Request for Proposal

Labor and Materials
February 15, 2023

2023 Hidden Creek Aqua Park Pump and Plumbing Repair

SITE LOCATION:
Hidden Creek Aqua Park
1220 Fredrickson
Highland Park, IL 60035

OPTIONAL PRE-PROPOSAL MEETING:
Friday, February 17, 2023
1220 Fredrickson
Highland Park, IL 60035

SUBMISSION DEADLINE:
February 24, 2023 1:00pm

Vic Picchietti
Park District of Highland Park
636 Ridge Road
Highland Park, IL 60035

2/14/2023

Dear Contractors:

The Park District of Highland Park is seeking proposals for contractors to provide the labor and materials for the following project: 2023 Hidden Creek Aqua Park Pump and Plumbing Repair

The RFP packet is also available on our website at http://www.pdhp.org/bids-rfps/ and specifies required qualifications, scope of work, submittal instructions and a set of proposal forms. **Please note that if you intend to submit a proposal for this project, then it is your responsibility to register with Vic Picchietti via vpicchietti@pdhp.org or (847) 579-4063.** This will identify you as a registered plan holder and therefore, you will receive any addenda that may be issued. Addenda will be sent only to those contractors that complete such registration. The contractor remains responsible for obtaining all addenda to the original specification.

An optional pre-proposal meeting will be held at Hidden Creek Aqua Park, 1220 Fredrickson, on Friday, February 17, 2023 at 10:00am>.

Proposals should be e-mailed to vpicchietti@pdhp.org.

Proposals will be received no later than Friday February 24, 2023 at 1:00pm

Questions regarding this project or the enclosed documents can be directed to Vic Picchietti at vpicchietti@pdhp.org or (847) 579-4063

Sincerely,

Vic Picchietti
Facility Maintenance Manager

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GENERAL INFORMATION

Introduction
This project will take place at the Park District of Highland Park, Hidden Creek Aqua Park. The project will consist of providing labor and materials to remove pump, motor and flange column for the Speed Slide. Rebuild pump, refurbish column and provide new motor. Re-install all materials, start up and test pump system

Intention
The District is soliciting proposals from qualified Contractors interested in this project as specified herein. The District reserves the right not to award any contract for the project.

Service to Be Provided
1. Labor and travel
2. Remove, Rebuild. Reinstall Pump
3. Remove, refurbish flange column
4. Remove, provide new motor, install motor

Examination of the Sites
A pre-proposal meeting will be held at Hidden Creek Aqua Park on Friday, February 17 at 10:00am. Each contractor is encouraged to visit the site to become fully acquainted with the facility, scope of the project, service and difficulties of providing this service or completing this project. Neither additional compensation nor relief from any obligations will be granted because of a lack of knowledge of the site(s) or the conditions under which the work will be accomplished.

Discussion of Proposals
The Park District may conduct discussions with any Contractor that submits a proposal. During the course of such discussions, the District shall not disclose any information marked confidential within any proposal and may discuss comparative pricing with one or more Contractors.

The Park District may also choose to interview Contractors during the evaluation process. Selected Contractors may be requested to provide oral presentations. Those Contractors will be notified to arrange specific times. The Park District will not be responsible for any cost of the Contractor's presentation.

Negotiations
The Park District reserves the right to negotiate specifications, terms and conditions which may be necessary or appropriate to the accomplishment of the purpose of this RFP.

After a review of the proposals, the District intends to enter into an agreement with the selected contractor. If an agreement is not finalized in a reasonable amount of time as determined by the District in its sole discretion, then the District reserves the right to negotiate with other contractors as may best serve the interests of the Park District.

Reserved Rights
The Park District reserves the right at any time and for any reason to cancel this Request for Proposals or any portion thereof, to reject any or all proposals, or to accept an alternate proposal. The District reserves the right to waive any immaterial defect in any proposal. Unless otherwise specified by the Contractor, the District has ninety (90) days from the published submission date to enter into an agreement with a Contractor. The District may seek clarification from a Contractor at any time and failure to respond promptly is cause for rejection.

Incurred Costs
Park District of Highland Park will not be liable, under any circumstance, for any costs incurred by Contractors in replying to this RFP.

Award
A Contractor to whom an offer is made shall be required to enter into a written contractual agreement with the District in a form approved by legal counsel for the Park District. This RFP and the proposal, or any part thereof, may be incorporated into and made part of the final written agreement. The District reserves the right to negotiate the terms and conditions of the agreement with the selected Contractor. Payment by the District may be by credit card.

The failure of the successful Contractor to enter into a Contract within ten (10) calendar days after the Notice of Award or within such extended period as the Owner may grant shall constitute a default, and the Owner may either award the Contract to the next responsible, responsive Contractor or re-advertise for proposals. A charge against the defaulting Contractor may be made for the difference between the amount of the proposal and the amount for which a contract for the work is subsequently executed.

Taxes
Park District of Highland Park is not subject to Federal Excise Tax and is exempt from state and local taxes.

