greater than one-half inch ( $\frac{1}{2}$ "). Remove any high spots when forms have been removed.

C. Expansion Joint/Tile Caulk

1. The expansion joints located within the pool shall be caulked with a polysulfide caulk, Weatherban by 3M or equal.
2. The expansion joints located on the deck shall be caulked with a polyurethane caulk, Sika 2c-ns or equal

3.5 INTERIOR FINISH OF SWIMMING POOL

A. Surface Roughness

1. Check that all surfaces have been adequately prepared for plaster during the preliminary Work for tile. Surfaces that are unacceptably smooth shall be etched with a fifteen percent (15%) solution of muriatic acid to obtain proper surface roughness
2. All acid-washed surfaces shall be flushed with fresh water to remove all traces of the muriatic acid and any foreign contaminants. If acid is to be applied, do not allow acid to contact tile, tile grout or tile setting bed; repair or replace any material so affected

B. Surface Cleaning Preparation

1. Pool interior shall be cleaned by conventional acid-washing processes to etch and clean all surfaces.
2. Residual water shall be passivated by adding pH neutralizing compounds prior to and during the discharge of the waste water.
3. Subsequent to acid wash, pool shell interior shall be further cleaned with a neutralizing and degreasing solution containing TSP or equal. Rinse with fresh water.

C. Bond Coat

1. A 'Bond-Kote' coating system shall be applied to the entire pool interior prior to the plaster application. A layer of plaster will not be acceptable
2. Application:
  - a. Dampen surface to receive coating.
  - b. Apply by paint rollers to all surfaces ensuring coverage is sufficient to ensure finished texture will be extremely rough.
  - c. Allow minimum curing time of 24 hours.

D. Plaster Interior Coating General

1. The finish shall be ½" thick and shall be troweled to a smooth, dense, impervious surface. Extreme care shall be taken to avoid staining the surface of the finish during troweling operations. No calcium chloride may be added to the mix
2. Prior to application of the finish, the surfaces to be coated shall be thoroughly cleaned of dust, oil, paint, loose materials and any foreign matter.
3. The interior finish shall not be applied until:
  - a. All work in the pool area including any finish grading, deck work, etc. has been completed.

- b. The filter system is completely installed with electric connected and ready to operate.
  - c. Water for filling the pool uninterruptedly will be available immediately upon completion of the interior finish application.
- 4. Water shall be supplied by and monitored by the Owner during the filling process. Owner shall be responsible to turn-off water supply upon completion of filling.
  - 5. Plaster surfaces shall be maintained wet at all times. provide wetting devices (sprinklers) as required until pool can be filled.
  - 6. Contractor shall ascertain that there is an adequate supply of clean, fresh water available before starting Work. Supply waterline shall be thoroughly flushed to remove all impurities, especially rust. Provide sequestering agents to prevent stains from materials precipitating out of the water. Immediately remove any materials that have fallen onto the pool surfaces.
  - 7. All materials for performing Work shall be on-hand before starting; special care shall be taken to make certain that the finish coat is uniform in color and texture and Contractor shall protect it from becoming stained. Contractor shall verify that all cement is from the same plant batch, that the lime is uniform in color, and that aggregate is from the same location and is of uniform size and color. Replace any plaster that becomes discolored and does not match remaining surfaces.
  - 8. Inspect and verify that all pool interior tile has been installed and accepted by Engineer. Do no Work until all tile is in place and accepted. During plastering operations, remove all spatter from tile surfaces before the end of the day. Do not allow to set up overnight.

### 3.6 CLEAN-UP

- A. At completion of Work, carefully clean all surfaces and remove any plaster spatter, lumps, sharp points, and rough spots. Check all tile and plaster by bare hand and remove any sharp edges. Grind sharp edges before filling pool. Note: Contractor may be required to perform this check using a diver after pool has been filled if plaster appears to have inconsistencies.
- B. All plaster and excess plaster shall be removed immediately and not allowed to harden on other surfaces; excess plaster shall not be dumped or otherwise allowed to flow down into main drain. At end of plaster Work, pump pool dry using sump pump. Under no conditions allow water to enter main drain line. Contractor shall check that main drain grates and pool shell fittings are free and clear of plaster and shall check that the main drain is unrestricted. If these items are restricted or covered they shall be removed, cleaned and reinstalled by the Contractor before completing Work.
- C. Do not wash tools or equipment in pool; under no conditions shall plaster in any way be washed down main drain. Unplug main drains only after all debris and contaminants have been removed from the pool.
- D. Maintain the pool for a period of five days or until handover to Owner. This includes brushing down the walls daily and keeping the pool clean and clear.

### 3.7 WATER CHEMISTRY BALANCE

- A. Pool Contractor shall, prior to the filling of pool, obtain a sample of the fill-make-up water and shall have same tested for:

- Total alkalinity
- Calcium Hardness
- pH
- Copper
- Manganese
- Iron
- Total Dissolved Solids

The test results shall be forward to the Owner.

- B. Upon completion of pool filling and prior to the addition of any adjustment or sanitizing chemicals, an appropriate chemical sequestering agent shall be added to the pool water as required to prevent and minimize any metal precipitant. Pool shall be allowed 24 hours to circulate before any additional adjustment or sanitizing chemicals are added.
- C. Upon completion of pool filling, Pool Contractor shall provide a one-time adjustment of pool water chemistry to the following parameters:

- Total Alkalinity - 100 - 125 ppm
- Calcium Hardness - 150 - 250 ppm
- pH - 7.4 - 7.8

- D. All chemicals required to perform the above adjustments as well as sequestering agents shall be provided by the Pool Contractor.
- E. Top of chlorine tank prior to handing over pool to Owner

### 3.8 GUARANTEE

- A. Contractor shall provide a bonded warranty for two (2) years and an extended warranty for a period of four (4) years beyond first year for workmanship and materials.
- B. Repairs shall be coordinated with Owner's scheduled use of the facility.
- C. Dumping of pool water for Contractor's convenience shall be paid for by Contractor.

END OF SECTION 092230

## SECTION 130500 - SPECIAL CONDITIONS FOR POOL WORK

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This section applies to work that will be accomplished on the Existing Main Pool and Wading Pool and special conditions pertinent thereto and supplements the requirements stipulated elsewhere. The scope of this Work shall affect:
1. Shell, fittings and equipment
  2. Deck equipment
  3. Markings and warnings
  4. Recirculation system
  5. Filtration system
  6. Disinfection and chemical storage system
  7. Testing of pool recirculation system
  8. Testing of pool shells
  9. Dimensional certification and organization approvals
  10. Governmental Agency approvals
  11. Equipment warranties.

#### 1.2 RELATED WORK

- A. Division 1 - General Requirements  
B. Division 3 - Concrete Work  
C. Division 13 - Special Construction

#### 1.3 QUALITY ASSURANCE

- A. Workers installing pools shall have installed gunite pools and equipment of similar size and complexity for length of time called for below. Manufacturers of equipment and materials shall have manufactured such equipment for at least five (5) years.
- B. Pool work shall be accomplished only by mechanics skilled in their particular trades. A list of personnel and their qualifications shall be submitted to the Engineer for approval. Qualifications of persons working on this project are indicated in the specification sections or where not so provided will be as required below. Workers shall have as a minimum the following level of experience in the various trades:

- |                               |         |
|-------------------------------|---------|
| 1. Pool layout man            | 2 years |
| 2. Steel workers              | 3 years |
| 3. Shell fitting installers   | 5 years |
| 4. Deck equip installers      | 3 years |
| 5. Nozzlemen/Gunite Operators | 5 years |
| 6. Plasterers                 | 5 years |
| 7. Tile setters               | 5 years |

8. Painter 3 years

- C. The Contractor shall take special care that all surfaces are in true and proper alignment and comply with the tolerances set by the ACI, the cognizant aquatic organization and Division 3, Class A, surfaces of these specifications. Walls shall intersect at right 90-degree angles within one-half (1/2) degree. Walls shall not vary more than 1/8" in the top 2'-7" of the wall and shall be a true plane with in 1/8" over any 10 feet.
- D. All work and equipment shall meet the requirements of the ISPSC, and the Pennsylvania Uniform Construction Code, and also the requirements of the Pennsylvania Code, and hereinafter referred to as the Code.

#### 1.4 ELECTRICAL SUPPLY, GROUNDING AND BONDING

- A. All work shall comply with the National Electrical Code (NEC) latest edition.
- B. All pool electrical equipment shall be operated from GFCI protected circuits.
- C. All metal objects within 5'-0" of the inside walls of the pool and gutter and within the recirculation system shall be electrically bonded in accordance with NEC Par. 680.

#### 1.5 POOL CERTIFICATIONS

- A. The Contractor shall obtain the services of a Surveyor or Professional Engineer licensed in the State of Pennsylvania, who shall take measurements of the pools and certify thereto. Dimensions requiring certification are:
  - 1. Lengths, depths and widths, and verification of conformity with US Swimming and US Diving conducting meets at this facility.
  - 2. Provide three (3) full-size drawings (24" x 36") with all dimensions, signed and sealed by the Surveyor or the Professional Engineer.
- B. The Contractor shall maintain contact with the local Construction Department, local Sewer and Water Authorities and Department of Health, whom the Contractor shall apprise of the status of the work as it proceeds and schedule the appropriate mandatory inspections. The Contractor shall advise the Engineer when such inspections are scheduled and provided and the results thereof.
- C. No piping shall be covered until inspected by the local Construction Department and local Health Department. No metal objects shall be covered over until inspected by the local Electrical Inspector

PART 2 PRODUCTS - Not Used

## PART 3 EXECUTION

### 3.1 MOUNTING HARDWARE

- A. All mounting hardware and all hardware used for piping connections or other purposes within the filter room and the chemical room shall be stainless steel type 304. Cad plated or bare steel bolts are not acceptable.

### 3.2 ELECTRICAL

- A. Maximum voltage on system not to exceed 208 volt, 3 phase 60 hz.
- B. Voltages impressed upon a measuring characteristic of pool water shall not exceed 15 volts
- C. All receptacles shall be hospital grade and bear a green dot
- D. Electrical motors shall be non-overloading for their application
- E. Electrical motors shall be totally enclosed, fan cooled (TEFC) and shall run at 1750 RPM or less
- F. Three phase motors shall be rated at 208/230 volts with a 1.15 service factor at 208/230 volts
- G. Motors shall be supplied at adequate horsepower such that they do not run within their service factor
- H. All receptacles around the pool and filter room, and within 25 feet of pool deck outside perimeter shall be GFCI protected

### 3.3 EXISTING EQUIPMENT

- A. Where existing equipment is to be used, it shall be checked that it is safe and in a usable condition. Replace worn or defective parts

END OF SECTION 130500

## SECTION 131520 - POOL DECK EQUIPMENT

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Work shall include, but not be limited to, providing and installing the following:
  - 1. Winter Cover
  - 2. Handrails
  - 3. Ladders
  - 4. Lifeguard Chairs
  - 5. Safety Rope and Float
  - 6. Hold downs, wedges, sockets, escutcheons, anchors and hardware.

#### 1.2 QUALITY ASSURANCE

- A. Use adequate number of skilled workers who are thoroughly trained and experienced in the necessary crafts and are completely familiar with the Specified requirements and methods needed for proper performance of the Work of this Section.
  - 1. Workers shall have at least five (5) years experience in their trade.
  - 2. Workers shall have installed similar equipment on at least three (3) other pools of this size and complexity.
- B. Inspection
  - 1. Check all equipment for proper catalog numbers, size, type and quantity
  - 2. Ascertain that all component parts have been delivered and hardware is complete
  - 3. Inspect surfaces for marks and damages
  - 4. Repair or replace, as directed by Engineer
  - 5. Reject and return all defective equipment.
- C. Standards (latest edition)
  - 1. U.S. Swimming Rules and Regulations.
  - 2. National federation of State High School Association (NFSHSA)
  - 3. The Pennsylvania Code
  - 4. ISPSC - 2015

#### 1.3 SUBMITTALS

- A. Product Data
  - 1. Contractor shall submit:
    - a. Manufacturer's data and installation instructions for all equipment
    - b. Catalog cuts.

## 1.4 PRODUCT HANDLING

- A. Protect equipment from construction operation and weather; do not leave in areas subject to vandalism.

## PART 2 - PRODUCTS

### 2.1 GENERAL

- A. Contractor shall take such measurements, as needed, and provide such fittings, as called for, to assure a proper fit and conformity with applicable codes, rules and regulations.
- B. Note that the height above water shall be taken when pool water is at quiescent water level.
- C. When not listed on Drawings, quantities of equipment are shown herein.

### 2.2 WINTER COVER

- A. As manufactured by Meyco Pool Covers, [www.meycocovers.com](http://www.meycocovers.com), (800) 446-3926, or approved equal.

### 2.3 HANDRAILS

- A. Removable pool stair handrails, fabricated to drawings, shall be continuous 1.900" O.D. x 0.109" wall thickness, type 304 stainless steel tubing.
- B. Bends in handrail shall be wrinkle-free, continuously welded cross bracing only.
- C. Handrails shall be provided and installed with the required number of bronze anchor sockets and corresponding escutcheon plates. Bond each anchor.
- D. Handrails as manufactured by:
  - 1. SR Smith 1017 SW Berg Parkway, Canby, Oregon 97013 (800-824-4387), or approved equal.
  - 2. Spectrum Pool Products 7100 Spectrum Lane, Missoula, Montana 59808. (800-791-8056), or approved equal.
  - 3. Paragon Aquatics, 1351 Route 55, West Wing, LaGrangeville, NY 12540-5105. Tel: 845-452-5500, Fax: 845-452-5426, or approved equal.

### 2.4 LADDERS

- A. Removable heavy duty ladders shall be fabricated from a continuous length at 1.90: O.D. x 0.109" wall thickness, type 304 stainless steel tubing.
- B. Steps shall be Cycloc plastic with slip-resistant tread, stainless steel hardware, white rubber bumpers at each (wet) rail ends, anchor sockets and corresponding escutcheon plates at each (deck) rail ends. Bond each anchor.
- C. Ladders shall have number of steps as shown on drawings; when not shown, number shall correspond to depth of water (in feet).
- D. Note that installed dimension from wall to rail shall not exceed six inches (6").and shall be in conformance with the Code

- E. Ladders shall be provided and installed, with the required number of bronze anchor sockets and corresponding escutcheon plates. Bond each anchor.
- F. Ladders as manufactured by:
  - 1. SR Smith 1017 SW Berg Parkway, Canby, Oregon 97013 (800-824-4387), or approved equal.
  - 2. Spectrum Pool Products 7100 Spectrum Lane, Missoula, Montana 59808. (800) 791-8056, or approved equal.
  - 3. Paragon Aquatics, 1351 Route 55, West Wing, LaGrangeville, NY 12540-5105. Tel: 845-452-5500, Fax: 845-452-5426, or approved equal.

## 2.5 LIFEGUARD CHAIRS

- A. The lifeguard chairs shall have white injection molded plastic seat and shall be mounted on a stainless steel pedestal that permits a swivel of 360 degrees
- B. Platform supporting seat shall be of laminated Douglas Fir and coated with fiberglass and polyester resin. A slip resistant grit finish shall be embedded on the top surface of platform.
- C. Supporting column for platform shall be four-inch (4") schedule 40, stainless steel tube type 304 tube with stainless steel type 304 base.
- D. Rails shall be 1.900" O.D. x 0.109" wall thickness type 304 stainless steel tubing and be 30" above the platform and extend to the front of the platform. Rails shall be grit blasted to a slip resistant finish. Treads shall be injection molded Cyclocac.
- E. Provide number of lifeguard chairs as shown on plans.
- F. Accessories:
  - 1. Provide life ring for each chair, with twenty-five foot long (25') one-quarter inch thick (1/4") yellow floating polypropylene line, and in accordance with Code requirements.
  - 2. Provide necessary anchors for stand and life ring holder and umbrella socket.
- G. Lifeguard chairs as manufactured by:
  - 1. SR Smith 1017 SW Berg Parkway, Canby, Oregon 97013 (800-824-4387), or approved equal.
  - 2. Spectrum Pool Products 7100 Spectrum Lane, Missoula, Montana 59808. (800) 791-8056, or approved equal.
  - 3. Paragon Aquatics, 1351 Route 55, West Wing, LaGrangeville, NY 12540-5105. Tel: 845-452-5500, Fax: 845-452-5426, or approved equal.

## 2.6 SAFETY ROPE

- A. Safety rope shall be three-quarter inch (3/4"), polyethylene rope, with integrally cast bronze chrome-plated snap swivel hook at each end. Internal surface of clamping area shall be contoured to shape of rope. Hook opening shall be three-quarter inch (3/4") diameter.
- B. Safety rope shall consist of three (3) strand, right-hand, regular lay, monofilament, white polyethylene rope, three-quarter inch (3/4") diameter with breaking point of not less than 5,000 pounds. Line shall float and be non-conducting.
- C. Floats shall consist of soft, polyethylene molded parts, fusion-welded together and shall be five inch (5") diameter by nine inches (9") long, with a 13/16" I.D. rope way tube through center length. Floats shall be of alternating colors, blue and white, and shall be spaced on thirty six-inch (36") centers. Provide two (2) nylon float positions for each float.

D. As manufactured by:

1. Lincoln Aquatics, 2051 Commerce Ave. • Concord, CA 94520 USA  
Ph. (800) 223-5450
2. Standard Bronze, 179 West 5<sup>th</sup> Street, P.O. Box 62, Bayonne, NJ 07002. Tel: 201-339-1351, or approved equal.
3. Spectrum Pool Products 7100 Spectrum Lane, Missoula, Montana 59808. (800) 791-8056, or approved equal.

## 2.7 MISCELLANEOUS

- A. All safety equipment to be as noted on the Drawings.
- B. All maintenance equipment to be as noted on the Drawings.

## 2.8 HARDWARE

- A. All hardware used in this section for assembly or installation to be of stainless steel type 316L unless otherwise noted.

## PART 3 - EXECUTION

### 3.1 DECK ANCHORS

- A. Provide anchors and anchor plugs for all deck equipment. All anchors shall be accurately positioned and rigidly held during the deck pouring operation. All anchors shall be 316L stainless steel.
- B. Check that all grounding has been accomplished and Underwriters' Laboratories inspection completed prior to the pouring of concrete.
- C. After pouring, recheck all anchor positions. Misaligned anchors, or anchors out of plumb, or set too low, shall be rejected and replaced, at no additional cost to Owner.
- D. Eschuchoons. Provide stamped stainless steel cover plates over all anchors.
- E. Anchors, flanges and supports shall be slightly above deck level to provide a wash-away five percent (5%) wash from anchor. Depressions that collect water will be cause for rejection and removing and resetting anchor.

### 3.2 INSTALLATION

- A. Install equipment, per manufacturer's instructions. Check operation of all equipment and make such adjustments, as needed, to put into proper working order. Clean equipment and repair any surface damages or blemishes.

### 3.3 HANDRAILS

- A. Handrails of all equipment (e.g., lifeguard chairs, steps, ladders) shall be cleaned with a passivating agent.

### 3.4 GROUNDING AND BONDING

- A. Do not cover over or cement in place, any metal anchor, fittings or hardware, within five feet (5') of pool shell, until the item has been electrically bonded, inspected and approved by the cognizant electrical inspectors.

### 3.5 ACCEPTANCE

- A. Install all equipment of this section for inspection and testing. Make such adjustments, as necessary, to bring all equipment within tolerance as Specified herein.
- B. After inspection and acceptance by Engineer, remove and store all equipment except such items as Owner may specifically request to remain.

END OF SECTION 131520

## SECTION 131600 – POOL RECIRCULATION SYSTEM

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Work of the recirculation system includes, but is not limited to, the following
  - 1. Pool perimeter piping
  - 2. Filter room piping
  - 3. Pipe supports
  - 4. Instrumentation and controls
  - 5. Hydraulic display panel
  - 6. Flow meters
  - 7. Pool level controller
  - 8. Pool shell fittings
  - 9. Air vents, vacuum breakers and accessory items
  - 10. Main drain frames and grates
  - 11. Connections to all equipment
  - 12. Connections to water supply system
  - 13. Painting and identification of pool pipe lines and equipment
  - 14. Shop drawings and catalog cuts
  - 15. Record Drawings
  - 16. Instruction for Owner's personnel
  - 17. All necessary Health Department, Building Department, Plumbing Department, and Underwriter's approvals, inspections and certifications, including payment.

#### 1.2 RELATED WORK

- A. Section 03320 – Shell Construction
- B. Section 13163 – Filter System

#### 1.3 REFERENCES

- A. The Pennsylvania Code
- B. ISPSC - 2015

#### 1.4 QUALITY ASSURANCE

- A. Use adequate number of skilled workers who are thoroughly trained and experienced in the necessary crafts and are completely familiar with the Specified requirements and methods needed for proper performance of the Work of this Section.
- B. Codes and Regulations
  - 1. In addition to complying with Specified requirements, comply with pertinent regulations of governmental agencies having jurisdiction.
  - 2. In the event of conflict between or among Specified requirements and pertinent regulations, the more stringent requirement will govern, when so directed by Engineer.

### C. Tests

1. Provide strength and tightness tests on all piping and equipment Specified herein.
2. Operational testing shall be accomplished as Specified above.
3. Labels.
  - a. Check all identification marks and labels, verify conformity with these Specifications.
4. Inspection of equipment and materials shall be made immediately upon arrival on site; damaged or defective items shall be removed; Owner's representative shall be notified immediately of such defects.
5. Do not cover, encase or conceal any material or equipment until inspected; inspections requiring Engineer shall include:
  - a. Installation of main drains, pipe sleeves and pool shell equipment
  - b. Pipe pressure tests
  - c. Pump alignment checks
  - d. System test
6. Notice
  - a. Engineer shall be given seventy-two (72) hours notice of any impending tests (excluding Saturday, Sunday or holiday).
7. Pool water recirculation piping test
  - a. All pressure pipes in the system shall be hydrostatically tested for leakage and strength at fifty (50) psi or one point five (1.5) times the maximum working pressure, whichever is greater. Gravity lines, such as main drains, and pump suctions shall be tested at eighteen (18) psi hydrostatic. All air shall be removed before test is applied. Tests shall be held for one (1) hour; all pipes, fittings and accessories shall be inspected and free of any leakage.
  - b. All broken, defective or cracked pipe, joints or fittings shown to leak during this test shall be removed and replaced. Replace gaskets and packing where leaking.
  - c. Contractor shall furnish all equipment required for testing including two (2) six inch (6") diameter pressure gauges shall be calibrated and certified by a testing lab acceptable to Engineer.

### 1.5 SUBMITTALS

#### A. Product Data

1. Contractor shall submit:
  - a. Materials list of items proposed to be provided under this Section.
  - b. Manufacturer's specifications, catalog cuts and other data needed to verify compliance with the Specified requirements.

#### B. Shop drawings to be provided shall include, but not be limited to, the following:

1. Filter room equipment and piping layout one-half inch to one foot ( $\frac{1}{2}$ " = 1'0") or larger scale; layout shall show all valves and numbers assigned
2. General pool piping layout including invert elevations
3. Piping hangers and supports
4. Sleeve drawings, equipment base, foundation drawings

- C. Do not work until shop drawings, catalog cuts and samples have been approved by Engineer.

## 1.6 PRODUCT HANDLING

### A. Protection

1. Deliver materials to job site and store in designated areas. Protect from mechanical damage. Do not place in traffic areas where pipe may be crushed.
2. Protect ends of pipe to prevent entrance of foreign material and wildlife.

## 1.7 VERBAL INSTRUCTIONS

- A. During testing periods, Contractor shall supply services of one (1) or more technically qualified person to formally instruct Owner's operating personnel in the care, use and maintenance of pool recirculating system. Contractor shall contact Owner for personnel to be trained and shall plan and schedule times and sites convenient for Owner's personnel; training shall be done from written instruction manual (3 copies to be handed over to Owner) and shall include the following, as a minimum:

1. Backwash of filter
2. Startup of dead system
3. Shutdown of system
4. Winterization
5. Start-up
6. Care of pool
7. Balancing of water chemistry
8. Trouble-shooting problems
9. Establishing normal operating conditions
10. Maintenance and servicing of equipment
  - a. pumps
  - b. filters
  - c. valves
  - d. chemical feeders
  - e. instrumentation
11. Care of the pool, and tiled surfaces
12. Care of deck equipment
13. Anticipating problems
14. Safety considerations

- B. Minimum of forty (40) hours of instruction shall be given; twenty (20) hours shall be in formal initial instruction, the remainder shall be spent, at the request of Owner, to instruct Owner's personnel during the first month after substantial completion and during pool operation.

## 1.8 SAMPLES

- A. Provide samples of the following materials and equipment; all samples shall be clearly identified with material identification, manufacturer and Specification Section
  1. One foot (1') length of polyvinyl chloride (PVC) pipe, three inch (3") diameter, manufacturer's markings and ninety degree (90°) ell solvent welded to it.
  2. One foot (1') length of chemical suction hose and one foot (1') length of discharge hose with manufacturers markings.
  3. One (1) plastic ball valve, one inch (1") size, complete with union ends.

## 1.9 SPARES

- A. Provide the following spare parts to be used in the system. These shall be identified with the equipment installed.
  - 1. Two (2) 6" bezel pressure gauges
  - 2. Two (2) 6" bezel compound gauges
  - 3. One (1) extra stainless steel basket for each pump strainer
- B. Items shall be in original cartons and turned over to Owner at the end of the project. Obtain signature of Owner's Representative when turning over items.

## 1.10 CERTIFICATES

- A. Contractor shall provide manpower for such setup and adjustments to operating conditions needed to meet requirements for an operating permit in compliance with the "Manual" and to present recirculating system for inspection.
- B. Materials
  - 1. Contractor shall provide certificates attesting to the following:
    - a. Pipe and piping materials
    - b. Fiberglass resin used for the sodium hypochlorite tank.

## PART 2 - PRODUCTS

### 2.1 PIPING

- A. Piping to be poly (vinyl chloride) PVC schedule 80 (unless otherwise noted) type 1, grade 1, PCVC 1120 as per ASTM D-1784 and ASTM D-1785. Fittings to be socket type PVC schedule 80- as per ASTM D-2467. All joints to be solvent welded. All materials shall be supplied by one manufacturer.
- B. Hardware
  - 1. All mounting and connecting hardware to be stainless steel type 316L. Plain steel, galvanized or Cad plated hardware is not acceptable

### 2.2 PIPE SUPPORTS

- A. Fabricate hangers as shown on the drawings and as otherwise required to support the piping.
- B. Fabricate all supports from 3"x3"x1/4" steel angles and shapes. Supports shall be welded completely. Threaded rod supports are not acceptable.
- C. All pipes shall be properly supported from above and below and also supported against lateral thrust at pipe ends.
- D. Pipe hanger supports and straps for PVC pipe shall be lined with 3/8" thick elastomeric material.
- E. Plastic pipe 2" and smaller shall be supported every five feet or less, pipe 2 1/2" and larger, every seven feet.

- F. Hangers for pipe 6" and larger shall be installed from an auxiliary steel structure supported from the floor.
- G. All hangers, supports and straps shall be hot dip galvanized two ounce per square foot surface. Hangers, supports and straps shall be hot dipped galvanized steel (after fabrication).

## 2.3 VALVES

### A. Butterfly Valves

1. Butterfly valves shall have PVC body, PVC disc, stainless steel 316 stem, and EPDM seat.
2. Valves six inches (6") and smaller shall be lever operated, eight inches and larger shall be gear operated.
3. When valve is submerged below the waterline, provide stainless steel extender, brackets and supports to raise handle or gear operator (where provided) above water level
4. Valves shall be manufactured by Asahi (Pool Pro Series) 35 Green St., Malden, MA 02148 (800-343-3618), or approved equal.

### B. Check Valves

1. Check valves for recirculation water shall be wafer type, with thermoplastic body, Buna N seat, type 316 stainless steel spring
2. Valves shall be Series 5005, as manufactured by Techno Corp., 2709 West 10th Street, P.O. Box 1416, Erie, PA 16512, (Tel: 814/838-4561), or approved equal.

### C. Ball Valves

1. Thermoplastic, virgin PVC, Type 1, Grade 1, O-Rings, with union ends NSF listed, as manufactured by Spears Manufacturing, 15853 Olden Street, P.O. Box 4428, Sylmar, CA 91342-4428, (Tel: 818/364-1611), or approved equal.

### D. Makeup Water Valves

1. Valves shall be normally closed solenoid type, two (2) way, packless, forged brass body with Buna N valve seat; all internal parts in contact with water shall be stainless steel; valve shall have Class A continuous duty coil, NEMA 4X watertight/dusttight enclosure.
2. Valve to be slow closing type., same size as pipe line. Quick closing solenoid valves are not acceptable
3. As manufactured by: Automatic Switch Co.(ASCO), Hanover Rd., Florham Park, NJ 07932 (Tel: 201/966-2000), or approved equal.

E. Hardware

1. All mounting and connecting hardware for all valves to be stainless steel type 304.

2.4 AUTOMATIC AIR VENT

- A. Automatic air vents are to be provided at all trapped high points of piping; indicate and schedule vents on pump room shop drawings.
- B. Vents to be three-quarter inch ( $\frac{3}{4}$ " ) cast bronze construction, No. 50, as manufactured by Hoffman Specialties Co., 1700 West 10th St., Indianapolis, IN 46222, (Tel: 317/632-7538), or approved equal.

2.5 VACUUM BREAKER

- A. Provide vacuum breakers, at all pipe line and equipment high points and where required to permit line and tank drainage, and/or prevent back siphonage on fresh water lines. Vacuum breakers shall be Catalog No. 31, as manufactured by Cla-Val Co., Inc. P.O. Box 1325, Newport Beach, CA 92663-1325, (Tel: 714/548-2201), or approved equal.

2.6 PRESSURE AND VACUUM GAUGES

- A. Provide compound and pressure gauges with scales indicated and where shown on Drawings and as described herein
  1. Gauges on suction sides of pumps shall be compound type with dials reading from thirty inches (30") hg to zero (0) psi to thirty (30) psi. pressure. Gauges on discharge sides of pumps shall be straight pressure and shall read from zero (0) psi to sixty (60) psi.
  2. Phenol case, six inch (6") bezel, 316 stainless steel, over pressurized and stress-relieved bourdon tube, stainless steel type 316 socket and tip, welded to US Navy standard white dial, rear micrometer adjustment one-quarter inch ( $\frac{1}{4}$ " ) male NPT bottom or back connection, accuracy to plus or minus one-half of one percent ( $\pm\frac{1}{2}$  of 1%) scale range. Bold black graduations, numerals and pointer.
  3. Each gauge shall be supplied with a 1/4" Stainless steel 304 "pig tail" or shock loop and shall have a 1/4" steel shut off cock.
  4. Gauges shall be as manufactured by:
    - a. Type 400, Helicoid Instruments, 1100 Buckingham Street, Watertown, CT 06795, (Tel: 203/575-3026), or approved equal.
    - b. Weksler Instrument Co., 8 Mill Road, P.O. Box 808, Freeport, NY 11520-0808, (Tel: 516/623-0100), or approved equal.
    - c. U.S. Gauge Co, or approved equal.

2.7 FLOW METERS

- A. Filtered water return; self-powered analog type with five and one-half inch ( $5\frac{1}{2}$ " ) dial, 250 degree full scale meter movement.
  1. Meter shall be mounted in corrosion-resistant enclosure.
  2. Provide manufacturer's mounting kit.
  3. Meter scale shall be as shown on Drawings.
  4. Meter sensor shall be paddle-wheel type.
  5. Meter sensor and installation fittings shall be, as manufactured by Signet Scientific Corporation, 3401 Aerojet Ave., P.O. Box 5770, El Monte, CA 91734-5770, (Tel: 818/571-2770), or approved equal.

- B. Backwash Water; Acrylic body with SS 316 float, pilot type. Meter shall be calibrated for pipe line diameter where installed. Manufacture: Blue White Industries, 14931 Chestnut Street, Westminster, CA 92683. (Tel: 714/ 893-8529), or approved equal.

## 2.8 POOL SHELL RETURN INLETS

- A. Adjustable flow floor inlet type inlet fitting shall be provided, consisting of an ABS body, retainer ring, five-eighths inch (5/8") orifice and shall be for installation in concrete floor pools.
- B. Body shall have a one and one-half inch (1 ½") FPT connection and be provided with a one and one-half inch (1 ½") pipe plug to facilitate line pressure testing, as manufactured by Pentair 1620 Hawkins Ave., Sanford, NC 27330 (800-831-7133).

## 2.9 SURFACE SKIMMERS

- A. Skimmer shall be commercial type, cycloc housing with heavy duty phenolic base.
- B. The skimmer shall be equipped with (2) stainless steel strainer baskets, flat valve, check valve, cushioned weir, deck plate (non-corrosive, slip-resistant, tamper proof bolts), trimmer valve and 2" equalizer fitting.
- C. Skimmer shall be manufactured by Pentair, 1620 Hawkins Ave., Stanford, NC 27330 (800) 831-733, NSF listed with 2" ports, with equalizer, wall fitting, and VGBA Grate .

## 2.10 HIGH VACUUM CUTOFF

- A. Mercury type vacuum switch, as manufactured by Mercoide Corp., a division of Dwyer Instruments Inc., Michigan City, IN, with brass bourdon tube, zero to thirty inches (0-30") Hg and watertight enclosure, NEMA-4X enclosure.

## 2.11 HYDROSTATIC RELIEF VALVES

- A. Cast bronze, spring loaded, neoprene seal, Cat No. 4353, 2" MPT with bronze spanner wrench Cat No 6737 all as manufactured by Standard Bronze Co., 179 West 5th Street, Bayonne, NJ 07002-0062, Tel. (201) 339-1351.

## 2.12 MAIN DRAIN FRAME AND GRATES

- A. Grate shall be of reinforced Cycloc construction, reinforcing cross ribs, SS type 304 fasteners for securing to frame. Slotted openings in grate not to exceed five sixteenths of an inch (5/16") in one dimension.
- B. Velocity through grating shall not exceed 1.5 feet per second
- C. Grates shall be anti-entrapment type, NSF listed, VGBA approved and stamped (10 year) as manufactured by Neptune Benson – Lawson (12" x 12") 6 Jefferson Drive, Coventry RI 02816 (800-832-8002).

# PART 3 - EXECUTION

## 3.1 PRELIMINARY

- A. Contractor shall provide and install a complete operating and totally functioning and approved pool recirculating system.
- B. Contractor shall Work in harmony with the Municipality and other trades on the Project, coordinating the Work and providing labor and materials to permit an orderly progress of Work.
- C. Installation of fittings and connections to the new pools shall be coordinated with the progress of Work. Fittings shall be checked and sharp edges removed. Shell penetrations and fittings shall be carefully located and rigidly supported to resist movement.
- D. Metal fittings or fittings having metal components shall be bonded per NEC. Obtain Underwriters approval before pouring.
- E. All fastenings throughout recirculation system and filter system shall be SS 304 type. CAD plated or galvanized fastenings will not be accepted.

### 3.2 PIPING

#### A. Plastic Pipe

- 1. Pipe shall be cut at right angles to its axis, burrs remaining shall be removed inside and out; inside must be reamed to full pipe diameter and outside shall be chamfered to match socket requirements (1/16" to 3/32" deep with 10-15 degree angles)
- 2. On threaded pipe, joints shall be made-up after placing a Teflon tape on pipe threads
- 3. Pipe shall be joined, in accordance with manufacturer's requirements; joint shall not be disturbed until initial set has occurred; this time shall be specified by manufacturer, but in no case shall be less than the following

<u>TEMPERATURE</u>	<u>SET TIME</u>
60°F. - 100°F.	½ hour
40°F. - 60°F.	1 hour
20°F. - 40°F.	2 hours
0°F. - 20°F.	4 hours.

- 4. Do not cement above 110°F.; sloppy joints or excessive use of solvents or runs out of square shall be cause for rejection; at close of Work each day, Contractor shall seal ends of all installed piping and equipment to prevent the entry of foreign matter or wildlife

5. Pressure tests for plastic pipes shall not be applied before the time recommended by manufacturer, but in no time less than given, as follows

TEMPERATURE RANGE	PIPE ½"- 1¼"	PIPE 1½"- 3"	PIPE 3½"- 8"
60°F. - 100°F.	1 hour	2 hours	6 hours
40°F. - 60°F.	2 hours	4 hours	12 hours
10°F. - 40°F.	8 hours	16 hours	48 hours.

6. PVC expansion joints shall be installed wherever a single pipe is of significant length to prevent the possibility of buckling or parting due to expansion
7. All valves on plastic pipe lines must be braced to resist momentum occurring when valve is opened or closed
8. Connections between PVC and metallic pipes shall be flange type with metallic companion flange similar to pipe material
9. Air vents shall be installed at high points in filter area and pipe gallery piping and drains, with three-quarter (¾") gate valves at the low points, such that all piping can be drained
10. Unions or flanges shall be used at equipment to permit easy disconnection of pipe. Provide isolation valves on each side of the equipment such as to permit removal of the equipment without shutting down system.
11. Piping shall be run parallel to walls and ceiling at elevations as shown on Drawings; installation shall be made in a neat workmanlike manner with all connections made, as specified by material manufacturer
12. Pipe supports
  - a. All pipes shall be properly supported from above or below and also supported against lateral thrust at pipe ends
  - b. Pipe hangers supports and straps for PVC pipe shall be lined with an elastomeric material to protect pipe from damage
  - c. Plastic pipe two (2") inches and smaller shall be supported every five feet (5') or less; pipe two and one-half inches (2½") and larger, every six feet (6') or less
  - d. Hangers for pipes six inches (6") and larger shall be installed from an auxiliary steel structure supported from floor; all hangers, supports and straps shall be hot-dip galvanized two (2) ounces per square foot of surface
  - e. Indicate and detail all hangers, supports and straps used for filter room; pipes in filter room shall be supported on galvanized steel.
  - f. Provide all pipe hangers and supports necessary to properly support the pipe and protect against thrust, impurities and physical misuse.
13. All pipes shall be thoroughly flushed and cleaned before pumps are started. This shall take at least one-half (½) hour.

### 3.3 GAUGES

- A. Locate gauges in suction and discharge lines of pump such that all centerlines are at same elevation. Face gauges to be readable on approach to equipment.
- B. Mount gauges on ¼" (min.) Stainless steel pig tails complete with snubber and stainless steel shutoff cocks.

### 3.4 FLOW METER

- A. Flow meter transmitter shall be mounted in pipe line with a minimum of 10 pipe diameters clearance upstream and 5 pipe diameters downstream from any fittings, equipment or interferences.
- B. Readout head shall be mounted remotely on wall. Provide mounting kit. Support interconnecting cabling.

### 3.5 CONTROLS AND INSTRUMENTATION

- A. Provide all hydraulic controls associated with recirculation system, including, but not limited to the following
  - 1. Provide one (1) compound gauge in the suction of each pump and one (1) pressure gauge on discharge side of each pump, each gauge with a pig tail tee-head cock for isolation.
  - 2. Rate of flow indicator shall be provided and installed on lines returning filtered water to pool. Indicator shall be complete with all accessories required for operation, all as supplied by manufacturer. Install meters with upstream and downstream clear distances, as recommended by manufacturer for this installation. Submit recommendations to Engineer for review.
  - 3. Gauges and meters shall be flush mounted for panel installation.

### 3.6 PIPE SUPPORTS

- A. Obtain in place elevations and dimensions of all installed work. Use in determining size and elevations of supports. Pipes shall be supported to eliminate sags and low points.
- B. Do not hang or support one pipe from another.
- C. Install pipe supports at elevations established for continuous slope in one direction.
- D. Affix support to building walls and floors. Piping MAY NOT be supported from overhead. Use stainless steel shims or non shrink grout to provide surface contact at all supports.
- E. Install pipe anchors, restraints and sway braces, at locations noted on drawings. Design anchors so as to permit piping to extend and contract freely in opposite directions, away from anchor points. Install anchors independent of all hangers and supports, and in a manner which will not affect structural integrity of the building. Do provide support to resist end thrust and lateral displacement. Provide such additional supports as Engineer may deem necessary to prevent excessive movement.

### 3.7 PAINT

- A. All equipment and piping in pump room shall be painted required by code, and as indicated in on drawings.

END OF SECTION 131600

## SECTION 164500 – POOL BONDING

### PART 1 - GENERAL

#### 1.1 WORK INCLUDED

- A. Recertify Bonding of all metallic equipment within pool and elsewhere, as required by National Electrical Code (NEC.). Work shall include, but not necessarily be limited to, grounding and bonding the following:
1. Pools including gutters, structural steel and rebar.
  2. Pool shell equipment (grating, lighting, etc).
  3. Decks surrounding pool.
  4. Deck equipment
  5. Recirculation equipment and piping
  6. Junction, outlet and fixture boxes, including lighting.