Equal Employment Opportunity
Equal Employment Opportunity Clause, Section 6.1 of the Illinois Department of Human Rights Rules and Regulations shall be a material term of this agreement.

Sustainability
The Park District of Highland Park is committed to sustainable practices that benefit our environment and the health and safety of our customers. The Contractor agrees to work with Park District staff if applicable on sustainable project elements and materials.

Additional Information
Should the Contractor require additional information about this proposal, please contact Vic Picchietti either by e-mail, vpicchietti@pdhp.org or by phone 847-579-4063, no less than five (5) days prior to the proposal opening date. ANY and ALL changes to these specifications are valid only if they are included by written addendum to all Contractors. No interpretation of the meaning of the plans, specifications or other documents will be made orally. Failure of any Contractor to receive any such addendum or interpretation shall not relieve the Contractor from

obligation under this proposal as submitted. All addenda so issued shall become part of the proposal documents. Failure to request an interpretation constitutes a waiver to later claim that ambiguities or misunderstandings caused a Contractor to improperly submit a proposal.

TERMS AND CONDITIONS

Contractor Qualifications
All Contractors must be engaged in the type of work or services as outlined in these specifications and meet the following qualifications: At least 5 years of experience within the field of pump repair, replacement and plumbing. The Park District of Highland Park reserves the right to check references to ensure that competent persons will be utilized in the performance of the agreement.

As part of the proposal, submit a completed qualifications form (attached), indicating your proposed team's experience with similar work.

Items to be Submitted
Contractors shall submit:

- Proposal Form
- References
- Contractor Profile and Qualifications Form
- Contractor's Certification of Eligibility Form

Contractors lacking these completed forms may not be considered for award.

We encourage contractors to include additional documentation supporting contractor's performance record, financial resources, experience, and reliability to execute this agreement as described herein. Any and all exceptions to these RFP terms and specifications must be clearly documented.

Evaluation Criteria
The Park District will review proposals to select that proposal which, in the sole discretion of the Park District, is determined to be in its best interests. The Park District may still, thereafter, choose not to award any contract or to award a negotiated and modified proposal.

Timely Submissions
The receipt of proposals will cease at the date and time set forth above. Proposals received after the scheduled date and time likely will not be considered

Responsibility and Default
The contractor shall be required to assume responsibility for fulfillment of all items listed in this Request for Proposals. The successful Contractor shall be considered the sole point of contact for purposes of this contract agreement.

Change in Status
The contractor shall notify the Park District of Highland Park immediately of any change in its status resulting from any of the following:

- Contractor is acquired by another party
- Contractor becomes insolvent
- Contractor, voluntary or by operation law, becomes subject to the provisions of any chapter of the Bankruptcy Act
- Contractor ceases to conduct its operations in normal course of business

The District shall have the option to terminate its agreement with the contractor immediately on written notice based on any such change in status.

Indemnification
To the fullest extent permitted by law, to waive any and all rights of contribution against the Park District and to indemnify and hold harmless the Park District and its officers, officials, employees, volunteers and agents from and against all claims, damages, losses and expenses, including, but not limited to, legal fees (attorney's and paralegal's fees, expert fees and court costs) arising out of or resulting from the performance of the Contractor's work, provided that any such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or injury to or destruction of property, other than the work itself, including the loss of use resulting therefrom, or is attributable to misuse or improper use of trademark or copyright protected material or otherwise protected intellectual property, to the extent it is caused in whole or in part by any wrongful or negligent act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable. Such obligation shall not be construed to negate, abridge or otherwise reduce any other right to indemnity which the Park District would otherwise have. Contractor shall similarly, protect, indemnify and hold and save harmless, City, its officers, officials, employee, volunteers and agents against and from any and all claims, costs, causes, actions and expenses, including, but not limited to, legal fees, incurred by reason of Contractor's breach of any of its obligations under, or Contractor's default of any provisions of the Contract. The indemnification obligations under this paragraph shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any subcontractor under Workers' Compensation or Disability Benefit Acts or Employee Benefit Acts.

Insurance Requirements
Unless otherwise agreed to by the Park District, the successful contractor shall be required to keep in force, to the satisfaction of the Owner, at all times during the performance of any work referred to above, Workers Compensation and Employer's Liability Insurance, Commercial General Liability Insurance, and Automobile Insurance in at least the type and amounts as follows:

1. Workers' Compensation:
a. State: Statutory
b. Applicable Federal (e.g., Longshoremen's): Statutory
c. Employer's Liability
   $1,000,000.00 Per Accident
   $1,000,000.00 Disease, Policy Limit
   $1,000,000.00 Disease, Each Employee

2. Commercial General Liability:
   1. $2,000,000.00 General Aggregate
   2. $1,000,000.00 Products Completed Operations Aggregate
   3. $1,000,000.00 Personal and Advertising Injury
   4. $1,000,000.00 Each Occurrence
   5. $ 50,000.00 Fire Damage (any one fire)
   6. $ 5,000.00 Medical Expense (any one person)

3. Business Automobile Liability (including owned, non-owned and hired vehicles):
   a. Bodily Injury:
      $1,000,000.00 Per Person
      $1,000,000.00 Per Accident
   b. Property Damage:
      $1,000,000.00 Per Occurrence

4. Umbrella Excess Liability:
   $2,000,000.00 over Primary Insurance

Prior to beginning work, the contractor shall have to furnish the Owner with a certificate(s) of insurance and applicable policy endorsement(s), executed by a duly authorized representative of each insurer, showing compliance with the insurance requirements set forth above.