#### 1.2 QUALITY ASSURANCE

- A. Use adequate number of skilled workers who are thoroughly trained and experienced in the necessary crafts and are completely familiar with the Specified requirements and methods needed for proper performance of the Work of this Section.
- B. Without additional cost to Owner, provide such other labor and materials, as are required, to complete Work of this Section, in accordance with requirements of government agencies having jurisdiction, regardless of whether such material and associated labor are called for elsewhere in these Specifications.
- C. Obtain all necessary electrical inspections required by Codes and utility company; obtain approvals of Underwriters' Laboratories (UL) inspections and certification at the end of Project; pay all costs associated herewith.
- D. Codes
1. Grounding for electrical system shall be in accordance with NEC Articles 210, 250 and 680, and local Code requirements, except for more stringent requirements, as noted below.
- E. Test
1. Grounding system, including all pools and related ground points, shall be subjected to a megger test at each service disconnect enclosure ground bar to ensure that ground resistance, without chemical treatment or other artificial means, does not exceed one (1) ohm.
  2. Certified test reports of ground resistance shall be submitted to Engineer for comments; necessary modifications for compliance with the one (1) ohms value shall be made, without additional expense to Owner
  3. Tests for the pool shall be performed two (2) times by an independent testing company as approved by the Owner and Engineer, using recognized NEC Standards, one (1) prior to enclosure and one (1) after pool construction has been completed. At each stage, testing company shall submit recommendations to eliminate all noncode compliance conditions, these changes shall be included in the Project at no additional cost to Owner
  4. All fees for tests shall be paid for by Contractor.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

#### A. Exothermic Welding Process

1. This process is a method of welding copper-to-copper, or copper-to-steel, with equipment and materials that require no outside source of heat
2. Provide all required molds, tools and cartridges; use in strict accordance with manufacturer's instructions
3. System shall be "Thermoweld" as manufactured by Burndy Corporation, 5 Richards Avenue, Norwalk, CT 06856, (Tel: 203/838-4444.)

#### B. Ground Connectors

1. Conduit ground connector
  - a. Connector shall be split coupling, bolted pressure type, for connecting cable-to-conduit and be complete with cast, high copper alloy, tinplated with durium or everdur oval shank bolts, nuts and lock-washers and U-bolts for cable fastening
  - b. Connector shall be Type GAR, as manufactured by Burndy Corporation, Norwalk, CT; or as acceptable.
2. Ground connector for grounding steel surfaces
  - a. Connector for connecting cable-to-steel surface shall be bolted pressure type, with durium or everdur oval shank bolts in steel tongue offset, nuts, lockwashers and bronze clamps for cable fastening
  - b. Connector shall be Type MGL for No. 1/0 AWG and larger, and Type QGL for smaller than No. 1/0 AWG, as manufactured by O-Z/Gedney Company, 37 Main Street, Terryville, CT 06786, (Tel: 203/584-0571;) or as acceptable.

#### C. Bond wire

1. Bond loop shall be #8 AWG solid copper wire with green coating.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

#### A. General

1. Provide complete systems and equipment bonding, as shown on Drawings or described herein
2. Bond conductors shall be insulated and colored green or colored green with yellow stripe(s)
3. Connect system components mechanically and electrically to provide an independent return path to grounding electrode
4. Electro-silver plate to a minimum of 0.0002" thick all copper contact surfaces joined together by bolting; electro-tin plate to a minimum of 0.0001" thick all aluminum surfaces joined together by bonding
5. Use multiple bolt-type connectors for bolted connections, with bolts, washers, and stop nuts made of high copper alloy, everdur, durium, duronze or silicon bronze

6. Use exothermic welding process or acceptable compression type connector for inaccessible connections
7. Clean metals thoroughly where ground terminal connectors are brazed to equipment and repaint impaired surfaces
8. Complete connection between dissimilar metals of copper conductor and stainless steel ground rod shall be made using exothermic welding process, insulated as follows:
  - a. Tape complete weld including one and one-half inch (1½") of cable insulation, with two (2) layers half-lapped of a highly conformable, self-fusing tape, No. 23, with a final covering of two (2) layers half-lapped of PVC electrical tape, No. 88, covering first tape completely, as manufactured by 3M Co., Inc., 15 Henderson Drive, P.O. Box 2076, West Caldwell, NJ 07007-2076, (Tel: 201/575-2000;) or as acceptable

**B. Pool Bonding**

1. Bond all metal parts in each pool together by connecting them to a common bonding loop consisting of a solid #8 insulated copper conductor. #8 solid insulated copper tails may be used to connect individual equipments, as shown on Drawings and described as follows:
  - a. All metallic parts of pool structure, including reinforcing metal of pool shell, gutter, steps, deck, ladders, handrails, life guard stands, diving boards, timing equipment, anchors, etc.
  - b. All metal fittings within and/or attached to pool structure
  - c. Metal parts of electric equipment associated with the pool water circulating system, including pump motors, valves, meters, controllers, etc.
  - d. Metal conduit and metal piping within five feet (5') of inside walls of pool.
  - e. All fixed metal parts that are within five feet (5') of inside walls of pool.
2. All bonding shall be in accordance with NEC Article 680.

**C. Provide a complete Bonding certificate to the Owner upon completion of Work.**

END OF SECTION 164500

## SECTION 311000 - SITE CLEARING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Clearing and grubbing.
  - 2. Stripping and stockpiling topsoil.
  - 3. Disconnecting, capping or sealing, and removing site utilities.

#### 1.3 DEFINITIONS

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

#### 1.4 MATERIAL OWNERSHIP

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

#### 1.5 INFORMATIONAL 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 video recordings.
  - 2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plant designated to remain.

- B. Record Drawings: Identifying and accurately showing locations of capped utilities and other subsurface structural, electrical, and mechanical conditions.

## 1.6 FIELD CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
  - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
  - 2. Provide alternate routes around closed or obstructed trafficways if required by Owner or authorities having jurisdiction.
- B. Utility Locator Service: Notify One Call for area where Project is located before site clearing.
- C. Do not commence site clearing operations until temporary erosion- and sedimentation-control and plant-protection measures are in place.
- D. Soil Stripping, Handling, and Stockpiling: Perform only when the soil is dry or slightly moist.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Satisfactory Soil Material: Requirements for satisfactory soil material are specified in Section 312000 "Earth Moving."
  - 1. Obtain approved borrow soil material off-site when satisfactory soil material is not available on-site.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.
- B. Protect existing site improvements to remain from damage during construction.
  - 1. Restore damaged improvements to their original condition, as acceptable to Owner.

### 3.2 EXISTING UTILITIES

- A. Locate, identify, disconnect, and seal or cap utilities indicated to be removed.
  - 1. Owner will arrange to shut off indicated utilities when requested by Contractor.

- B. Excavate for and remove underground utilities indicated to be removed.
- C. Removal of underground utilities is included in earthwork sections; in applicable earth moving section; and in Section 024119 "Selective Demolition."

### 3.3 SITE IMPROVEMENTS

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

### 3.4 DISPOSAL OF SURPLUS AND WASTE MATERIALS

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

END OF SECTION 311000

## SECTION 312000 - EARTH MOVING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:

1. Preparing subgrades for walks and turf and grasses.
2. Subbase course for concrete walks and pavements.
3. Excavating and backfilling trenches for utilities.

- B. Related Requirements:

1. Section 033000 "Cast-in-Place Concrete" for granular course if placed over vapor retarder and beneath the slab-on-grade.
2. Section 311000 "Site Clearing" for site stripping, grubbing, stripping and stockpiling topsoil, and removal of above- and below-grade improvements and utilities.

#### 1.3 UNIT PRICES

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

#### 1.4 DEFINITIONS

- A. Backfill: Soil material or controlled low-strength material used to fill an excavation.
  1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
  2. Final Backfill: Backfill placed over initial backfill to fill a trench.
- B. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.
- C. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.
- D. Drainage Course: Aggregate layer supporting the slab-on-grade that also minimizes upward capillary flow of pore water.

- E. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.
- F. Fill: Soil materials used to raise existing grades.
- G. 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.
- H. Subbase Course: Aggregate layer placed between the subgrade and base course for hot-mix asphalt pavement, or aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.
- I. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.
- J. Utilities: On-site underground pipes, conduits, ducts, and cables as well as underground services within buildings.

#### 1.5 ACTION SUBMITTALS

- A. Product Data: For each type of the following manufactured products required:
  - 1. Warning tapes.
- B. Samples for Verification: For the following products, in sizes indicated below:
  - 1. Warning Tape: 12 inches (300 mm) long; of each color.

#### 1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified testing agency.
- B. Material Test Reports: For each 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 698.
- C. Preexcavation 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.

#### 1.7 QUALITY ASSURANCE

- A. Geotechnical Testing Agency Qualifications: Qualified according to ASTM E 329 and ASTM D 3740 for testing indicated.

## 1.8 FIELD CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth-moving operations.
  - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
  - 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- B. Utility Locator Service: Notify "One Call" for area where Project is located before beginning earth-moving operations.
- C. Do not commence earth-moving operations until temporary site fencing and erosion- and sedimentation-control measures specified in Section 312500 "Erosion and Sediment Controls" are in place.
- D. The following practices are prohibited within protection zones:
  - 1. Storage of construction materials, debris, or excavated material.
  - 2. Parking vehicles or equipment.
  - 3. Foot traffic.
  - 4. Erection of sheds or structures.
  - 5. Impoundment of water.
  - 6. Excavation or other digging unless otherwise indicated.
  - 7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
- E. Do not direct vehicle or equipment exhaust towards protection zones.
- F. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

## PART 2 - PRODUCTS

### 2.1 SOIL MATERIALS

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
- B. 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 3 inches (75 mm) 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/D 2940M; with at least 90 percent passing a 1-1/2-inch (37.5-mm) sieve and not more than 12 percent passing a No. 200 (0.075-mm) sieve.
- E. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940/D 2940M; with at least 90 percent passing a 1-1/2-inch (37.5-mm) sieve and not more than 12 percent passing a No. 200 (0.075-mm) sieve.
- F. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940/D 2940M; except with 100 percent passing a 1-inch (25-mm) sieve and not more than 8 percent passing a No. 200 (0.075-mm) sieve.
- G. Drainage Course: Narrowly graded mixture of [washed ]crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch (37.5-mm) sieve and zero to 5 percent passing a No. 8 (2.36-mm) sieve.
- H. 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 (25-mm) sieve and zero to 5 percent passing a No. 4 (4.75-mm) sieve.
- I. Sand: ASTM C 33/C 33M; fine aggregate.
- J. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

## PART 3 - EXECUTION

### 3.1 PREPARATION

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

### 3.2 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.

### 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.
  - 2. Remove rock to lines and grades indicated to permit installation of permanent construction.

### 3.5 EXCAVATION FOR WALKS AND PAVEMENTS

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

### 3.6 EXCAVATION FOR UTILITY TRENCHES

- A. Excavate trenches to indicated gradients, lines, depths, and elevations.
  - 1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.
- 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 (300 mm) higher than top of pipe or conduit unless otherwise indicated.
  - 1. Clearance: 12 inches (300 mm) each side of pipe or conduit.
- C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.
  - 1. For pipes and conduit less than 6 inches (150 mm) in nominal diameter, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
  - 2. For pipes and conduit 6 inches (150 mm) or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe or conduit circumference. Fill depressions with tamped sand backfill.
  - 3. For flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support conduit on an undisturbed subgrade.
  - 4. Excavate trenches 6 inches (150 mm) deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

- D. Trench Bottoms: Excavate trenches 4 inches (100 mm) deeper than bottom of pipe and conduit elevations to allow for bedding course. Hand-excavate deeper for bells of pipe.
  - 1. Excavate trenches 6 inches (150 mm) deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

### 3.7 SUBGRADE INSPECTION

- A. Notify Engineer when excavations have reached required subgrade.
- B. If Engineer determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
- C. Proof-roll subgrade with a vibratory plate to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.
  - 1. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Engineer, 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.
- E. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Engineer, without additional compensation.

### 3.8 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 (17.2 MPa), may be used when approved by Engineer.
  - 1. Fill unauthorized excavations under other construction, pipe, or conduit as directed by Engineer.

### 3.9 STORAGE OF SOIL MATERIALS

- A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
  - 1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

### 3.10 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 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, 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.

### 3.11 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 voids with satisfactory soil while removing shoring and bracing.

D. Initial Backfill:

1. Soil Backfill: Place and compact initial backfill of subbase material, free of particles larger than 1 inch (25 mm) in any dimension, to a height of 12 inches (300 mm) over the pipe or conduit.
  - a. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.

E. Final Backfill:

1. Soil Backfill: Place and compact final backfill of satisfactory soil to final subgrade elevation.

### 3.12 SOIL FILL

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

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

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

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

### 3.13 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.

### 3.14 COMPACTION OF SOIL BACKFILLS AND FILLS

- A. Place backfill and fill soil materials in layers not more than 8 inches (200 mm) in loose depth for material compacted by heavy compaction equipment and not more than 4 inches (100 mm) 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 698:
  - 1. Under walkways, scarify and recompact top 6 inches (150 mm) below subgrade and compact each layer of backfill or fill soil material at 92 percent.
  - 2. Under turf or unpaved areas, scarify and recompact top 6 inches (150 mm) below subgrade and compact each layer of backfill or fill soil material at 85 percent.
  - 3. For utility trenches, compact each layer of initial and final backfill soil material at 85 percent.

### 3.15 GRADING

- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
  - 1. Provide a smooth transition between adjacent existing grades and new grades.
  - 2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
- B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to elevations required to achieve indicated finish elevations, within the following subgrade tolerances:
  - 1. Turf or Unpaved Areas: Plus or minus 1 inch (25 mm).
  - 2. Walks: Plus or minus 1 inch (25 mm).

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

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

### 3.17 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 classification and maximum lift thickness comply with requirements.
  - 3. Determine, during placement and compaction, 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 earth moving only after test results for previously completed work comply with requirements.
- D. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2937, and ASTM D 6938, as applicable. Tests will be performed at the following locations and frequencies:
  - 1. Trench Backfill: At each compacted initial and final backfill layer, at least one test for every 150 feet (46 m) or less of trench length but no fewer than two tests.
- E. 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.

### 3.18 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 Engineer; 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.

3.19 DISPOSAL OF SURPLUS AND WASTE MATERIALS

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

END OF SECTION 312000

## SECTION 312500 – EROSION AND SEDIMENT CONTROL

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:

- 1. Inlet Protection.
- 2. Compost Filter Sock(s).

- B. Related Requirements:

- 1. Pennsylvania Department of Environmental Protection Erosion And Sediment Pollution Control Program Manual.

#### 1.3 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified testing agency.
- B. Material Test Reports: For all compost filter sock material.
- C. Preinstallation 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 FIELD CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth-moving operations.
  - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
  - 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.

## PART 2 - PRODUCTS

### 2.1 Compost Filter Socks

- A. Compost Filter Sock Fabric to meet the minimum specifications of Table 4.1 of the Pennsylvania Department of Environmental Protection Erosion And Sediment Pollution Control Program Manual.
- B. Compost Filter Sock Filler to meet the minimum specifications of Table 4.2 of the Pennsylvania Department of Environmental Protection Erosion And Sediment Pollution Control Program Manual.

### 2.2 Inlet Protection

- A. Inlet filter bags:
  - 1. All materials shall be in accordance with Chapter 4 of the Pennsylvania Department of Environmental Protection Erosion And Sediment Pollution Control Program Manual.
- B. Stone/Compost Filter inlet protection:
  - 1. All materials shall be in accordance with Chapter 4 of the Pennsylvania Department of Environmental Protection Erosion And Sediment Pollution Control Program Manual.

## PART 3 - EXECUTION

### 3.1 PREPARATION/INSTALLATION

- A. Clearing and grubbing operations shall not begin until all Erosion and Sediment Controls have been placed.
- B. Erosion and Sediment Controls are to be installed in locations as shown on the Plan Set.
- C. Installation of all Erosion and Sediment Controls shall be in accordance with the Pennsylvania Department of Environmental Protection Erosion And Sediment Pollution Control Program Manual and all notes and details on the Plan Set.

### 3.2 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Testing agency will perform required inspections on a weekly basis and provide inspection reports to the Owner and Engineer.
- C. When testing agency reports that any deficiencies are present, additional Erosion and Sediment Controls shall be installed as necessary to remedy said deficiency.

END OF SECTION 312500

## SECTION 334100 - STORM UTILITY DRAINAGE PIPING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:
  1. Pipe and fittings.
  2. Cleanouts.
  3. Drains.
  4. Channel drainage systems.
  5. Catch basins.

#### 1.3 DEFINITIONS

- A. FRP: Fiberglass-reinforced plastic.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings:
  1. Channel drainage systems. Include elevations, sections, details, frames, and grates.
  2. Catch basins. Include elevations, sections, details, frames and grates.
  3. Pipes and fittings.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Show pipe sizes, locations, and elevations. Show other piping in same trench and clearances from storm drainage system piping. Indicate interface and spatial relationship between manholes, piping, and proximate structures.
- B. Product Certificates: For each type of cast-iron soil pipe and fitting, from manufacturer.
- C. Field quality-control reports.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Do not store materials in direct sunlight.
- B. Protect pipe, pipe fittings, and seals from dirt and damage.
- C. Handle channel drainage systems according to manufacturer's written rigging instructions.

## 1.7 PROJECT CONDITIONS

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

## PART 2 - PRODUCTS

### 2.1 ABS PIPE AND FITTINGS

- A. ABS Sewer Pipe and Fittings: ASTM D 2751, with bell-and-spigot ends for gasketed joints.
  - 1. NPS 3 to NPS 6 (DN 80 to DN 150): SDR 35.
  - 2. NPS 8 to NPS 12 (DN 200 to DN 300): SDR 42.
- B. Gaskets: ASTM F 477, elastomeric seals.

### 2.2 PE PIPE AND FITTINGS

- A. Corrugated PE Drainage Pipe and Fittings NPS 3 to NPS 10 (DN 80 to DN 250): AASHTO M 252M, Type S, with smooth waterway for coupling joints.
  - 1. Soiltight Couplings: AASHTO M 252M, corrugated, matching tube and fittings.
- B. Corrugated PE Pipe and Fittings NPS 12 to NPS 60 (DN 300 to DN 1500): AASHTO M 294M, Type S, with smooth waterway for coupling joints.
  - 1. Soiltight Couplings: AASHTO M 294M, corrugated, matching pipe and fittings.

### 2.3 CHANNEL DRAINAGE SYSTEMS

- A. Stainless Steel Trench Drains:
  - 1. Description: Factory fabricated from ASTM A 242/A 242M, welded steel plate, to form rectangular body with uniform bottom downward slope of toward outlet per project plans, anchor flange, and grate. Include units of total length indicated, bottom outlet of size

- indicated, outlet strainer, acid-resistant enamel coating on inside and outside surfaces, and grate with openings of total free area at least two times cross-sectional area of outlet.
2. Plate Thicknesses: 1/8 inch (3.2 mm) and 1/4 inch (6.4 mm).
  3. Overall Widths: 12 inches.
    - a. Grate Openings: 1/4-by-3-inch slots.

## 2.4 CATCH BASINS

- A. PVC/HDPE pipe stock for main structure and all drainage pipe connection stubs.
- B. Joint tightness to conform to ASTM D3212 for joints for drain and sewer plastic pipe using flexible elastomeric seals.
  1. Flexible elastomeric seal to conform to ASTM F477
- C. Dimensions
  1. Diameter: 24"
  2. Depth: 6'-3"
- D. Grate to be solid cover lid.

## PART 3 - EXECUTION

### 3.1 EARTHWORK

- A. Excavation, trenching, and backfilling are specified in Section 312000 "Earth Moving."

### 3.2 CONCRETE PLACEMENT

- A. Place cast-in-place concrete according to ACI 318 and Technical Specification Section 033000.

### 3.3 CHANNEL DRAINAGE SYSTEM INSTALLATION

- A. Install per manufacturers instructions.
- B. Install with top surfaces of components, except piping, flush with finished surface.
- C. Assemble channel sections to form slope down toward drain outlets. Use sealants, adhesives, fasteners, and other materials recommended by system manufacturer.
- D. Embed channel sections and drainage specialties in 4-inch (102-mm) minimum concrete around bottom and sides.
- E. Fasten grates to channel sections in accordance with manufacturer recommendations.
- F. Assemble channel sections with flanged or interlocking joints.