Sexual Harassment Policy
Pursuant to Section 2-105 of the Illinois Human Rights Act (775 ILCS 5/1-101 et. seq.) ("Act"), all Contractors to this agreement must have, prior to awarding this agreement, in effect and in force a **written** sexual harassment policy.

Compliance with all Laws
Contractor shall comply with all applicable laws, regulations, and rules promulgated by any Federal, State, County, Municipal and or other governmental unit or regulatory body now in

effect during the performance of the work. By way of example, the following are included within the scope of the laws, regulations and rules referred to in this paragraph, but in no way to operate as a limitation on the laws, regulations and rules with which Contractor must comply, are all forms of Workers Compensation Laws, all terms of the Equal Employment Opportunity Clause of the Illinois Fair Employment Practices Commission, the Illinois Preference Act, the Social Security Act, the Substance Abuse Prevention on Public Works Act, Statutes relating to contracts let by units of government, all applicable Civil Rights and Anti-Discrimination Laws and Regulations, Americans with Disabilities Act, and traffic and public utility regulations. Contractor shall also furnish without charge any affidavit or Certificate in connection with the work covered by this agreement as required by law.

Prevailing Wage and Certified Payroll

Contractor agrees to pay and require every Subcontractor to pay prevailing wages as established by the Illinois Department of Labor for each craft or type of work needed to execute the contract in accordance with 820 ILCS 130/.01 et seq. The Illinois Department of Labor publishes the prevailing wage rates on its website at: https://www.illinois.gov/idol/Laws-Rules/CONMED/Pages/Rates.aspx CONTRACTOR is advised that the Department revises the prevailing wage rates and the CONTRACTOR has an obligation to check the Department's web site for revisions. The CONTRACTOR shall prominently post the current schedule of prevailing wages at the Contract site and shall notify immediately in writing all of its Subcontractors, of all changes in the schedule of prevailing wages. Any increases in costs to the CONTRACTOR due to changes in the prevailing rate of wage during the terms of any contract shall be at the expense of the CONTRACTOR and not at the expense of the Owner. The change order shall be computed using the prevailing wage rates applicable at the time the change order work is scheduled to be performed. The CONTRACTOR shall be solely responsible to maintain accurate records as required by the prevailing wage statute and to obtain and submit all such certified records to the Illinois Department of Labor Certified Transcript of Payroll Portal at https://www2.illinois.gov/idol/Laws-Rules/CONMED/Pages/CertifiedTranscriptOfPayroll.aspx no later than the 15th of each calendar month following a month in which construction on the project has occurred as required by Statute. CONTRACTOR shall furnish AGENCY confirmation that certified payroll was submitted. In lieu of certified payroll, CONTRACTOR shall submit a letter setting forth the basis upon which CONTRACTOR has concluded the Act does not apply. The CONTRACTOR shall be solely liable for paying the difference between prevailing wages and any wages actually received by laborers, workmen and/or mechanics engaged in the Work and in every way defend and indemnify the AGENCY against any claims arising under or related to the payment of wages in accordance with the Prevailing Wage Act.

Special Conditions

Contractor shall familiarize himself with all of the agreement documents as listed in the table of contents and he shall be responsible for all the material covered in same. No allowances will be made for information overlooked or for negligence on the part of the Contractor for not familiarizing himself with site conditions. The Contractor's signature on the proposal shall be the Owner's guarantee that the Contractor has met these restrictions.

Signature and Legibility
The prices for work and the names, addresses, and signatures of the Contractors shall be clearly and legibly written. Signatures shall be signed in the space provided and in compliance with all legal requirements.

Schedule

Request for Proposals Released	February 15
Optional Pre-Proposal Meeting	February 17 at 10:00am
Proposals Due No Later Than	February 24 at 1:00pm
Anticipated Contract Award Date	February 28
Anticipated Start of Work	March 1
Project Completion Date	May 12

PROPOSAL FORM
(Page 1 of 2)

TO: Park District of Highland Park
636 Ridge Road
Highland Park, IL 60035

FROM: _____
Company

_____
Street Address

_____
City, State, Zip

_____
Phone

FOR: 2023 Hidden Creek Aqua Park Pump and Plumbing Repair

TOTAL BASE PROPOSAL $_____

Receipt of Addenda: The receipt of the following addenda is hereby acknowledged:

Addendum No._____, Dated_____

Addendum No._____, Dated_____

PROPOSAL FORM
(Page 2 of 2)

SUBCONTRACTORS: List Name, Address, Phone and Work Assignment

1. _____
_____
_____

2. _____
_____
_____

3. _____
_____
_____

Pursuant to and in compliance with the General Information, Terms and Conditions, Scope of Work, the undersigned agrees to supply all materials/perform all work in accordance with these contract documents for the prices and/or amounts specified herein. All amounts shall reflect the contractor's complete and thorough understanding of conditions which might affect the proposal and any and all provisions, restrictions and requirements of these contract documents.