- G. Embed channel sections in 4-inch (102-mm) minimum concrete around bottom and sides.

### 3.4 CATCH BASIN INSTALLATION

- A. Install per manufacturer's instructions.
- B. Backfill material shall be crushed stone or other granular material meeting the requirements of class 1, 2, or 3 materials as defined in ASTM D2321.

### 3.5 CONNECTIONS

- A. Connect nonpressure, gravity-flow drainage piping in building's storm building drains specified in Section 221413 "Facility Storm Drainage Piping."
- B. Connect force-main piping to building's storm drainage force mains specified in Section 221413 "Facility Storm Drainage Piping." Terminate piping where indicated.
- C. Make connections to existing piping and underground manholes.
  - 1. Use commercially manufactured wye fittings for piping branch connections. Remove section of existing pipe; install wye fitting into existing piping; and encase entire wye fitting, plus 6-inch (150-mm) overlap, with not less than 6 inches (150 mm) of concrete with 28-day compressive strength of 3000 psi (20.7 MPa).
  - 2. Make branch connections from side into existing piping, NPS 4 to NPS 20 (DN 100 to DN 500). Remove section of existing pipe, install wye fitting into existing piping, and encase entire wye with not less than 6 inches (150 mm) of concrete with 28-day compressive strength of 3000 psi (20.7 MPa).
  - 3. Make branch connections from side into existing piping, NPS 21 (DN 525) or larger, or to underground manholes and structures by cutting into existing unit and creating an opening large enough to allow 3 inches (76 mm) of concrete to be packed around entering connection. Cut end of connection pipe passing through pipe or structure wall to conform to shape of and be flush with inside wall unless otherwise indicated. On outside of pipe, manhole, or structure wall, encase entering connection in 6 inches (150 mm) of concrete for minimum length of 12 inches (300 mm) to provide additional support of collar from connection to undisturbed ground.
    - a. Use concrete that will attain a minimum 28-day compressive strength of 3000 psi (20.7 MPa) unless otherwise indicated.
    - b. Use epoxy-bonding compound as interface between new and existing concrete and piping materials.
  - 4. Protect existing piping, manholes, and structures to prevent concrete or debris from entering while making tap connections. Remove debris or other extraneous material that may accumulate.

### 3.6 IDENTIFICATION

- A. Materials and their installation are specified in Section 312000 "Earth Moving." Arrange for installation of warning tape directly over piping and at outside edge of underground structures.
  - 1. Use warning tape or detectable warning tape over ferrous piping.
  - 2. Use detectable warning tape over nonferrous piping and over edges of underground structures.

### 3.7 FIELD QUALITY CONTROL

- A. Inspect interior of piping to determine whether line displacement or other damage has occurred. Inspect after approximately 24 inches (610 mm) of backfill is in place, and again at completion of Project.
  - 1. Submit separate reports for each system inspection.
  - 2. Defects requiring correction include the following:
    - a. Alignment: Less than full diameter of inside of pipe is visible between structures.
    - b. Deflection: Flexible piping with deflection that prevents passage of ball or cylinder of size not less than 92.5 percent of piping diameter.
    - c. Damage: Crushed, broken, cracked, or otherwise damaged piping.
    - d. Infiltration: Water leakage into piping.
    - e. Exfiltration: Water leakage from or around piping.
  - 3. Replace defective piping using new materials, and repeat inspections until defects are within allowances specified.
  - 4. Reinspect and repeat procedure until results are satisfactory.
- B. Test new piping systems, and parts of existing systems that have been altered, extended, or repaired, for leaks and defects.
  - 1. Do not enclose, cover, or put into service before inspection and approval.
  - 2. Test completed piping systems according to requirements of authorities having jurisdiction.
  - 3. Schedule tests and inspections by authorities having jurisdiction with at least 24 hours' advance notice.
  - 4. Submit separate report for each test.
  - 5. Gravity-Flow Storm Drainage Piping: Test according to requirements of authorities having jurisdiction, UNI-B-6, and the following:
    - a. Exception: Piping with soiltight joints unless required by authorities having jurisdiction.
    - b. Option: Test plastic piping according to ASTM F 1417.
    - c. Option: Test concrete piping according to ASTM C 924 (ASTM C 924M).
- C. Leaks and loss in test pressure constitute defects that must be repaired.
- D. Replace leaking piping using new materials, and repeat testing until leakage is within allowances specified.

3.8 CLEANING

- A. Clean interior of piping of dirt and superfluous materials. Flush with potable water.

END OF SECTION 334100

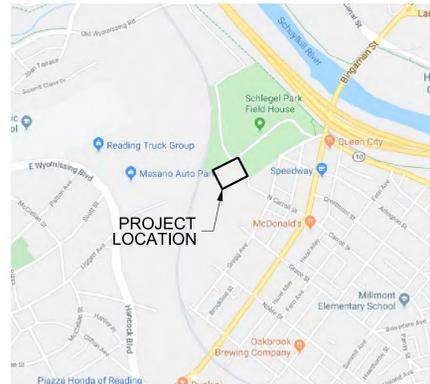
ATTACHMENT 2

SCHLEGEL PARK POOL PLANS  
SHEET C-1 TO C5 AND AC-1 TO AC-5

# SCHLEGEL PARK POOL

## CITY OF READING, BERKS COUNTY, PENNSYLVANIA

PREPARED FOR:  
**CITY OF READING**  
**815 WASHINGTON STREET**  
**READING, PENNSYLVANIA 19601**



OWNER:  
 CITY OF READING  
 815 WASHINGTON STREET  
 READING, PA 19601

ENGINEER/PLAN PREPARER:  
 CEDARVILLE ENGINEERING GROUP LLC  
 159 E. HIGH STREET  
 POTTSTOWN, PA 19464  
 PHONE: 610-705-4500

SITE ADDRESS:  
 299 NORTH CARROLL STREET  
 READING, PA 19611

DRAWING NUMBER	DRAWING TITLE	DRAWING SCALE
C-1	COVER SHEET	NTS
C-2	EXISTING FEATURES AND DEMOLITION PLAN	1"=20'
C-3	SITE AND GRADING PLAN	1"=20'
C-4	EROSION AND SEDIMENT CONTROL PLAN	1"=20'
C-5	DETAIL SHEET	NTS
AC-1	POOL DEMOLITION PLAN	AS NOTED
AC-2	PROPOSED POOL PLAN	AS NOTED
AC-3	PROPOSED POOL PIPING PLAN	AS NOTED
AC-4	WADING POOL PLAN	AS NOTED
AC-5	WADING POOL DETAILS	AS NOTED

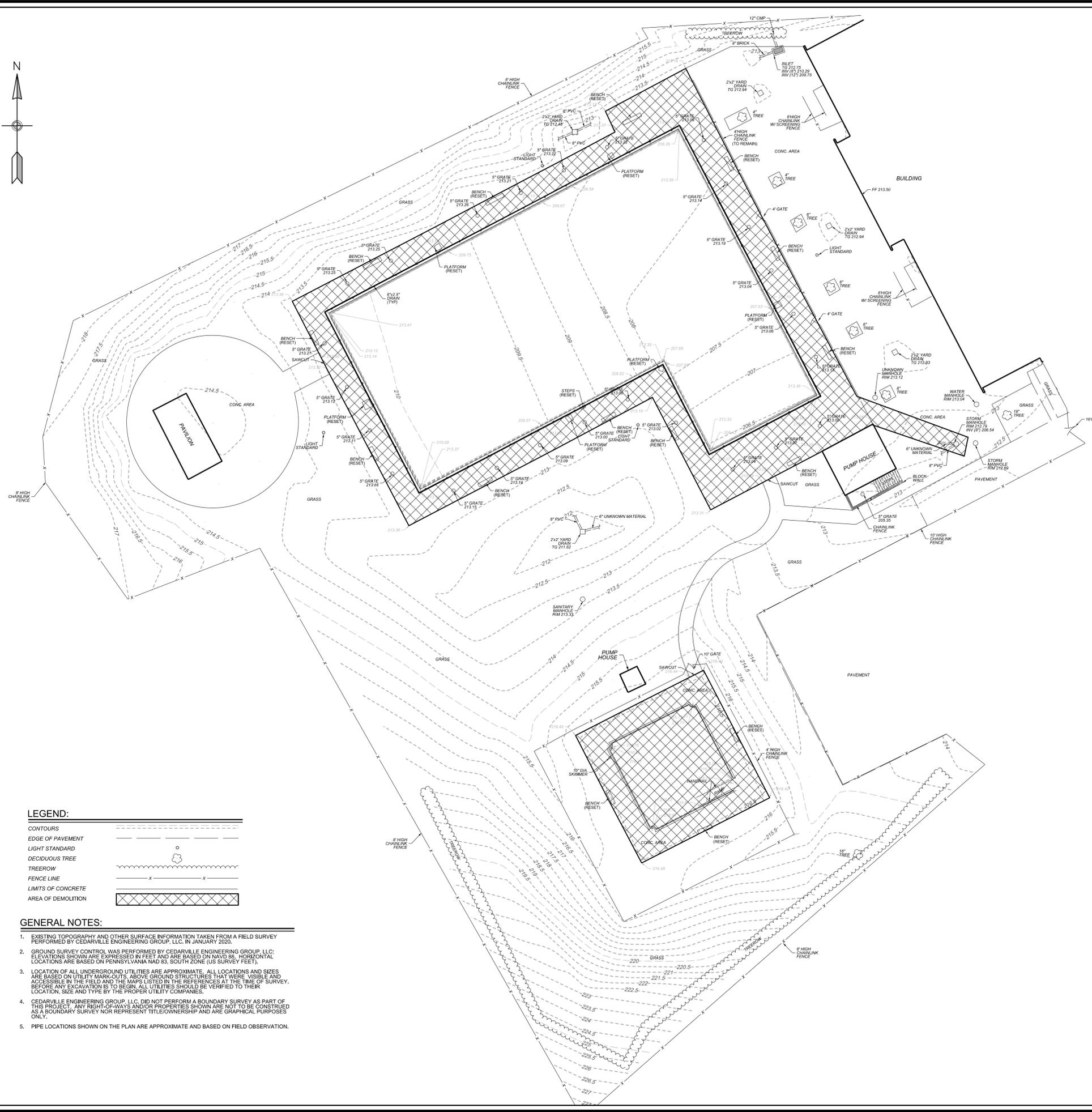
MARK	COMMENT	DATE
1	ISSUED FOR BID	03/19/2020



SITELINE  
 CITY OF READING, BERKS COUNTY, PENNSYLVANIA  
 COVER SHEET  
 PREPARED FOR  
 CITY OF READING  
 PROJECT NAME  
 SCHLEGEL PARK POOL

DESIGNED BY: MJC/KRT  
 DRAWN BY: MJC  
 CHECKED BY: KRT  
 PROJECT NO: REA-18-350  
 DATE: 3/11/2020  
 SCALE: NTS

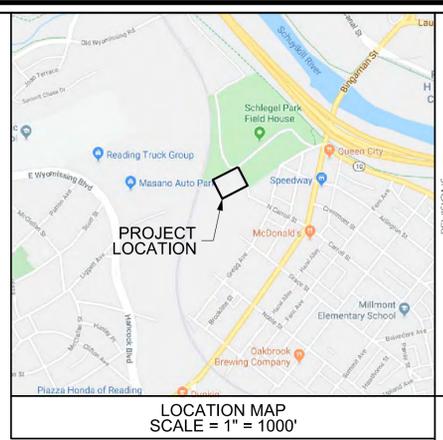
SHEET 1 OF 5  
**C-1**



**LEGEND:**

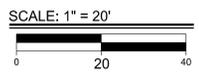
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EDGE OF PAVEMENT	---
LIGHT STANDARD	⊙
DECIDUOUS TREE	⊙
TREEROW	~
FENCE LINE	-x-x-
LIMITS OF CONCRETE	▣
AREA OF DEMOLITION	▣

- GENERAL NOTES:**
- EXISTING TOPOGRAPHY AND OTHER SURFACE INFORMATION TAKEN FROM A FIELD SURVEY PERFORMED BY CEDARVILLE ENGINEERING GROUP, LLC. IN JANUARY 2020.
  - GROUND SURVEY CONTROL WAS PERFORMED BY CEDARVILLE ENGINEERING GROUP, LLC. ELEVATIONS SHOWN ARE EXPRESSED IN FEET AND ARE BASED ON NAVD 88. HORIZONTAL LOCATIONS ARE BASED ON PENNSYLVANIA NAD 83, SOUTH ZONE (US SURVEY FEET).
  - LOCATION OF ALL UNDERGROUND UTILITIES ARE APPROXIMATE. ALL LOCATIONS AND SIZES ARE BASED ON UTILITY MARK-OUTS, ABOVE GROUND STRUCTURES THAT WERE VISIBLE AND ACCESSIBLE IN THE FIELD AND THE MAPS LISTED IN THE REFERENCES AT THE TIME OF SURVEY. BEFORE ANY EXCAVATION IS TO BEGIN, ALL UTILITIES SHOULD BE VERIFIED TO THEIR LOCATION, SIZE AND TYPE BY THE PROPER UTILITY COMPANIES.
  - CEDARVILLE ENGINEERING GROUP, LLC DID NOT PERFORM A BOUNDARY SURVEY AS PART OF THIS PROJECT. ANY RIGHT-OF-WAYS AND/OR PROPERTIES SHOWN ARE NOT TO BE CONSTRUED AS A BOUNDARY SURVEY NOR REPRESENT TITLE/OWNERSHIP AND ARE GRAPHICAL PURPOSES ONLY.
  - PIPE LOCATIONS SHOWN ON THE PLAN ARE APPROXIMATE AND BASED ON FIELD OBSERVATION.



DATE:	03/19/2020
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REVISIONS:	

- DEMOLITION NOTES:**
- CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, (29 U.S.C. 651 et seq.), AS AMENDED AND ANY MODIFICATIONS, AMENDMENTS, OR REVISIONS TO THE SAME.
  - CEDARVILLE ENGINEERING GROUP, LLC, HAS NO CONTRACTUAL, LEGAL, OR OTHER RESPONSIBILITY FOR JOB SITE SAFETY OR JOB SITE SUPERVISION, OR ANYTHING RELATED TO THE SAME.
  - THE DEMOLITION PLAN IS INTENDED TO PROVIDE GENERAL INFORMATION, ONLY, REGARDING ITEMS TO BE DEMOLISHED AND/OR REMOVED. THE CONTRACTOR MUST ALSO REVIEW THE OTHER SITE PLAN DRAWINGS AND INCLUDE IN DEMOLITION ACTIVITIES ALL INCIDENTAL WORK NECESSARY FOR THE CONSTRUCTION OF THE NEW SITE IMPROVEMENTS.
  - CONTRACTOR MUST RAISE ANY QUESTIONS CONCERNING THE ACCURACY OR INTENT OF THESE PLANS OR SPECIFICATIONS, CONCERNS REGARDING THE APPLICABLE SAFETY STANDARDS, OR THE SAFETY OF THE CONTRACTOR OR THIRD PARTIES IN PERFORMING THE WORK ON THIS PROJECT, WITH RESIDENT PROJECT REPRESENTATIVE, IN WRITING, AND RESPONDED TO BY RESIDENT PROJECT REPRESENTATIVE, IN WRITING, PRIOR TO THE INITIATION OF ANY SITE ACTIVITY AND ANY DEMOLITION ACTIVITY. ALL DEMOLITION ACTIVITIES MUST BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THESE PLANS AND SPECIFICATIONS AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS, RULES, REQUIREMENTS, STATUTES, ORDINANCES, AND CODES.
  - PRIOR TO STARTING ANY DEMOLITION, CONTRACTOR IS RESPONSIBLE FOR TO:
    - OBTAINING ALL REQUIRED PERMITS AND MAINTAINING THE SAME ON SITE FOR REVIEW BY THE ENGINEER AND OTHER PUBLIC AGENCIES HAVING JURISDICTION THROUGHOUT THE DURATION OF THE PROJECT, SITE WORK, AND DEMOLITION WORK.
    - THE REQUIRED SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN PLACE PRIOR TO SITE DISTURBANCE.
    - ALL UTILITIES AND SERVICES, INCLUDING BUT NOT LIMITED TO, GAS, WATER, ELECTRIC, SANITARY AND STORM SEWER, TELEPHONE, CABLE, FIBER OPTIC, CABLE, ETC., WITHIN THE LIMITS OF DISTURBANCE SHALL BE VERTICALLY AND HORIZONTALLY LOCATED. THE CONTRACTOR SHALL USE AND COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY NOTIFICATION SYSTEM TO LOCATE ALL UTILITIES.
    - PROTECT AND MAINTAIN IN OPERATION, ALL ACTIVE SYSTEMS THAT ARE NOT BEING REMOVED DURING ALL DEMOLITION ACTIVITIES.
    - FAMILIARIZE THEMSELVES WITH THE APPLICABLE UTILITY SERVICE PROVIDER REQUIREMENT AND IS RESPONSIBLE FOR ALL COORDINATION REGARDING UTILITY DEMOLITION AS IDENTIFIED OR REQUIRED FOR THE PROJECT. THE CONTRACTOR SHALL PROVIDE THE OWNER WRITTEN NOTIFICATION THAT THE EXISTING UTILITIES AND SERVICES HAVE BEEN TERMINATED AND ABANDONED IN ACCORDANCE WITH JURISDICTION AND UTILITY COMPANY REQUIREMENTS.
    - DETERMINING THE LOCATION OF THE EXISTING SITE LIGHTING ELECTRICAL CONDUIT, WHEN DETERMINING THE CONDUIT LOCATION, EXCAVATION WORK SHALL BE DONE BY HAND AND THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO ENSURE THE ELECTRICITY IS OFF PRIOR TO STARTING EXCAVATION WORK.
  - ALL DEMOLITION ACTIVITIES ARE TO BE PERFORMED IN ACCORDANCE WITH THESE PLANS, SPECIFICATIONS, AND REFERENCED DOCUMENTS AS WELL AS ALL FEDERAL, STATE, AND LOCAL REGULATIONS, ANY DISCREPANCIES OR DEVIATIONS SHALL BE IDENTIFIED BY THE CONTRACTOR TO THE ENGINEER IN WRITING FOR RESOLUTION PRIOR TO INITIATION OF THE ACTIVITY.
  - THE CONTRACTOR SHALL PROVIDE ALL THE "MEANS AND METHODS" NECESSARY TO PREVENT MOVEMENT, SETTLEMENT, COLLAPSE, OR DAMAGE OF EXISTING STRUCTURES, AND ANY OTHER IMPROVEMENTS THAT ARE REMAINING ON OR OFF SITE.
  - EXPLOSIVES SHALL NOT BE USED.
  - THE CONTRACTOR SHALL CONDUCT DEMOLITION ACTIVITIES IN SUCH A MANNER TO INSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, SIDEWALKS, WALKWAYS, AND OTHER ADJACENT FACILITIES. STREET CLOSURE PERMITS MUST BE RECEIVED FROM THE APPROPRIATE GOVERNMENTAL AUTHORITY WHERE REQUIRED.
  - DEMOLITION ACTIVITIES AND EQUIPMENT SHALL NOT USE AREAS OUTSIDE THE DEFINED PROPERTY LINES, WITHOUT WRITTEN PERMISSION OF THE OWNER, AND/OR APPROPRIATE GOVERNMENT AGENCY.
  - USE DUST CONTROL MEASURES TO LIMIT THE AMOUNT OF AIRBORNE DUST AND DIRT RISING AND SCATTERING IN THE AIR TO WITHIN FEDERAL, STATE, AND/OR LOCAL STANDARDS. AFTER THE DEMOLITION IS COMPLETE, ADJACENT STRUCTURES AND IMPROVEMENTS SHALL BE CLEANED OFF ALL DUST AND DEBRIS CAUSED BY THE DEMOLITION OPERATIONS. THE CONTRACTOR IS RESPONSIBLE FOR RETURNING ALL ADJACENT AREAS TO THEIR "PRE-DEMOLITION" CONDITION.
  - THE CONTRACTOR IS RESPONSIBLE TO SAFEGUARD THE SITE AS NECESSARY TO PERFORM THE DEMOLITION IN SUCH A MANNER AS TO PREVENT THE UNAUTHORIZED ENTRY OF PERSONS AT ANY TIME.
  - THIS DEMOLITION PLAN IS INTENDED TO IDENTIFY THOSE EXISTING ITEMS/CONDITIONS WHICH ARE TO BE REMOVED. IT IS NOT INTENDED TO PROVIDE DIRECTION OTHER THAN THAT ALL METHODS AND MEANS ARE TO BE IN ACCORDANCE WITH STATE, FEDERAL, LOCAL, AND JURISDICTIONAL REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OSHA AND OTHER SAFETY PRECAUTIONS NECESSARY TO PROVIDE A SAFE WORK SITE.
  - THE DEMOLITION CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS OF DAMAGE TO ALL ITEMS THAT ARE TO REMAIN AS A RESULT OF HIS/HER ACTIVITIES. ALL REPAIRS SHALL USE NEW MATERIAL. THE REPAIRS SHALL RESTORE THE ITEM TO THE PRE-DEMOLITION CONDITION.
  - DEBRIS SHALL NOT BE BURIED ON THE SUBJECT SITE. ALL EXCAVATED MATERIAL AND DEBRIS (SOLID WASTE) SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, COUNTY, STATE, AND FEDERAL LAWS AND APPLICABLE CODES. THE CONTRACTOR SHALL PROPERLY REMOVE AND DISPOSE OF HAZARDOUS/UNUSABLE MATERIAL OFF-SITE IN ACCORDANCE WITH ALL APPLICABLE CODES, ORDINANCES, AND LAWS.
  - ALL BENCHES, PLATFORMS, AND STAIRS SHALL BE REMOVED PRIOR TO THE START OF DEMOLITION WORK AND STORED BY THE CONTRACTOR IN A SAFE LOCATION WHERE THEY WILL NOT BE DAMAGED.
  - CONTRACTOR SHALL SAWCUT ALONG THE BORDER BETWEEN CONCRETE TO REMAIN AND CONCRETE TO BE DEMOLISHED PRIOR TO THE START OF DEMOLITION WORK.
  - CONTRACTOR SHALL LIMIT VIBRATION DURING DEMOLITION SO AS TO NOT DAMAGE THE EXISTING POOL STRUCTURE.
  - EXISTING POOL GUTTER LINE SHALL BE DEMOLISHED BY HAND.
  - REFER TO SHEET AC-1 FOR ANY REQUIRED DEMOLITION OF THE POOL STRUCTURE.
  - EXISTING DRAINAGE PIPES FOR THE POOL DECK SHALL BE REMOVED WHERE POSSIBLE. AT LOCATIONS WHERE PIPES LEAVE THE DISTURBED AREA, PIPES SHALL BE CAPPED AND SEALED.