The District reserves the right to accept any part, or all of any proposal, and to reject any and all or parts of any and all proposal. Any proposal which contains items not specified, or which does not complete all the items scheduled for proposal, shall be considered informal and may be rejected on this basis.

BY: _____
Name and Title of Authorized Agent

_____
Authorized Signature

_____
Date

REFERENCES

Contractor shall include at least three (3) references with which the Contractor has completed similar work of approximate magnitude required under this contract.

Project Name _____
Project Location _____
Contact Person _____
Telephone Number/E-Mail _____
Project Completion Date _____

Project Name _____
Project Location _____
Contact Person _____
Telephone Number/E-Mail _____
Project Completion Date _____

Project Name _____
Project Location _____
Contact Person _____
Telephone Number/E-Mail _____
Project Completion Date _____

Project Name _____
Project Location _____
Contact Person _____
Telephone Number/E-Mail _____
Project Completion Date _____

Project Name _____
Project Location _____
Contact Person _____
Telephone Number/E-Mail _____
Project Completion Date _____

CONTRACTOR PROFILE AND QUALIFICATIONS

(Page 1 of 2)

Name _____
Address _____
City, State, Zip Code _____
Contact Person _____
Telephone Number _____ E-Mail _____

# of Employees _____ Annual Sales # _____

Contractor's organization has been in business under its present business name for ____ years.

Contractor's organization has had experience in work comparable with that required under the proposed contract:

as a prime contractor _____ years;
as a subcontractor _____ years.

The following Contractor's employees will be involved with the proposed contract:

Name _____
Position _____
Years of Experience _____
Responsibility/Task _____

Name _____
Position _____
Years of Experience _____
Responsibility/Task _____

Name _____
Position _____
Years of Experience _____
Responsibility/Task _____

Contractor may attach additional project detail to demonstrate ability to successfully complete work comparable with that required under the proposed contract.

CONTRACTOR PROFILE AND QUALIFICATIONS

(Page 2 of 2)

1. Within the past ten (10) years, has your firm, any officer or other individual employed by your firm, been the subject of any administrative or judicial proceeding for alleged violations of any law, or any rule or regulation of any governmental body. If yes, please provide a detailed explanation of the proceeding, including the nature of the charge or claim, the disposition of the matter and the specific individuals/entities involved.

   _____

   _____

   _____

2. Within the past ten (10) years, has your firm been the subject of any other type of claim, including by way of example and not limitation, for breach of contract? If yes, please provide a detailed explanation of the proceeding, including the caption, claimant, court or other dispute forum, nature and disposition of the claim.

   _____

   _____

   _____

3. Has your firm ever been terminated prior to completion of its services from any project? If yes, please provide a detailed explanation, including the identities of all entities and individuals involved, the nature of the services which your firm was to provide, the individuals who were assigned to prove the services and the reason given for the termination

   _____

   _____

   _____

CONTRACTOR'S CERTIFICATION OF ELIGIBILITY

In Compliance 720 ILCS 5/33E-11:

_____,a(n) _____
Print name of Contractor Individual, Partnership, Corporation

as part of his bid or proposal on the above referenced Contract, hereby certifies that the Contractor is not barred from bidding on the above referenced contract or entering into a contract with the Park District of Highland Park as a result of a violation of either Section 33E-3 Bid-rigging or 33E-4 Bid-stating of Article 33E of the Illinois Criminal Code, 720 ILCS 5/33E-1, *et. seq.*, as amended.

_____
Date

Contractor

By:_____

Its:_____
Title

STATE OF ILLINOIS)
) SS
COUNTY OF)

I, the undersigned, a notary public in and for the State and County aforesaid, hereby certify that appeared before me this day in person and, being first duly sworn on oath, acknowledged that he/she is authorized to act on behalf of Contractor, and that he/she executed the foregoing certificate as his/her free act and deed and as the act and deed of Contractor.

DATED: , 2023
Notary Public_____

[Notary Seal]

SAMPLE CONTRACT

The Park District of Highland Park executes an Independent Contractor Agreement for all work. A sample of the **Independent Contractor Agreement** is provided on the following pages.

INDEPENDENT CONTRACTOR AGREEMENT

THIS AGREEMENT entered into by and between <NAME OF CONTRACTOR> (hereafter "CONTRACTOR") and the PARK DISTRICT OF HIGHLAND PARK (hereafter "AGENCY").