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SITING IN  
 CITY OF READING, BERKS COUNTY, PENNSYLVANIA  
 EXISTING FEATURES AND DEMOLITION PLAN  
 PREPARED FOR  
 CITY OF READING  
 PROJECT NAME  
 SCHLEGEL PARK POOL

DESIGNED BY:	MJC/KRT
DRAWN BY:	MJC
CHECKED BY:	KRT
PROJECT NO.:	REA-18-350
DATE:	3/11/2020
SCALE:	1"=20'
SHEET	2 OF 5

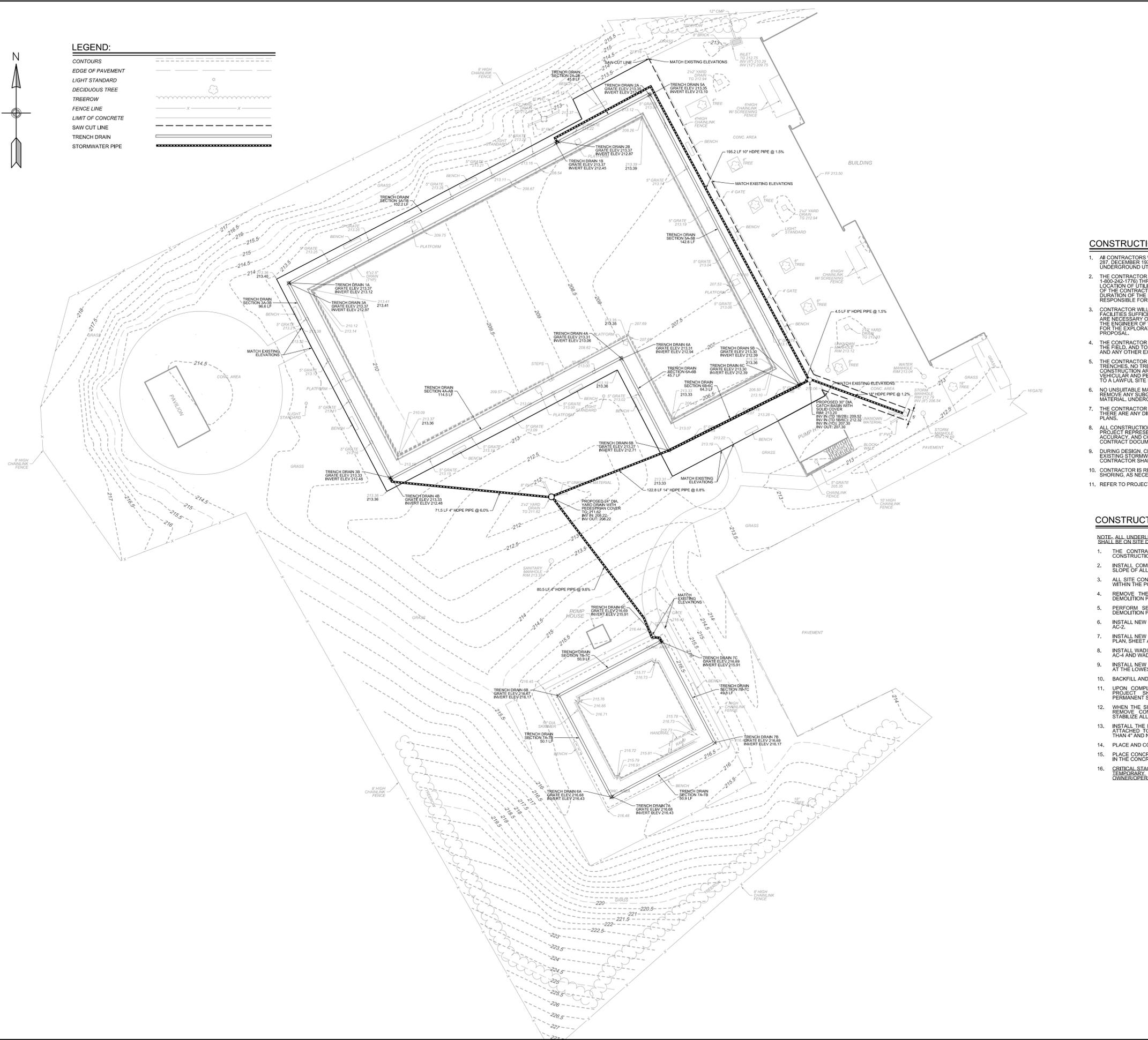
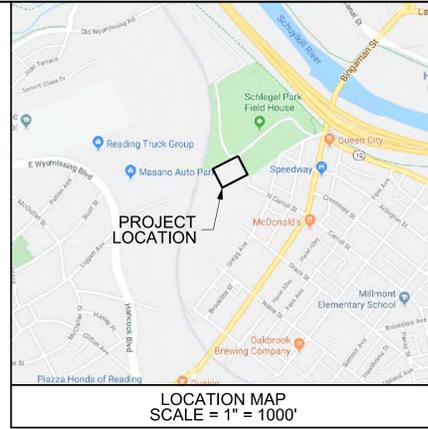


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**LEGEND:**

- CONTOURS
- EDGE OF PAVEMENT
- LIGHT STANDARD
- DECIDUOUS TREE
- TREEROW
- FENCE LINE
- LIMIT OF CONCRETE
- SAW CUT LINE
- TRENCH DRAIN
- STORMWATER PIPE

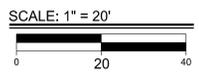


**CONSTRUCTION NOTES:**

1. ALL CONTRACTORS WORKING ON THIS PROJECT SHALL COMPLY WITH REQUIREMENTS OF P.L. 852, NO. 257, DECEMBER 1974 AS AMENDED ON OCTOBER 9, 2008 BY PENNSYLVANIA ACT 121 ENTITLED UNDERGROUND UTILITY LINE PROTECTION ACT.
2. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE PENNSYLVANIA ONE CALL SYSTEM (PHONE: 1-800-242-1776) THREE WORKING DAYS IN ADVANCE OF ANY EXCAVATION FOR THE MARK-OUT OF THE LOCATION OF UTILITIES AND NOTIFICATION OF COMMENCEMENT OF WORK. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ALL UTILITY MARKINGS WITHIN THE PROJECT LIMITS FOR THE DURATION OF THE PROJECT. IF UTILITY MARKINGS ARE OBLITERATED, THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING PA ONE CALL FOR MARK-OUT.
3. CONTRACTOR WILL MAKE EXPLORATION EXCAVATIONS AND LOCATE EXISTING UNDERGROUND FACILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO PLANS IF REVISIONS ARE NECESSARY OR TO REQUEST THE RELOCATION OF THE EXISTING FACILITY BY THE UTILITY. NOTIFY THE ENGINEER OF WORK IF ANY DISCREPANCIES IN UTILITY LINE LOCATIONS ARE FOUND. THE COSTS FOR THE EXPLORATION WORK SHALL BE INCIDENTAL TO THE ITEMS INCLUDED IN THE CONTRACTOR'S PROPOSAL.
4. THE CONTRACTOR IS SPECIFICALLY CAUTIONED TO TAKE MEASUREMENTS OF UTILITY LOCATIONS IN THE FIELD, AND TO TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN HEREON AND ANY OTHER EXISTING LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY BACKFILLING AND COMPACTING ALL TRENCHES. NO TRENCHES ARE TO BE LEFT OPEN AFTER COMPLETION OF WORK FOR THE DAY. ALL CONSTRUCTION AREAS ARE TO BE KEPT IN A CONDITION THAT ALLOWS FOR SAFE MOVEMENT OF BOTH VEHICULAR AND PEDESTRIAN TRAFFIC. ANY EXCESS MATERIAL FROM TRENCHING SHALL BE DELIVERED TO A LAWFUL SITE LOCATION BY THE CONTRACTOR AT THEIR OWN EXPENSE.
6. NO UNSUITABLE MATERIAL IS TO BE USED IN ANY PORTION OF THE PERMANENT TRENCH RESTORATION. REMOVE ANY SUBGRADE THAT CANNOT BE PROPERLY COMPACTED AND THAT IS UNSUITABLE MATERIAL. UNDERCUTTING AND/OR SUBGRADE STABILIZATION MAY BE REQUIRED.
7. THE CONTRACTOR SHOULD CONTACT THE ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION IF THERE ARE ANY DIFFERENCES BETWEEN THE FIELD CONDITIONS AND BASE SURVEY SHOWN ON THE PLANS.
8. ALL CONSTRUCTION DETAILED ITEMS WILL REQUIRE SHOP DRAWINGS TO BE SUBMITTED TO RESIDENT PROJECT REPRESENTATIVE. ALL SHOP DRAWINGS WILL BE REVIEWED FOR THOROUGHNESS, ACCURACY, AND COMPLIANCE BY OUR CONSTRUCTION SERVICES STAFF AND SHALL COMPLY WITH THE CONTRACT DOCUMENTS.
9. DURING DESIGN, CEG AND THE CITY OF READING ATTEMPTED TO VERIFY THE OUTFLOW PIPE FROM THE EXISTING STORMWATER VAULT LOCATED ON THE SOUTHEAST CORNER OF THE SWIMMING POOL. THE CONTRACTOR SHALL VERIFY AND FORMALLY SUBMIT THE PIPE SIZE DURING CONSTRUCTION.
10. CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF ADEQUATE AND SAFE TRENCH SHORINGS AS NECESSARY TO INSTALL THE REQUIRED IMPROVEMENTS AS SHOWN ON THIS PLAN SET.
11. REFER TO PROJECT TECHNICAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.

**CONSTRUCTION SEQUENCE:**

- NOTE: ALL UNDERLINED TEXT IS A CRITICAL STAGE. A LICENSED PROFESSIONAL OR THEIR DESIGNEE SHALL BE ON SITE DURING ALL CRITICAL STAGE CONSTRUCTION.
1. THE CONTRACTOR SHALL CLEARLY DELINEATE ALL PROPOSED DISTURBANCE LIMITS WITH CONSTRUCTION STAKING AND/OR CONSTRUCTION FENCING AS INDICATED ON THE PLANS.
  2. INSTALL COMPOST FILTER SOCKS AND INLET PROTECTION AS INDICATED ON THE PLAN. DOWN SLOPE OF ALL FILL AREAS, AND AS DIRECTED BY THE OWNER/ENGINEER.
  3. ALL SITE CONSTRUCTION OPERATIONS SHALL BE COORDINATED WITH WORK TO BE COMPLETED WITHIN THE POOL AREA.
  4. REMOVE THE EXISTING CONCRETE SIDEWALK AND DRAINAGE SYSTEM AS SHOWN IN THE DEMOLITION PLAN.
  5. PERFORM SELECTIVE POOL DEMOLITION AND TESTING IN ACCORDANCE WITH THE POOL DEMOLITION PLAN, SHEET AC-1. PERFORM POOL DEMOLITION OF WADING POOL, SHEET AC-2.
  6. INSTALL NEW POOL INTERIOR FINISHES IN ACCORDANCE WITH THE PROPOSED POOL PLAN, SHEET AC-3.
  7. INSTALL NEW STORMWATER PIPING AND RETURN JETS IN ACCORDANCE WITH THE PROPOSED POOL PIPING PLAN, SHEET AC-3.
  8. INSTALL WADING POOL WATER FEATURES AND PUMPS AS SHOWN ON WADING POOL PLAN, SHEET AC-4 AND WADING POOL DETAILS, SHEET AC-5.
  9. INSTALL NEW STORMWATER PIPING AND YARD DRAINS. PIPE RUNS SHALL BE INSTALLED STARTING AT THE LOWEST POINT AND BE CONNECTED TO THE SPECIFIED OUTLET STRUCTURES.
  10. BACKFILL AND COMPACT ALL TRENCHES AND EXCAVATIONS USING SUITABLE MATERIAL.
  11. UPON COMPLETION OR TEMPORARY CESSATION OF EARTH DISTURBANCE ACTIVITIES, THE PROJECT SHALL BE IMMEDIATELY STABILIZED WITH THE APPROPRIATE TEMPORARY OR PERMANENT STABILIZATION.
  12. WHEN THE SITE HAS REACHED FINISHED GRADE AND ACHIEVED 70% UNIFORM STABILIZATION, REMOVE CONSTRUCTION ENTRANCE SOCKS, AND ORANGE CONSTRUCTION FENCE. STABILIZE ALL AREAS DISTURBED BY REMOVAL OF ALL TEMPORARY ERS BMPs.
  13. INSTALL THE ELECTRICAL BONDING AS SHOWN IN DETAIL #2 ON SHEET AC-3. BONDING SHALL BE ATTACHED TO ALL METAL OBJECTS WITHIN FIVE FEET OF THE POOL. BONDING SHALL BE DEEPER THAN 4" AND NO DEEPER THAN 6" BELOW SUBGRADE.
  14. PLACE AND COMPACT SUBBASE FOR THE CONCRETE POOL DECK.
  15. PLACE CONCRETE FOR THE POOL DECK AND TRENCH DRAIN SYSTEM. EMBED THE TRENCH DRAIN IN THE CONCRETE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
  16. CRITICAL STAGE: UPON COMPLETION OF EARTH DISTURBANCE ACTIVITIES, REMOVAL OF ALL TEMPORARY ERS, BMPs, AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS. THE OWNER/OPERATORS SHALL CONTACT THE ENGINEER FOR A FINAL INSPECTION.



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MARK	COMMENT	REVISIONS	DATE
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SITING IN  
 CITY OF READING, BERKS COUNTY, PENNSYLVANIA  
 SITE AND GRADING PLAN  
 PREPARED FOR  
 CITY OF READING  
 PROJECT NAME  
 SCHLEGEL PARK POOL

DESIGNED BY:	MJC/KRT
DRAWN BY:	MJC
CHECKED BY:	KRT
PROJECT NO.:	REA-18-350
DATE:	3/11/2020
SCALE:	1"=20'
SHEET	3 OF 5

**C-3**

P:\\_Drawing\REA-18-350\_Schlegel Park\_Pool\Drawings\REA-18-350-03.PLA.dgn

**LEGEND:**

- CONTOURS
- EDGE OF PAVEMENT
- LIGHT STANDARD
- DECIDUOUS TREE
- TREEROW
- FENCE LINE
- LIMIT OF CONCRETE
- SAW CUT LINE
- TRENCH DRAIN
- STORMWATER PIPE
- LIMIT OF DISTURBANCE
- 12" COMPOST FILTER SOCK
- INLET FILTER PROTECTION



LIMIT OF DISTURBANCE  
22,206 SQUARE FEET OR 0.51 ACRE

**PROJECT LOCATION**

**LOCATION MAP**  
SCALE = 1" = 1000'

DATE:	03/19/2020
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**STANDARD E&S NOTES:**

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH E&S PLAN, A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM (NOC) SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
3. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
4. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
5. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE UNTIL THE E&S BMPs SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THE E&S PLAN.
6. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
7. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAP(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER.
8. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
9. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA CODE 260.1 ET SEQ., 271.1 AND 287.1 ET SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURIED, DUMPED, OR DISCHARGED AT THE SITE.
10. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
11. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM #1001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF REGULATED SUBSTANCE, BUT NOT LIMITED TO ANALYTICAL TESTING.
12. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPs SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTION OF ALL EROSION AND SEDIMENT BMPs AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RETENING, MUST BE PERFORMED IMMEDIATELY IF THE E&S BMPs FAIL TO PERFORM AS EXPECTED. REPLACEMENT OF BMPs, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
13. A LOG SHOWING DATES THAT E&S BMPs WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
14. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE WORK AREA AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEEP INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
15. ALL SEDIMENT REMOVED FROM BMPs SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
16. AREAS WHICH ARE TO BE TOP SOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES, 6 TO 12 INCHES ON COMPACTED SOILS. PRIOR TO PLACEMENT OF TOPSOIL, AREAS TO BE VEGETATED SHALL HAVE A MINIMUM OF 1 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
17. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC., SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS.
18. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
19. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOIL, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
20. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
21. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
22. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
23. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPLETE BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDING AREAS WITHIN 30 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON PLAN DRAWINGS, SHALL BE VEGETATED ACCORDING TO THE STANDARDS OF THIS PLAN.
24. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS, DURING WHICH PERMANENT MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
25. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NONVEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION, CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
26. E&S BMPs SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
27. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPs.
28. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPs MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER BMPs. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPs SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
29. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
30. FAILURE TO CORRECTLY INSTALL E&S BMPs; FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE; OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPs MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES. PENALTIES INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE E&S STREAMS LAW PROVIDES FOR UP TO \$10,000 PER DAY IN CIVIL PENALTIES, UP TO \$10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO \$25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

**PLAN ABBREVIATIONS:**

- CFS = COMPOST FILTER SOCK
- CDS = COMPOST DIVERSION SOCK

**ADDITIONAL E&S NOTES:**

1. NO ROCK CONSTRUCTION ENTRANCE IS PROPOSED FOR THIS PROJECT. CONTRACTOR IS TO CLEAN AND WASH ALL SEDIMENT FROM VEHICLES AND EQUIPMENT PRIOR TO LEAVING THE SITE. IN THE EVENT THAT SEDIMENT ACCUMULATES OUTSIDE OF THE WORK SITE, A ROCK CONSTRUCTION ENTRANCE SHALL BE INSTALLED BY THE CONTRACTOR.

SITUATION IN  
CITY OF READING, BERKS COUNTY, PENNSYLVANIA

PREPARED FOR  
CITY OF READING

PROJECT NAME  
SCHLEGEL PARK POOL

DESIGNED BY:	MJC/KRT
DRAWN BY:	MJC
CHECKED BY:	KRT
PROJECT NO.:	REA-18-350
DATE:	3/11/2020
SCALE:	1"=20'

SHEET 4 OF 5

SCALE: 1" = 20'

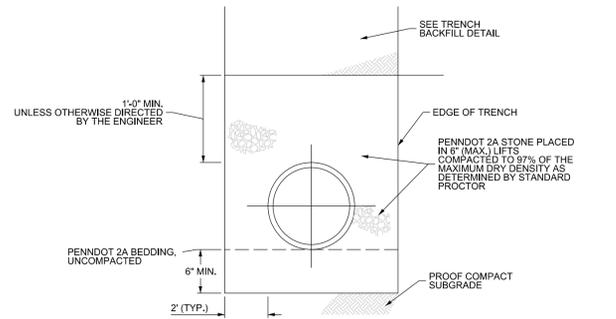


SERIAL# 20200352520

Underground Service Alert  
Call: TOLL FREE  
1-800-242-1776  
THREE WORKING DAYS BEFORE YOU DIG

**C-4**

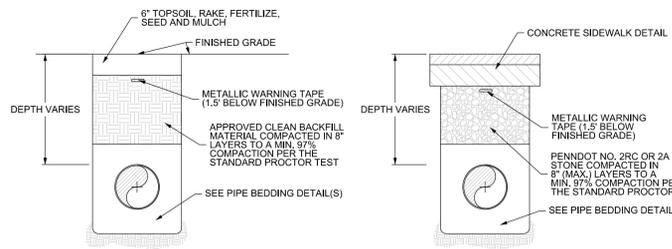
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- NOTES:
- IF TRENCH IS EXTREMELY WET DUE TO HIGH GROUNDWATER, USE AASHTO #57 STONE UP TO THE HAUNCHES OF THE PIPE. REMAINDER OF BEDDING TO BE PENNDOT 2A.
  - PENNDOT 2A STONE SHALL BE PLACED IN LIFTS NO LARGER THAN 8" AND THEN COMPACTED.
  - CLEAN FILL MUST BE APPROVED BY THE TOWNSHIP ENGINEER PRIOR TO PLACEMENT IN THE TRENCH.
  - REFER TO PROJECT TECHNICAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.

**PIPE BEDDING (STORM SEWER)**

NOT TO SCALE



**UNPAVED AREAS**

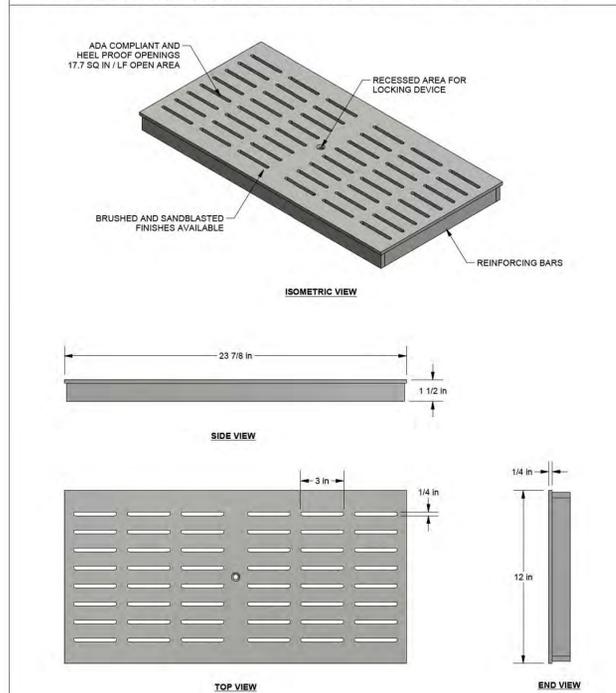
**CONCRETE AREAS**

- NOTES:
- CLEAN FILL MUST BE APPROVED BY THE OWNER OR RESIDENT ENGINEER HAVING JURISDICTION PRIOR TO PLACEMENT IN THE TRENCH.
  - AREAS AROUND MANHOLES, INLETS, AND OTHER APPURTENANCES SHALL BE HAND COMPACTED AS DIRECTED BY THE MUNICIPALITY/AUTHORITY HAVING JURISDICTION.
  - NO SLAG MATERIAL PERMITTED.
  - IF WATER IS ENCOUNTERED IN THE EXCAVATION TRENCH, AASHTO #57 AGGREGATE MUST BE USED.
  - ALL MATERIALS AND CONSTRUCTION METHODS SHALL COMPLY WITH THE PROJECT TECHNICAL SPECIFICATIONS.
  - UNDER NO CIRCUMSTANCES SHALL WATER BE ALLOWED TO COLLECT IN EXCAVATED TRENCHES. ANY WATER IN THE TRENCHES SHALL BE REMOVED THROUGH A PUMPED WATER FILTER BAG.

**BACKFILL (TRENCH)**

NOT TO SCALE

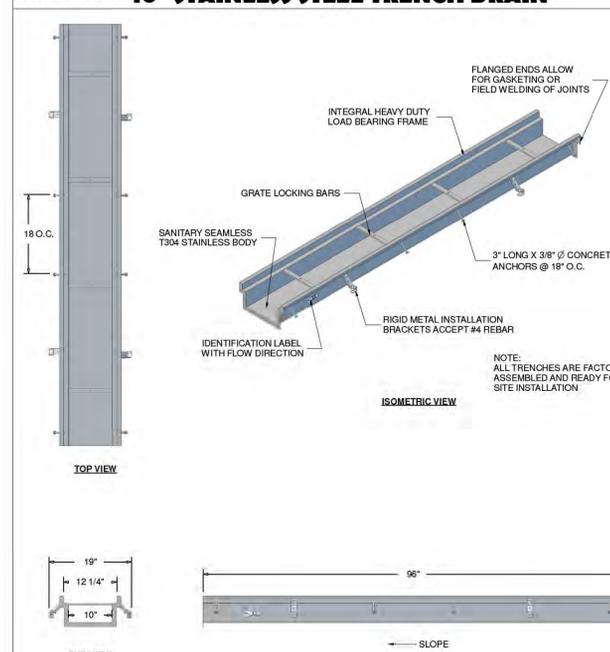
**12CF2455C 12" ADA / HEEL PROOF STAINLESS GRATE**



MATERIAL	T304 STAINLESS STEEL	STANDARD TOLERANCES	±0.000
COATING	NONE	±0.005	±0.010
LOCKING	BOLT AND TOGGLE	±0.005	±0.010
LOAD RATING	DIN CLASS C		
ADA / HEEL GUARD	YES		



**DT510-INTEGRAL 10" STAINLESS STEEL TRENCH DRAIN**



TRENCH MATERIAL	T304 STAINLESS STEEL (316 OPTIONAL)	STANDARD TOLERANCES	±0.000
FRAME MATERIAL	INTEGRAL	±0.005	±0.010
FRAME COATING	NONE	±0.005	±0.010
ANCHOR STUDS	3" X 3/8" Ø		
INSTALL DEVICE	RIGID STAMPED METAL FOR #4 BARS		
LOAD RATING	HEAVY DUTY		
SLOPE	1.0% TYP (CUSTOM SLOPE AVAILABLE)		



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GRATE OPTIONS	LOAD RATING	PART #	DRAWING #
PEDESTRIAN	MEETS H-20	3099GCP	7001-110-220
STANDARD	MEETS H-20	3099GCS	7001-110-217
SOLID COVER	MEETS H-20	3099GSC	7001-110-218
DOME	N/A	3099GSD	7001-110-219
DRIP IN GRATE	LIGHT DUTY	2451DI	7001-110-275

- GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-60-05.
- FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-60-05.
- DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 8' DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-505.
- DRAINAGE CONNECTION STUD JOINT THICKNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL, N-12 HP & PVC SEWER).
- ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°, TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.

MINIMUM PIPE BURIAL DEPTH PER PIPE MANUFACTURER RECOMMENDATION (MIN. MANUFACTURING REQ. SAME AS MIN. SUMP)

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WATERTIGHT JOINT (CORRUGATED HDPE SHOWN)

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(5) ADAPTER ANGLES VARIABLE 0° - 360° ACCORDING TO PLANS

(1, 2) INTEGRATED DUCTILE IRON FRAME & GRATE TO MATCH BASIN O.D.

18" MIN WIDTH GUIDELINE

8" MIN THICKNESS GUIDELINE

(3) VARIABLE INVERT HEIGHTS AVAILABLE (ACCORDING TO PLANS/TAKE OFF)

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18" MIN WIDTH GUIDELINE

8" MIN THICKNESS GUIDELINE

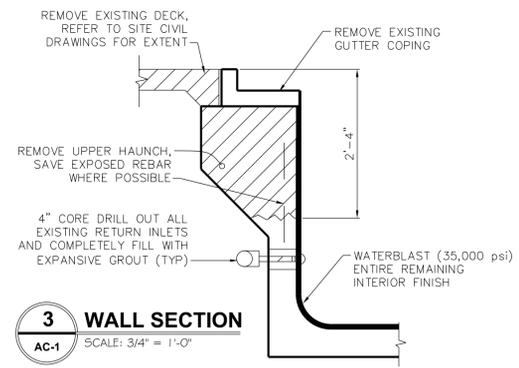
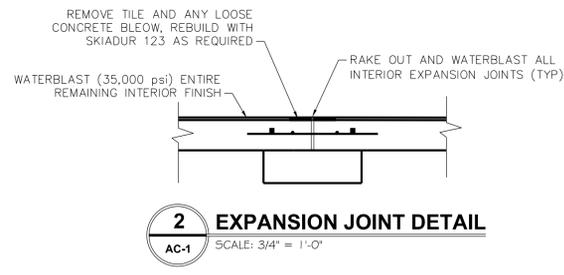
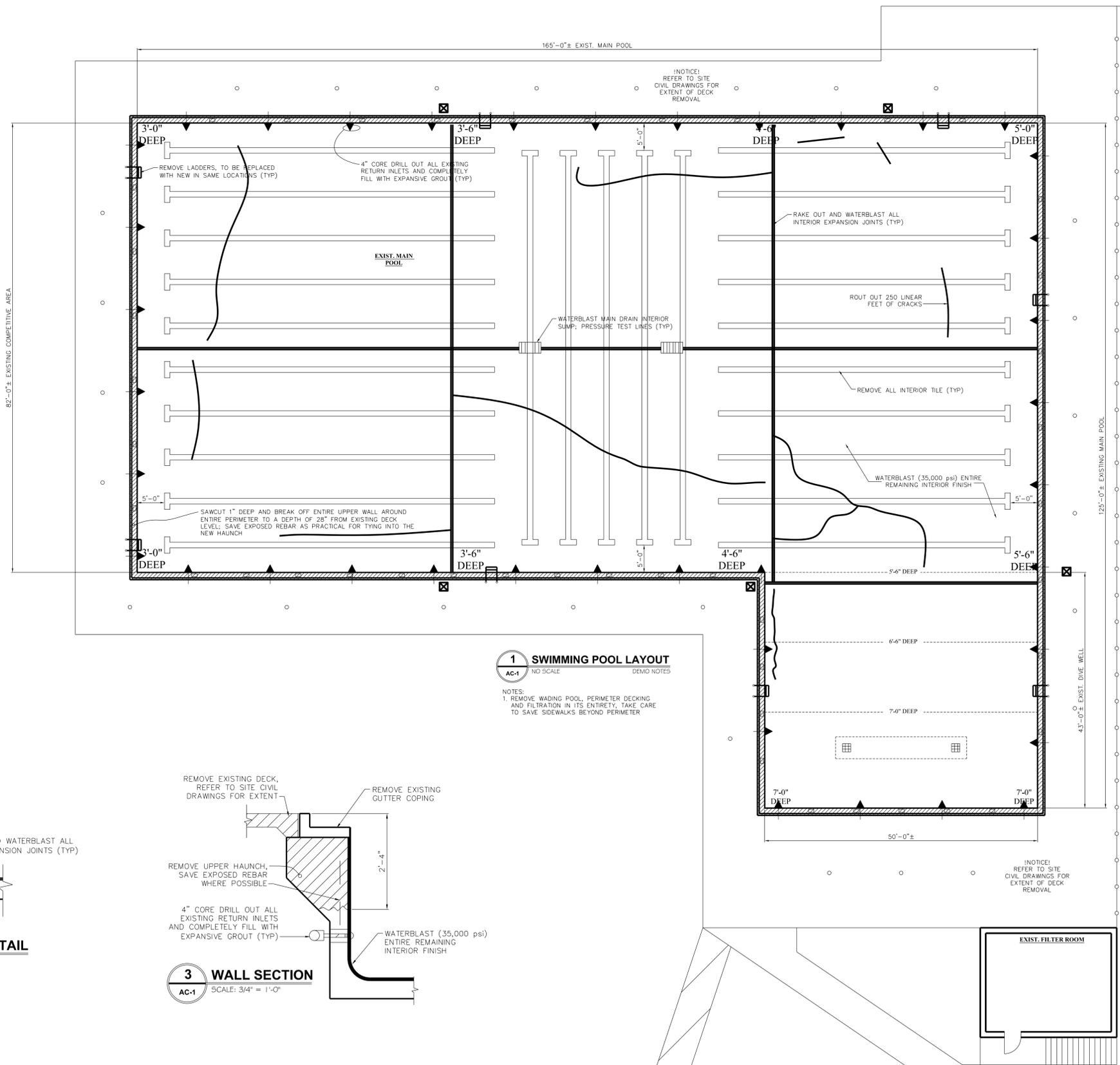
(3) VARIABLE INVERT HEIGHTS AVAILABLE (ACCORDING TO PLANS/TAKE OFF)

MINIMUM PIPE BURIAL DEPTH PER PIPE MANUFACTURER RECOMMENDATION (MIN. MANUFACTURING REQ. SAME AS MIN. SUMP)

TRAFFIC LOADS: CONCRETE SLAB DIMENSIONS ARE FOR GUIDELINE PURPOSES ONLY. ACTUAL CONCRETE SLAB MUST BE DESIGNED TAKING INTO CONSIDERATION LOCAL SOIL CONDITIONS, TRAFFIC LOADING, & OTHER APPLICABLE DESIGN FACTORS. SEE DRAWING NO. 7001-110-111 FOR NON TRAFFIC INSTALLATION.

THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS I, CLASS II, OR CLASS III MATERIAL AS DEFINED IN ASTM D2321. BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321.

WATERTIGHT JOINT (CORRUGATED HDPE SHOWN)



**1 SWIMMING POOL LAYOUT**  
 AC-1 NO SCALE DEMO NOTES  
 NOTES:  
 1. REMOVE WADING POOL, PERIMETER DECKING AND FILTRATION IN ITS ENTIRETY. TAKE CARE TO SAVE SIDEWALKS BEYOND PERIMETER

MARK	COMMENT	REVISIONS	DATE
1	ISSUED FOR BID		03/19/2020

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 Deptford, NJ 08227  
 Phone: 856.326.8823  
 Fax: 856.326.8824  
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SITELINE  
 CITY OF READING, BERKS COUNTY, PENNSYLVANIA  
**POOL DEMOLITION PLAN**  
 PREPARED FOR  
 CITY OF READING  
 PROJECT NAME  
 SCHLEGEL PARK POOL

DESIGNED BY:	BTH
DRAWN BY:	BTH
CHECKED BY:	PCA
PROJECT NO.:	REA-18-350
DATE:	3/11/2020
SCALE:	AS NOTED

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DATE:	03/15/2020
REVISIONS:	
MARK:	COMMENT: ISSUED FOR BID
1	

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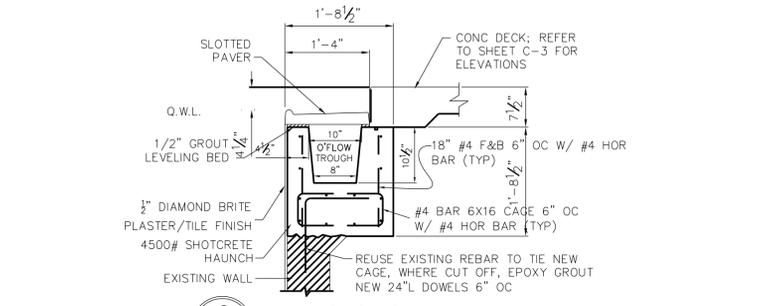
**Integrated Aquatics Engineering Inc.**  
 77 Shrewsbury Ave., Dept. 200  
 P.O. Box 212, Pottstown, PA 19464  
 610.705.4500

SITELINE IN  
 CITY OF READING, BERKS COUNTY, PENNSYLVANIA  
 PROPOSED POOL PLAN  
 PREPARED FOR  
 CITY OF READING  
 PROJECT NAME  
 SCHLEGEL PARK POOL

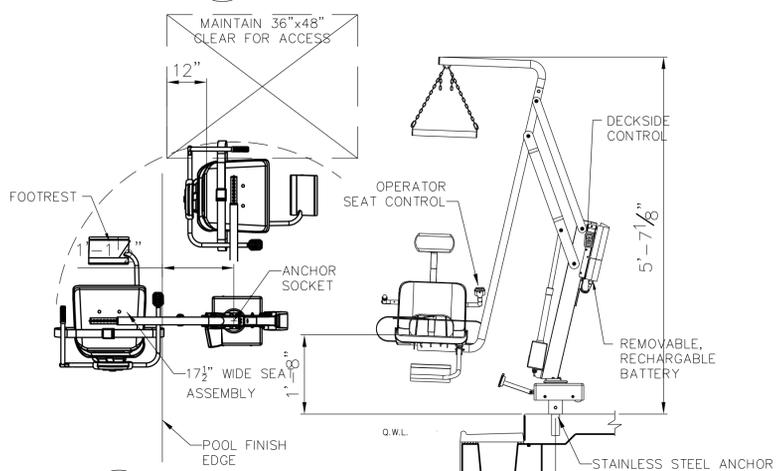
DESIGNED BY: **BTH**  
 DRAWN BY: **BTH**  
 CHECKED BY: **PCA**  
 PROJECT NO: **REA-18-350**  
 DATE: **3/11/2020**  
 SCALE: **AS NOTED**

SHEET **2** OF **5**

**AC-2**

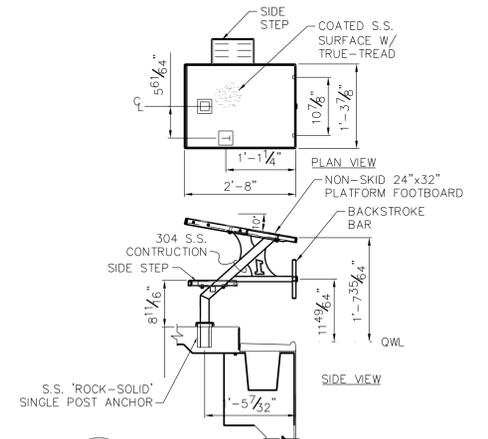


**2 WALL SECTION**  
 AC-2 SCALE: 3/4" = 1'-0"

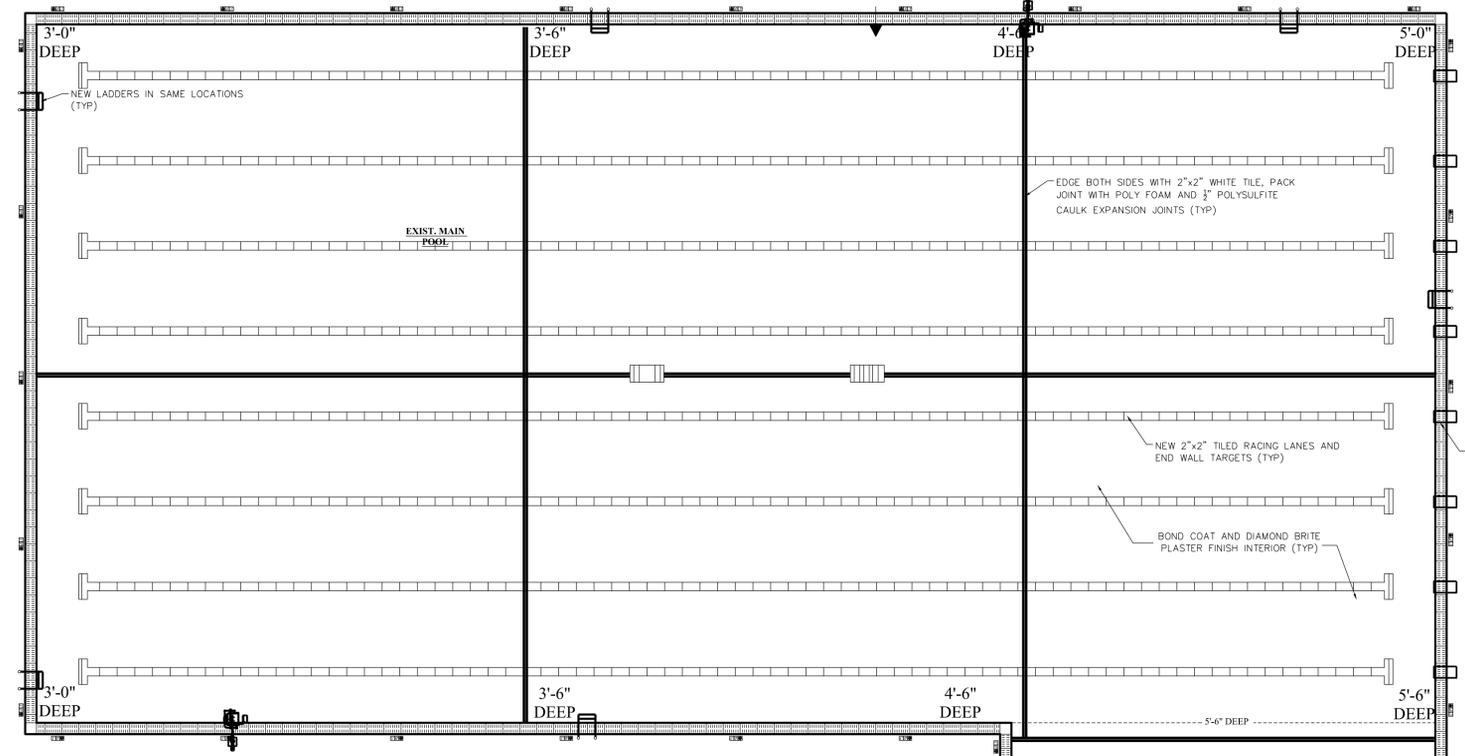


**3 HANDICAP LIFT DETAIL**  
 AC-2 SCALE: 1/2" = 1'-0"

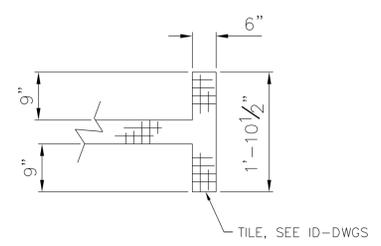
- ADA 2010 COMPLIANCE POOL LIFT SECTION 1009.2:
- 1009.2.1 - LIFT LOCATED IN 36"-48" (MIN.-MAX.) OF WATER DEPTH
  - 1009.2.2 - SEAT CENTERLINE 16" CLEAR OF POOL EDGE MIN
  - 1009.2.3 - 36" WIDE DECK CLEAR ADJACENT SEAT WITH ADDITIONAL 12" BEHIND SEAT
  - 1009.2.4 - SEAT HEIGHT 16"-19" AFF (MIN.-MAX.)
  - 1009.2.5 - SEAT WIDTH 16" MIN.
  - 1009.2.6 - FOOTREST CONNECTED TO SEAT
  - 1009.2.7 - CONTROLS SELF OPERABLE BY USER
  - 1009.2.8 - SEAT SUBMERGES 18" DEEP
  - 1009.2.9 - LIFT IS CAPABLE OF SUPPORTING 300# MIN.