WHEREAS, CONTRACTOR will be performing services and work for AGENCY in accordance with the following: Request for Proposal <NAME OF PROJECT> dated <DATE (long form i.e. July, 25, 2011)>; the documents referenced therein; CONTRACTOR's Proposal in response to the Request for Proposal for <NAME OF SERVICES REQUESTED> (hereafter "Proposal"); which is attached hereto and incorporated herein as **Exhibit A;**

WHEREAS, Exhibit A, together with this document, collectively comprise the agreement of the parties and are hereafter referred to as the "Agreement"; and

WHEREAS, CONTRACTOR may have subcontractors, material suppliers and one or more employees engaged in the performance of said work; and

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained, and other good and valuable consideration received and to be received, the CONTRACTOR hereby agrees:

1. To comply with all applicable laws, regulations, and rules promulgated by any Federal, State, County, Municipal and or other governmental unit or regulatory body now in effect during the performance of the work. By way of example, the following are included within the scope of the laws, regulations and rules referred to in this paragraph, but in no way to operate as a limitation on the laws, regulations and rules with which CONTRACTOR must comply, are all forms of Workers Compensation Laws, all terms of the Equal Employment Opportunity Clause of the Illinois Fair Employment Practices Commission, the Illinois Preference Act, the Social Security Act, Statutes relating to contracts let by units of government, all applicable Civil Rights and Anti-Discrimination Laws and Regulations, and traffic and public utility regulations.

2. To the fullest extent permitted by law, to waive any and all rights of contribution against AGENCY and to indemnify and hold harmless AGENCY and its officers, officials, employees, volunteers and agents from and against all claims, damages, losses and expenses, including, but not limited to, legal fees (attorney's and paralegal's fees, expert fees and court costs) arising out of or resulting from the performance of the CONTRACTOR's work, provided that any such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or injury to or destruction of property, other than the work itself, including the loss of use resulting therefrom, or is attributable to misuse or improper use of trademark or copyright protected material or otherwise protected intellectual property, to the extent it is caused in whole or in part by any wrongful or negligent act or omission of the CONTRACTOR, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable. Such obligation shall not be construed to negate, abridge or otherwise reduce any other right to indemnity which AGENCY would otherwise have. CONTRACTOR shall similarly, protect, indemnify and hold and save harmless, AGENCY, its officers, officials, employee, volunteers and agents against and from any and all claims, costs, causes, actions and expenses, including, but not limited to, legal fees, incurred

by reason of CONTRACTOR's breach of any of its obligations under, or CONTRACTOR's default of any provisions of the Contract. The indemnification obligations under this paragraph shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for CONTRACTOR or any subcontractor under Workers' Compensation or Disability Benefit Acts or Employee Benefit Acts.

3. To keep in force, to the satisfaction of AGENCY, at all times during the performance of any work referred to above, Workers Compensation and Employer's Liability Insurance, Commercial General Liability Insurance, and Automobile Insurance in at least the type and amounts as follows:
   a. Workers' Compensation:.
      i. State: Statutory
      ii. Applicable Federal (e.g., Longshoremen's): Statutory
      iii. Employer's Liability
         $1,000,000.00 Per Accident
         $1,000,000.00 Disease, Policy Limit
         $1,000,000.00 Disease, Each Employee
   b. Commercial General Liability:
      $2,000,000.00 General Aggregate
      $1,000,000.00 Products Completed Operations Aggregate
      $1,000,000.00 Personal and Advertising Injury
      $1,000,000.00 Each Occurrence
      $ 50,000.00 Fire Damage (any one fire)
      $ 5,000.00 Medical Expense (any one person)
   c. Business Automobile Liability (including owned, non-owned and hired vehicles):
      i. Bodily Injury:
         $1,000,000.00 Per Person
         $1,000,000.00 Per Accident
      ii. Property Damage
         $1,000,000.00 Per Occurrence
      iii. Umbrella Excess Liability:
         $2,000,000.00 over Primary Insurance

4. To have all policies of insurance purchased or maintained in fulfillment hereof name AGENCY as an additional insured thereunder and the CONTRACTOR shall provide AGENCY with Certificates of Insurance and applicable policy endorsement(s), executed by a duly authorized representative of each insurer, showing compliance with the insurance requirements set forth above. No such policy of insurance shall have a deductible or self-insurance retention amount in excess of $5,000.00 per occurrence. All insurance shall be written on an "occurrence" basis rather than a "claims-made" basis. Failure of AGENCY to demand any certificate, endorsement or other evidence of full compliance with these insurance requirements or failure of AGENCY to identify a deficiency from evidence that is provided shall not be construed as a waiver of CONTRACTOR's obligation to maintain such insurance. The CONTRACTOR agrees that the obligation to provide the insurance required by these documents is solely its responsibility and that this is a requirement which cannot be waived by any conduct, action, inaction or omission by the AGENCY. Upon request, the CONTRACTOR will provide copies of any or all policies of insurance maintained in fulfillment hereof.