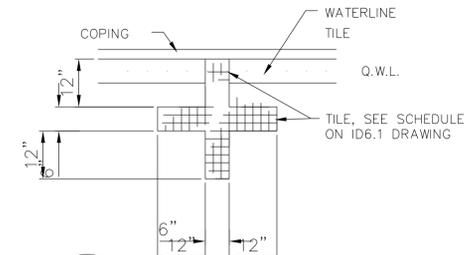
**7 STARTING PLATFORM DETAIL**  
 AC-2 NO SCALE



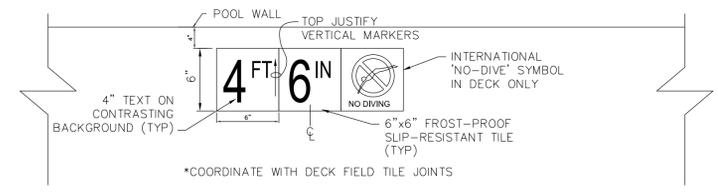
**1 SWIMMING POOL LAYOUT**  
 AC-2 NO SCALE PROPOSED



**4 RACING LANE MARKER**  
 AC-2 SCALE: 1/2" = 1'-0"



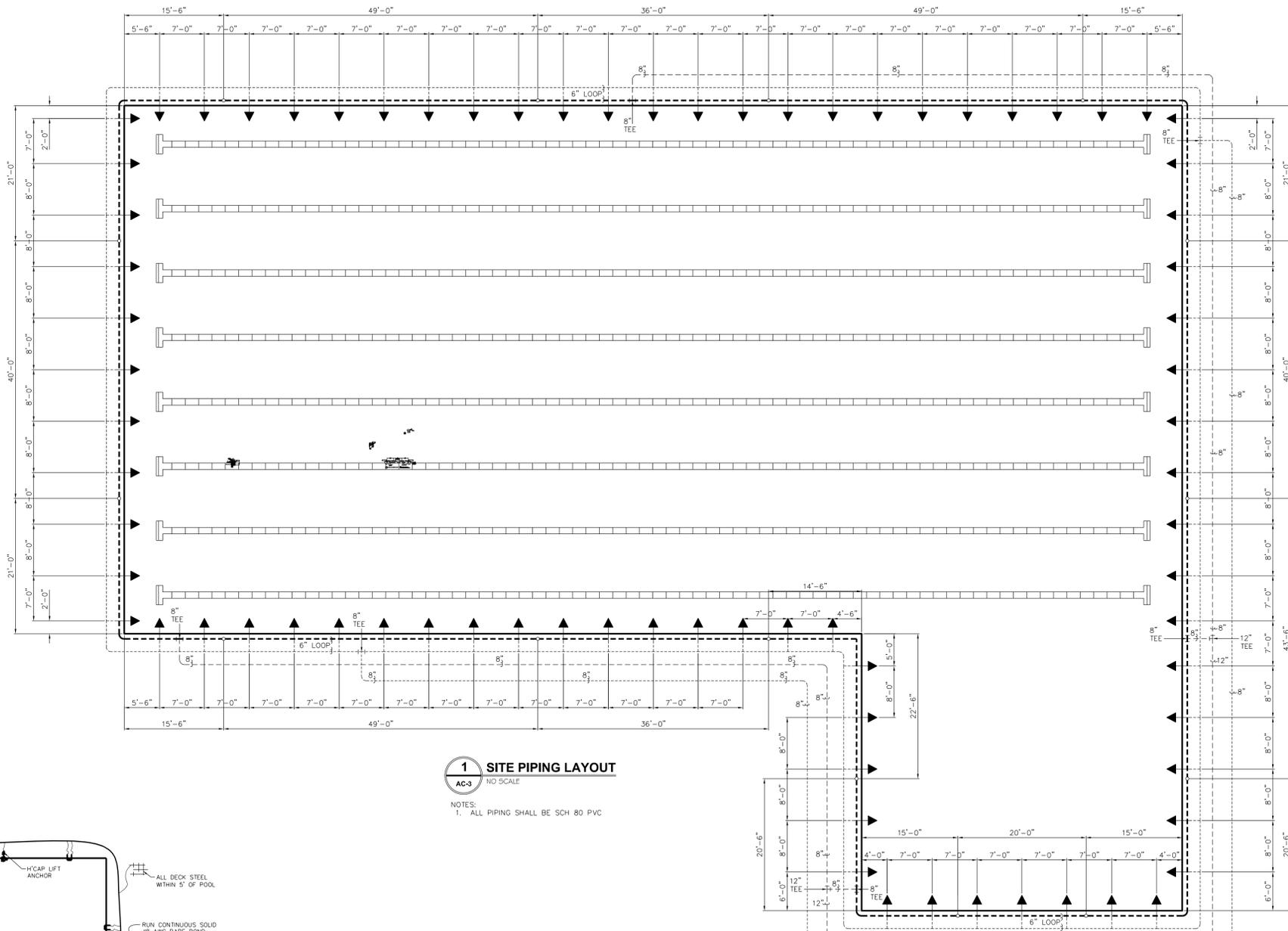
**5 ENDWALL TARGET MARKER**  
 AC-2 NO SCALE



**6 DEPTH MARKER DETAIL**  
 AC-2 SCALE: 1-1/2" = 1'-0"

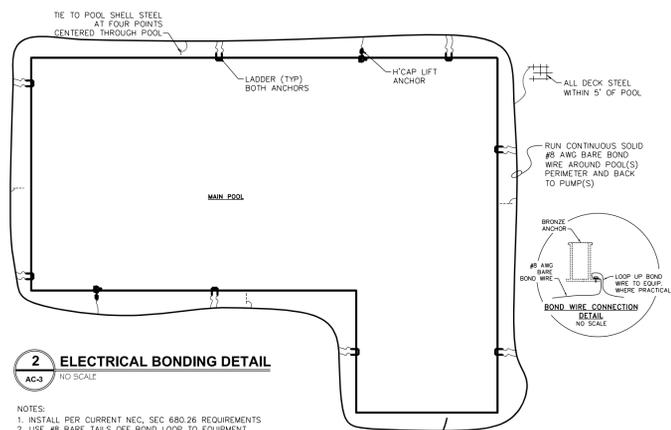
- NOTES:
1. GROUT DEPTH MARKERS INTO DECK TILE FIELD
  2. INSTALL GLAZED TILE VERTICAL DEPTH MARKERS IN DECK EXPOSED VERTICAL FACE TO CORRESPOND TO DECK MARKERS
  3. ALL MARKERS SHALL BE SLIP RESISTANT WHERE SET IN DECK
  4. DEPTH TO BE MEASURED FROM WATER LEVEL TO FLOOR A DISTANCE OF THREE FEET OFF WALL
  5. IT IS RECOMMENDED THAT A 2"x2" WHITE TILE BE SET AT DEPTH MEASUREMENT LOCATION TO MAINTAIN PROPER DEPTH WHILE PLASTERING
  6. DEPTHS (AND DEPTH MARKERS) SHALL BE WITHIN 1/2"±

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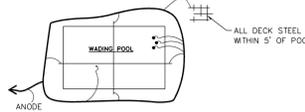
**1 SITE PIPING LAYOUT**  
AC-3 NO SCALE

NOTES:  
1. ALL PIPING SHALL BE SCH 80 PVC



**2 ELECTRICAL BONDING DETAIL**  
AC-3 1/2" SCALE

NOTES:  
1. INSTALL PER CURRENT NEC, SEC 680.26 REQUIREMENTS  
2. USE #8 BARE TALS OFF BOND LOOP TO EQUIPMENT AND STEEL NOT IMMEDIATELY ADJACENT TO BOND LOOP  
3. BOND BOTH SWIMMING POOL AND WADING POOL SEPARATELY  
4. PROVIDE A "CERTIFICATE OF COMPLIANCE" PER NEC REQUIREMENTS TO THE DPH, SPC AND OWNER PRIOR TO INSTALLATION OF DECKING



MARK	COMMENT	REVISIONS	DATE
1	ISSUED FOR BID		03/19/2020

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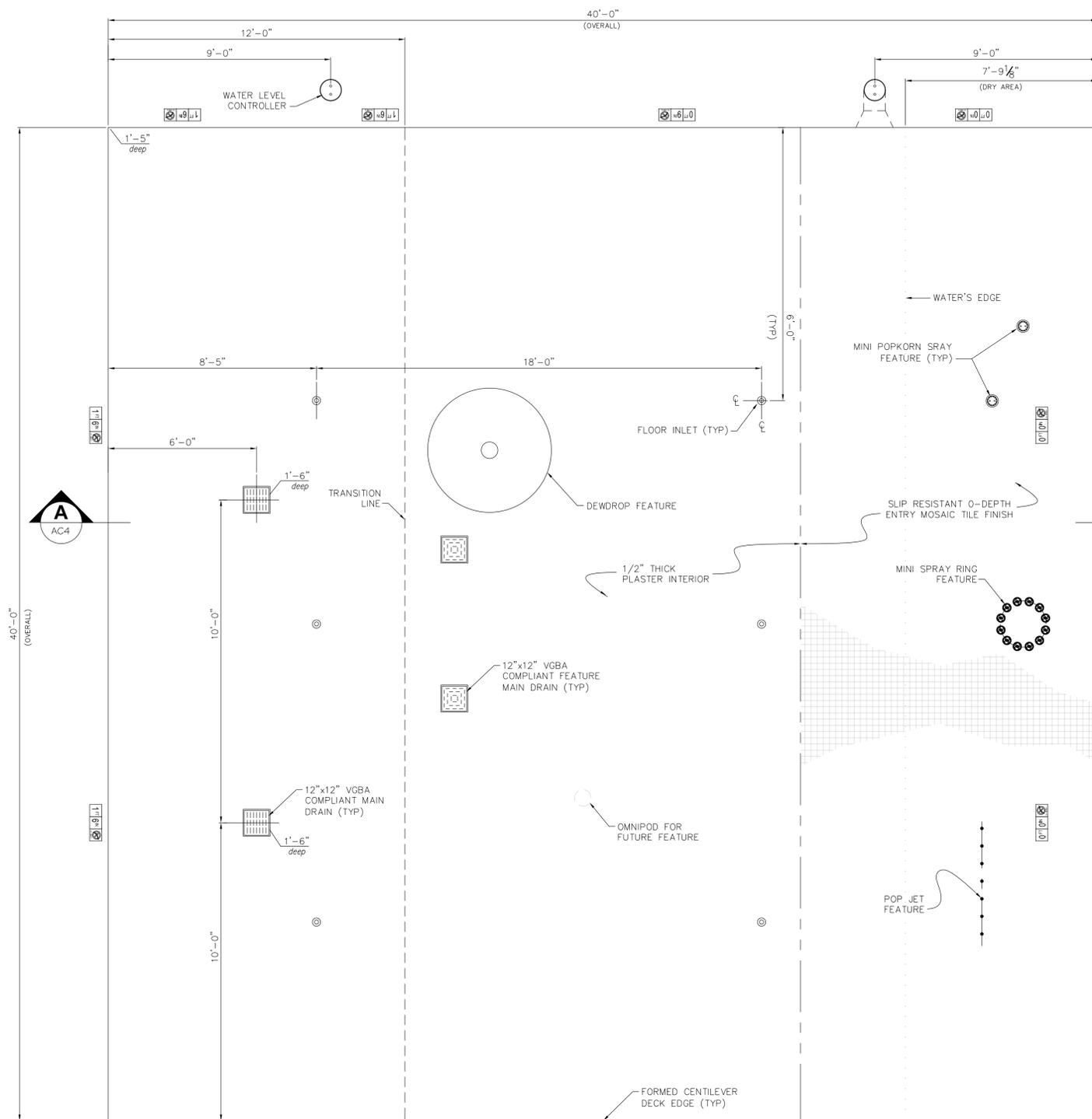
SITELINE IN  
CITY OF READING, BERKS COUNTY, PENNSYLVANIA  
PROPOSED POOL PIPING PLAN  
PREPARED FOR  
CITY OF READING  
PROJECT NAME  
SCHLEGEL PARK POOL

DESIGNED BY: BTH  
DRAWN BY: BTH  
CHECKED BY: PCA  
PROJECT NO.: REA-18-350  
DATE: 3/11/2020  
SCALE: AS NOTED

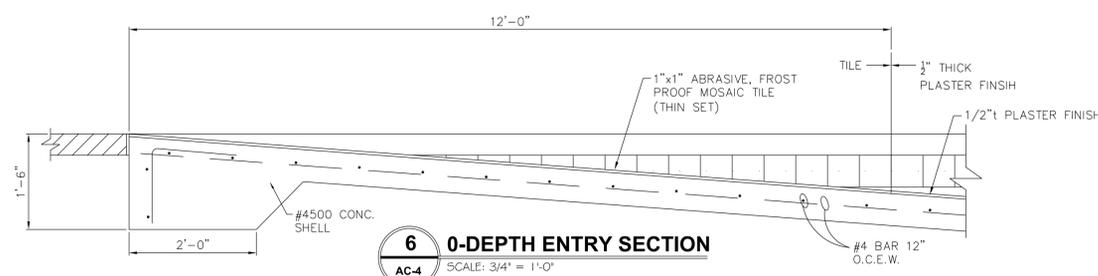
SHEET 3 OF 5

**AC-3**

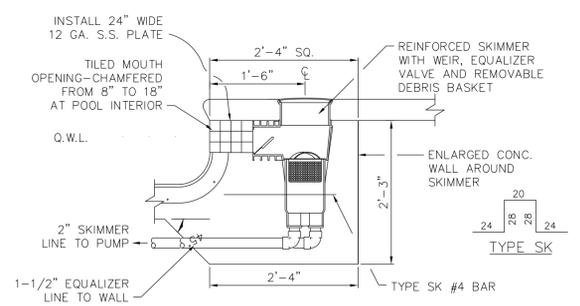
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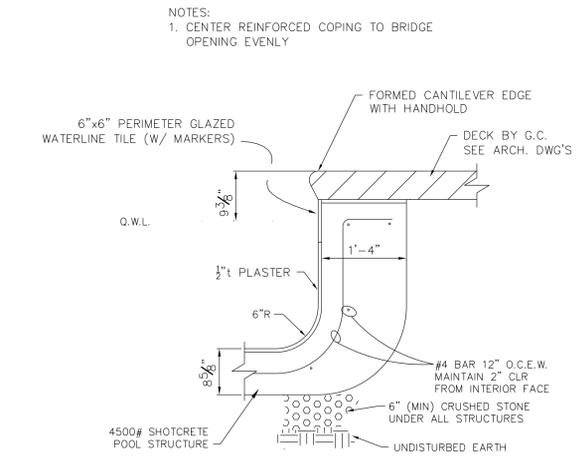
**1 PROPOSED WADING POOL LAYOUT**  
 AC-4 SCALE: 3/8" = 1'-0"



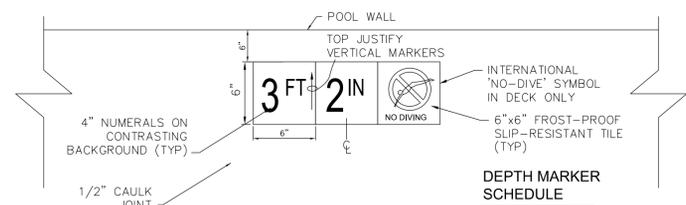
**6 0-DEPTH ENTRY SECTION**  
 AC-4 SCALE: 3/4" = 1'-0"



**3 SKIMMER SECTION DETAIL**  
 AC-4 SCALE: 3/4" = 1'-0"



**2 WALL SECTION**  
 AC-4 NO SCALE

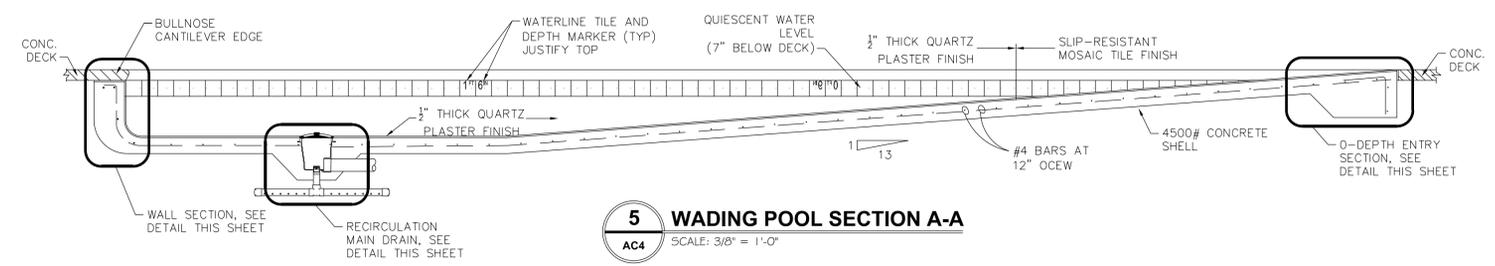


**4 DEPTH MARKER DETAIL**  
 AC-4 NO SCALE

**DEPTH MARKER SCHEDULE**

QTY	MARKER
4/0	0'-0"
2/2	0'-9"
4/4	1'-6"
1/2	2'-0"

- NOTES:
1. GROUT DEPTH MARKERS INTO COPING RECESS FORM-OUTS
  2. INSTALL GLAZED TILE VERTICAL DEPTH MARKERS IN WATERLINE TILE BAND TO CORRESPOND TO DECK MARKERS
  3. ALL MARKERS SHALL BE SLIP RESISTANT WHERE SET IN DECK
  4. DEPTH TO BE MEASURES FROM WATER LEVEL TO FLOOR A DISTANCE OF THREE FEET OFF WALL



**5 WADING POOL SECTION A-A**  
 AC-4 SCALE: 3/8" = 1'-0"

MARKS

MARKS	COMMENT	ISSUED FOR	DATE
1	ISSUED FOR BID		03/15/2020

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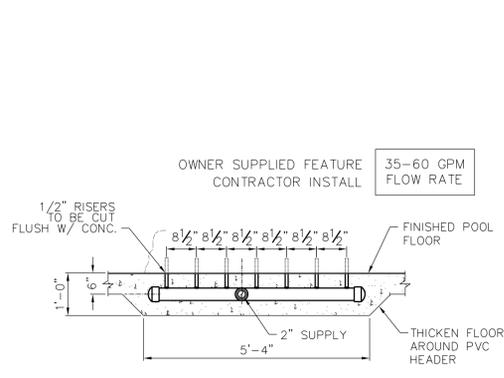
SITELINE IN  
 CITY OF READING, BERKS COUNTY, PENNSYLVANIA  
 WADING POOL PLAN  
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DESIGNED BY: BTH  
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 CHECKED BY: PCA  
 PROJECT NO.: REA-18-350  
 DATE: 3/11/2020  
 SCALE: AS NOTED

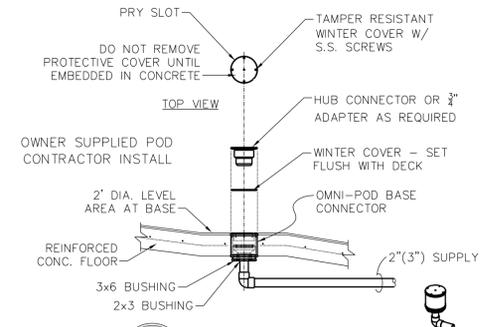
SHEET 4 OF 5

AC-4

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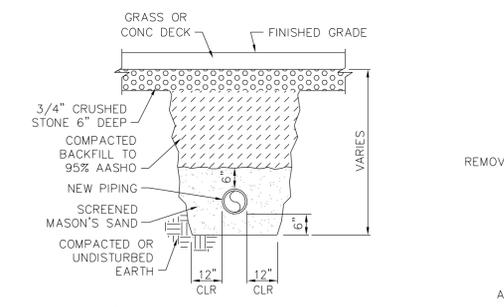
**1 POP-JET FEATURE**  
AC-5 SCALE: 1/2" = 1'-0"



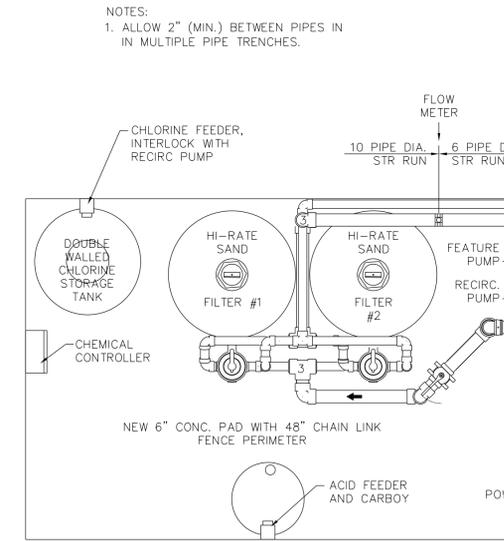
**2 DEWDROP FEATURE**  
AC-5 NO SCALE



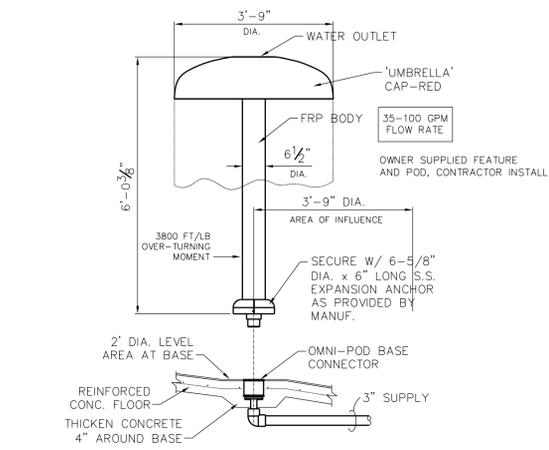
**4 OMNI-POD DETAIL**  
AC-5 NO SCALE



**8 PIPE TRENCH DETAIL**  
AC-5 NO SCALE

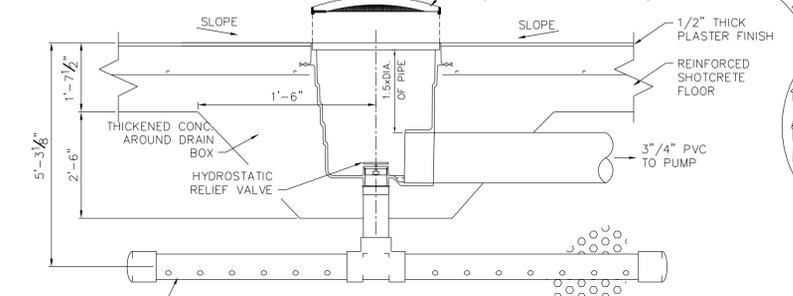


**9 WP FILTER AREA LAYOUT**  
AC-5 NO SCALE



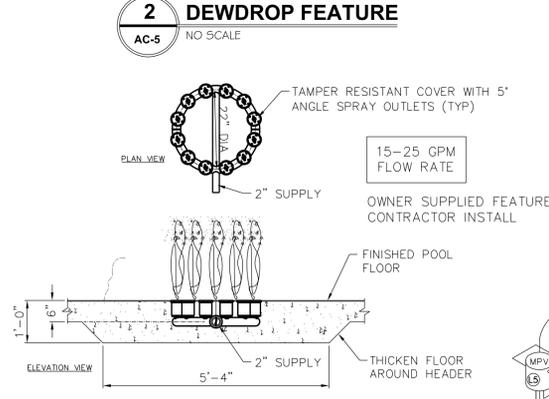
VGBA COMPLIANCE FLOW CALC'S  
EQ. = GPM / (7.48g/ct x 60 sec X 81.3/144 sf) = ft/sec

SUPPLY	QTY	FLOW GPM(ea/total)	VELOCITY ft/sec(ea/total)
FILTER	2	95/190	0.37/0.75
FEATURES	2	113/225	0.45/0.89

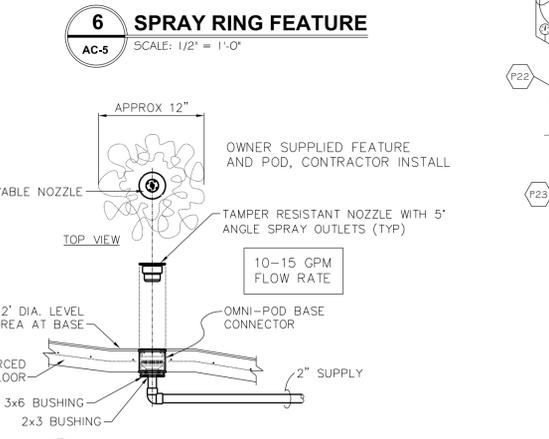


**3 W.P. MAIN DRAIN SECTION**  
AC-5 NO SCALE

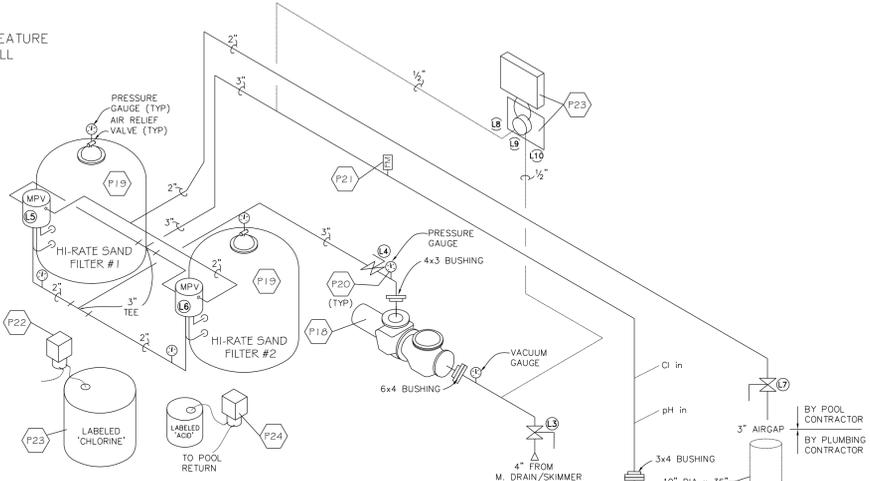
NOTES:  
1. RELIEF VALVE SHALL BE MODEL SP-1057 (1055) AS MANUFACTURED BY HAYWARD POOL PRODUCTS  
2. SLOPE FLOOR CONTINUOUSLY TO DRAINS 1/8" / FT MIN.



**6 SPRAY RING FEATURE**  
AC-5 SCALE: 1/2" = 1'-0"

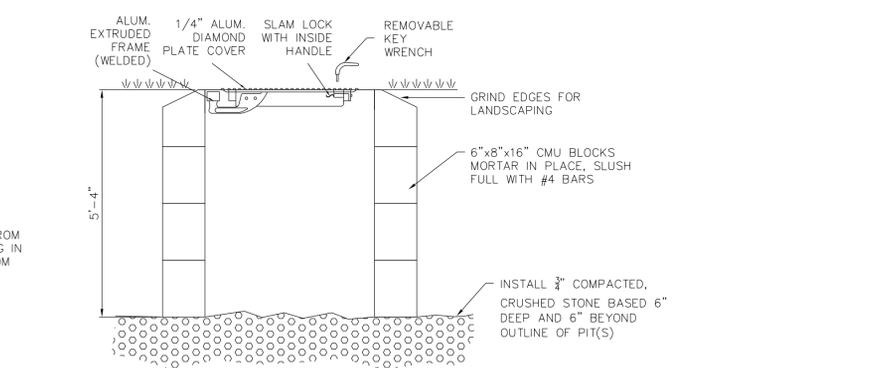


**5 POPKORN SPRAY FEATURE**  
AC-5 NO SCALE



**10 POOL HYDRAULIC SCHEMATIC**  
AC-5 NO SCALE

NOTES:  
1. ALL PIPING SHALL BE SCH. 80 PVC UNLESS OTHERWISE NOTED.  
2. PROVIDE TRU-UNION ISOLATION VALVES OR FLANGES AT ALL EQUIPMENT.  
3. ALL VALVES 3" OR LARGER SHALL BE PVC BUTTERFLY VALVES. ALL VALVES 2" OR SMALLER SHALL BE TRU-UNION PVC BALL TYPE.  
4. TAG ALL VALVES, POST VALVE CHART IN ROOM.



**7 VALVE PIT DETAIL**  
AC-5 NO SCALE

NOTES:  
1. TOP SURFACES TO BE PRIMED, PAINTED (2 COATS) EXTERIOR WHITE ENAMEL  
2. PROVIDE WITH RECESSED HASP OPTION  
3. LID TO BE HEAVY DUTY TYPE RATED FOR H-20 LOADING

TYPE	WIDTH	LENGTH	MATERIAL
KAL-3	3'-0"	3'-0"	ALUMINUM



**IN-POOL and DECK EQUIPMENT**

NO.	QTY.	CAT. NO.	LABEL	DESCRIPTION
P-1	3	PENTAIR 506308	SURFACE SKIMMER	AUTO-SKIM SERIES, 2" PORTS WITH EQUALIZER AND VGBA COMPLIANT WALL FITTING MODEL 500300
P-2	6	PENTAIR 08417-0000	FLOOR RETURN INLETS	ADJUSTABLE FLOW INLET FITTINGS, ADJUST WITH DYE TEST AS STARTUP, ENSURE EVEN FLOW THROUGHOUT
P-3a	4	LAWSON MLDFGD1212	MAIN DRAIN SUMPS	12"x12" FLUTED SUMP, ABS BODY, 3"x4" BUSHING, HYDROSTAT AND COLLECTOR TUBE
P-3b	4	LAWSON MLDSG1212	MAIN DRAIN GRATES	12"x12" ANTI-ENTRAPMENT, ANTI-VORTEX, VGBA COMPLIANT/LABELED, 81.3 Sq. In., S.S. SCREWS, WHITE
P-4	110 Sq. Ft.	STEGMEIER 9CF000	CANTILEVER DECK FORM	REMOVABLE FOAM FORM, EXTENDS 1 1/4" OUT FOR SAFETY HANDHOLD, STRIP WITHIN 3 DAYS OF POURING DECK
P-5	18	IN-LAYS INC. CCT/C6(X)10XX	DEPTH/WARN MARKERS	CERAMIC, 4" BLACK NUMERALS/WHITE BACKGROUND, SLIP RESISTANT DECK, GLOSSY WATERLINE, TOP JUSTIFY VERT.
P-6	1	PADDOCK WLC	WATER LEVEL CONTROLLER	DECKSIDE WATER LEVEL CONTROLLER IN 8" PVC CHAMBER W/ SKIMMER LID, 3/4" SLOW CLOSING SOLENOID VALVE
P-7	1	MEYCO MEYCOLITE	WINTER COVER	WOVEN POLYPROP. COVER, 3"x3' LOAD TAPE SQUARES, S.S. SPRINGS, BRONZE ANCHORS SET IN DECK, 15 YR WAR.

**IN-POOL FEATURES**

NO.	QTY.	CAT. NO.	LABEL	DESCRIPTION
P-8	1	RAIN DROP DWDP-001	DEWDROP UMBRELLA	SMALL UMBRELLA, RED CANOPY, SET ON OMNIPOD, 50-100 GPM, ADJUST FLOW IN FIELD
P-9	2	RAIN DROP POD-A001	OMNIPOD CONNECTORS	FLUSH MOUNT CONNECTORS FOR VERTICAL FEATURES, SEAL ONE UP FOR FUTURE USE - SET PLUMB
P-10	1	RAIN DROP PJJT-001	POP JET FLOOR SPRAY	LINEAR FLOOR SPRAY, 5"x8' AREA OF INFLUENCE 35-50 GPM, ADJUST FLOW IN FIELD
P-11	1	RAIN DROP MSPR-004	SPRAY RING FLOOR SPRAY	SMALL CIRCULAR FLOOR SPRAY, 6' AREA OF INFLUENCE, 15-25 GPM, ADJUST FLOW IN FIELD
P-12	2	RAIN DROP MPKJ-002	POPCORN JET FLOOR SPRAY	MINI FLOOR SPRAY, 3' DIA. AREA OF INFLUENCE, 10-15 GPM (EACH), ADJUST FLOW IN FIELD

**IN-POOL FINISH SCHEDULE**

MARK	QTY.	CAT. NO.	LABEL	SERIES	COLOR	DESCRIPTION
P-13	18	IN-LAYS INC. CCT/C6(X)10XX	DEPTH/WARN MARKERS	IN / FT	BLACK ON WHITE	6"x6", TOP JUSTIFY VERTICAL, SEE ITEM P-5 ABOVE
P-14	110 Lin. Ft.	NPTG ME-33	WATER LINE TILE	MOONBEAM	OCEAN GREEN	6"x6", MULTI-ELEMENT, GLOSSY
P-15	360 Sq. Ft.	DAL-TILE DK-05	ENTRY RAMP	KEYSTONE	WHITE and GREEN	1"x1" MIXED MOSAIC, SATIN FINISH, SLIP-RESISTANT
P-16	840 Sq. Ft.	SGM EXPOSED-AGR	PLASTER FINISH	WHITE	WHITE	1/2" THICK, IMMEDIATELY DAMPEN, NO CALCIUM CHLORIDE IN MIX
P-17	1200 Sq. Ft.	SGM EXPOSED-AGR	DIAMOND BRITE FINISH	DIAMOND BRITE	SUPER BLUE	1/2" THICK, IMMEDIATELY DAMPEN, NO CALCIUM CHLORIDE IN MIX

**POOL FILTRATION EQUIPMENT**

NO.	QTY.	CAT. NO.	LABEL	DESCRIPTION
P-18	2	PENTAIR 340019	RECIRC. PUMP	EQ-500 SERIES, 1 PH, 230 V, PLASTIC VOLUTE, SELF PRIMING, INT. STRAINER (W/ SPARE), 6"x4", NSF LISTED
P-19	2	PENTAIR 140316	HI-RATE SAND FILTER	TR 140 C, SAND FILTER, 36" DIA, FILTER AREA=7.06 SQ. FT. EACH (HI-FLOW NSF LISTED)
P-20	6	WEKSLER AA44	PRESS./COMP. GAUGES	4.5" DIA, POLYCASE, S.S. SOCKET BOURDON TUBE, 0-60 PSI (AA442PE4LW), 30"Hg-0-30 PSI (AA442CB4LW)
P-21	1	GF+SIGNET 509/515	FLOW METER	PADDLEWHEEL, 25 ma, FULL SADDLE, SET 10 PIPE DIA. STR. RUN UPSTREAM, 6 PIPE DIA. STRAIGHT RUN DOWNSTREAM
P-22	1	BLUE WHITE F-30200P	FLOW METER	IMPACT TYPE, ACRYLIC BODY, SET 10 PIPE DIA. STRAIGHT RUN UPSTREAM, 6 PIPE DN. FOR BACKWASH ONLY

**POOL DISINFECTION EQUIPMENT**

NO.	QTY.	CAT. NO.	LABEL	DESCRIPTION
P-23	1	CAT 4000	CHEMICAL CONTROLLER	LED ORP/PH DISPLAY, FLOW SENSOR
P-24	1	STENNER 85MP3	CHLORINE FEEDER PUMP	PERISTALTIC CHEMICAL FEED PUMP, SINGLE HEAD FEEDER ADJUSTABLE OUTPUT, 40 GPD, 25 PSI MAX
P-25	1	CHEMTAINER TC4152DC	CHLORINE STORAGE TANK	DOUBLE WALLED, POLY, CLOSED TOP CHLORINE STORAGE TANK, 200 GALLON, 41" DIA. x 52" HIGH
P-26	1	STENNER 45MP2	ACID FEEDER PUMP	PERISTALTIC CHEMICAL FEED PUMP, SINGLE HEAD FEEDER ADJUSTABLE OUTPUT, 10 GPD, 25 PSI MAX

**POOL GENERAL EQUIPMENT**

NO.	QTY.	CAT. NO.	LABEL	DESCRIPTION
P-27	AS REQ'D	ASAHI POOL-PRO	BUTTERFLY VALVES	PVC WAFER, BUTTERFLY VALVE, BUBBLE TIGHT, S.S. STEM AND HARDWARE, S.S. BOLT PACK, PVC FLANGES
P-28	AS REQ'D	TECHNO 5005-PVC	CHECK VALVES	PVC WAFER, CENTER SPLIT, BUBBLE TIGHT, S.S. STEM AND HARDWARE, S.S. BOLT PACK, PVC FLANGES
P-29	AS REQ'D	ASLON PVC	PIPING	ALL PIPING AND FITTINGS TO BE MOLDED, SCH. 80 PVC
P-30	2	BILCO KAL3636	VALVE PIT HATCH	ALUMINUM DIAMOND PLATE, 36"x36" COVER WITH REMOVABLE HANDLE, EPOXY PAINT EXTERIOR
P-31	1	CHEMTAINER TC4259IA	B'WASH TANK	42" DIA x 59" HIGH POLY. TANK, RUN 2" TO SEWER

**PIPE COLOR CODE CHART**

FUNCTION	COLOR	FUNCTION	COLOR	FUNCTION	COLOR
DOMESTIC WATER	DARK BLUE	MAIN DRAIN	BLACK	BACKWASH	DARK BROWN
FILTERED WATER	AQUA	PUMP SUCTION /DISCHARGE	STRIPED BLACK/OLIVE	CHLORINE	YELLOW
SKIMMER	OLIVE GREEN			NATURAL GAS	RED

MARK	COMMENT	ISSUED FOR	DATE
1			03/19/2020

**CEG CEDARVILLE**  
CIVIL ENGINEERING • ENVIRONMENTAL SERVICES  
• SURVEYING • CONSTRUCTION  
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SITING IN  
CITY OF READING, BERKS COUNTY, PENNSYLVANIA  
WADING POOL DETAILS  
CITY OF READING  
PROJECT NAME  
SCHLEGEL PARK POOL

DESIGNED BY:	BTH
DRAWN BY:	BTH
CHECKED BY:	PCA
PROJECT NO.:	REA-18-350
DATE:	3/11/2020
SCALE:	AS NOTED