AGENCY shall have the right, but not the obligation, of prohibiting CONTRACTOR or any subcontractor from entering the project site until such certificates or other evidence that insurance has been placed in complete compliance with these requirements is received and approved by AGENCY.

Failure to maintain the required insurance may result in termination of this Contract at AGENCY's option.

5. CONTRACTOR shall cause each consultant employed by CONTRACTOR to purchase and maintain insurance of the type specified above. When requested by the AGENCY, CONTRACTOR shall furnish copies of certificates of insurance evidencing coverage for each consultant.

6. For any claims related to this contract, CONTRACTOR insurance coverage shall be primary insurance as respects the AGENCY, its officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by the AGENCY, its officers, officials, employees, or volunteers shall be excess of the CONTRACTOR insurance and shall not contribute with it.

7. Nothing contained in this contract is to be construed as limiting the liability of the CONTRACTOR, the liability of any Subcontractor or any tier or either of their respective insurance carriers. The AGENCY does not, in any way, represent that the coverages or limits of insurance specified is sufficient or adequate to protect the AGENCY, or CONTRACTOR, but are merely minimums. The obligations of CONTRACTOR to purchase insurance shall not, in any way, limit its obligations to the AGENCY in the event that the AGENCY should suffer an injury or loss in excess of the amount recoverable through insurance, or any loss or portion of a loss which is not covered by FIRM's insurance.

8. CONTRACTOR shall maintain commercial general liability (CGL) and commercial umbrella liability insurance with a limit of not less than limits outlined herein for at least three years following substantial completion of the work.

9. All insurance provided by CONTRACTOR shall be placed with insurers with a current A.M. Best's rating of no less than A: VII using the most recent edition of the A.M. Best's Key Rating Guide. If the Best's rating is less than A VII or a Best's rating is not obtained, AGENCY has the right to reject insurance written by an insurer it deems unacceptable.

10. All certificates shall provide for 30 days written notice to owner prior to the cancellation or material change of any insurance referred to therein written notice to AGENCY shall be certified mail, return receipt requested.

11. AGENCY reserves the right to modify these requirements herein, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other special circumstance.

12. CONTRACTOR hereby grants to AGENCY a waiver of any right to subrogation which any insurer of said CONTRACTOR may acquire against the AGENCY by virtue of the payment of

any loss under such insurance. CONTRACTOR agrees to obtain any endorsement that may be necessary to affect this waiver of subrogation, but this provision applies regardless of whether or not the AGENCY has received a waiver of subrogation endorsement from the insurer.

13. CONTRACTOR agrees to furnish any affidavit or Certificate in connection with the work covered by this agreement as required by law.

14. AGENCY may terminate this Agreement for cause upon 24 hours written notice of breach to CONTRACTOR and for convenience and without cause upon not less than seven days' written notice to CONTRACTOR. In the event of termination for other than cause, CONTRACTOR shall be compensated for services performed prior to termination (applying a pro-rata apportionment to the anticipated schedule of services) together with Reimbursable Expenses then due.

15. To the extent that the Prevailing Wage Act applies, CONTRACTOR agrees to pay and require every Subcontractor to pay prevailing wages as established by the Illinois Department of Labor for each craft or type of work needed to execute the contract in accordance with 820 ILCS 130/.01 et seq. The Illinois Department of Labor publishes the prevailing wage rates on its website at: https://www.illinois.gov/idol/Laws-Rules/CONMED/Pages/Rates.aspx CONTRACTOR is advised that the Department revises the prevailing wage rates and the CONTRACTOR has an obligation to check the Department's web site for revisions. The CONTRACTOR shall prominently post the current schedule of prevailing wages at the Contract site and shall notify immediately in writing all of its Subcontractors, of all changes in the schedule of prevailing wages. Any increases in costs to the CONTRACTOR due to changes in the prevailing rate of wage during the terms of any contract shall be at the expense of the CONTRACTOR and not at the expense of the Owner. The change order shall be computed using the prevailing wage rates applicable at the time the change order work is scheduled to be performed. The CONTRACTOR shall be solely responsible to maintain accurate records as required by the prevailing wage statute and to obtain and submit all such certified records to the Illinois Department of Labor Certified Transcript of Payroll Portal at https://www2.illinois.gov/idol/Laws-Rules/CONMED/Pages/CertifiedTranscriptOfPayroll.aspx as required by Statute. CONTRACTOR shall furnish AGENCY confirmation that certified payroll was submitted. In lieu of certified payroll, CONTRACTOR shall submit a letter setting forth the basis upon which CONTRACTOR has concluded the Act does not apply. The CONTRACTOR shall be solely liable for paying the difference between prevailing wages and any wages actually received by laborers, workmen and/or mechanics engaged in the Work and in every way defend and indemnify the AGENCY against any claims arising under or related to the payment of wages in accordance with the Prevailing Wage Act.

16. The failure of the successful Bidder to enter into a Contract within ten (10) days after the Notice of Award or within such extended period as the AGNECY may grant shall constitute a default, and the AGENCY may either award the Contract to the next responsible, responsive Bidder or re-advertise for bids. A charge against the defaulting Bidder may be made for the difference between the amount of the bid and the amount for which a contract for the work is subsequently executed.

17. CONTRACTOR agrees to maintain, without charge to the AGENCY, all records and documents

for projects of the AGENCY in compliance with the Freedom of Information Act, 5 ILCS 140/1 et seq. In addition, CONTRACTOR shall produce records which are responsive to a request received by the AGENCY under the Freedom of Information Act so that the Owner may provide records to those requesting them within the time frames required. If additional time is necessary to compile records in response to a request, then CONTRACTOR shall so notify the AGENCY and if possible, the AGENCY shall request an extension so as to comply with the Act. In the event that the AGENCY is found to have not complied with the Freedom of Information Act due to CONTRACTOR's failure to produce documents or otherwise appropriately respond to a request under the Act, then CONTRACTOR shall indemnify and hold the AGENCY harmless, and pay all amounts determined to be due including but not limited to fines, costs, attorneys' fees and penalties.

IT IS MUTUALLY UNDERSTOOD AND AGREED that the CONTRACTOR shall have the full control of the ways and means of performing the work referred to above and that the CONTRACTOR or its employees, representatives or subcontractors are in no sense employees of the AGENCY, it being specifically agreed that the CONTRACTOR bears the relationship of an independent contractor to the AGENCY.

This agreement shall be in full force and effect from the _____ day of _____, 20_____ until such time as it is terminated by the AGENCY.

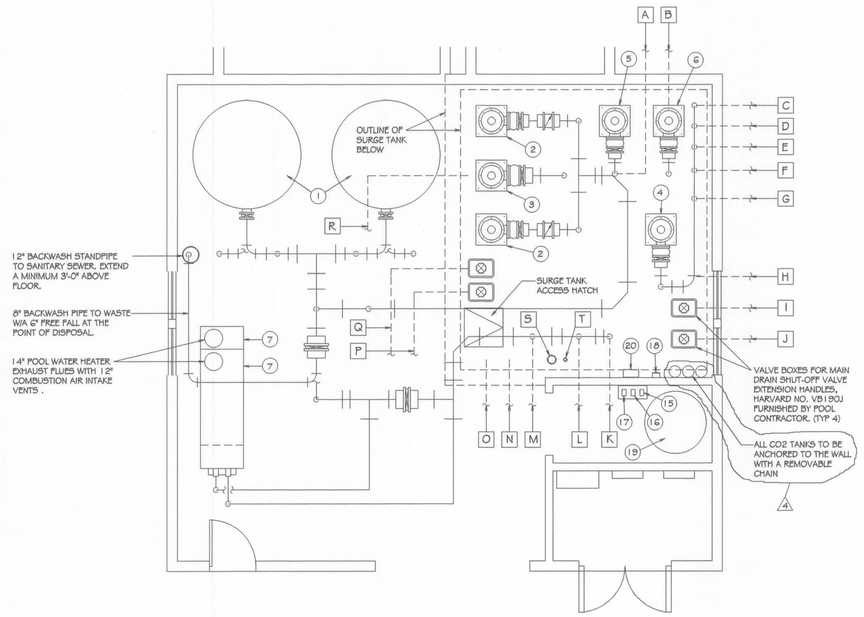
PARK DISTRICT OF HIGHLAND PARK	<NAME OF CONTRACTOR>
_____	_____
Print Name	Print Name
_____	_____
Signature	Signature
_____	_____
Title Date	Title Date

List of Drawings

No.	Title	Date
1	Hidden Creek Drawing SP-6	26 June 1996
2	Filtration Renovation	14 Feb 2020

Pump is identified as #5 on Document SP-6

Pump is identified as #4 in Filtration Renovation set

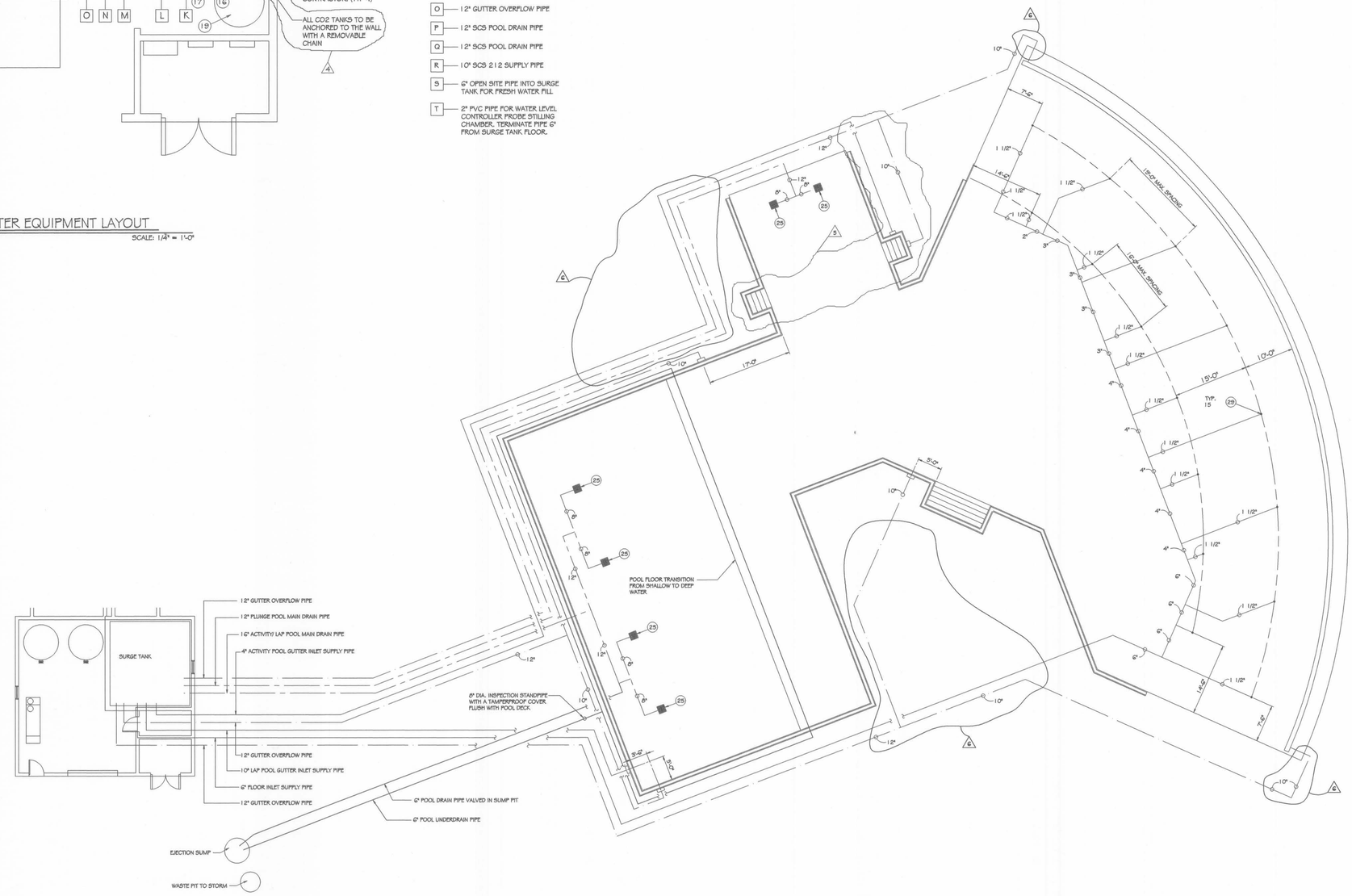


1 / SP-6 FILTER EQUIPMENT LAYOUT

SCALE: 1/4" = 1'-0"

PIPE LEGEND

- A — 8" SPEED SLIDE SUPPLY PIPE
- B — 8" BODY FLUME SUPPLY PIPE
- C — 6" DROP SLIDE SUPPLY PIPE
- D — 3" CHILDRENS SLIDE SUPPLY PIPE
- E — 3" DECK SPRAY SUPPLY PIPE
- F — 4" GEYSER SUPPLY PIPE
- G — 4" POOLS AND FALLS SUPPLY PIPE
- H — 12" GUTTER OVERFLOW PIPE
- I — 12" PLUNGE POOL MAIN DRAIN PIPE
- J — 16" ACTIVITY / LAP POOL MAIN DRAIN PIPE
- K — 4" ACTIVITY POOL GUTTER INLET SUPPLY PIPE
- L — 10" LAP POOL GUTTER INLET SUPPLY PIPE
- M — 6" FLOOR INLET SUPPLY PIPE
- N — 12" GUTTER OVERFLOW PIPE
- O — 12" GUTTER OVERFLOW PIPE
- P — 12" SCS POOL DRAIN PIPE
- Q — 12" SCS POOL DRAIN PIPE
- R — 10" SCS 212 SUPPLY PIPE
- S — 6" OPEN SITE PIPE INTO SURGE TANK FOR FRESH WATER FILL
- T — 2" PVC PIPE FOR WATER LEVEL CONTROLLER PROBE STILLING CHAMBER. TERMINATE PIPE 6" FROM SURGE TANK FLOOR.



2 / SP-6 FILTRATION PLUMBING PLAN

SCALE: 1" = 10'-0"

W.A.T.E.R. INC.
World Aquatic Technology Equipment Resource, Inc.
"our ideas hold water"
300 East Industrial Lane, Wheeling, IL 60090
Phone (708) 537-2000 Fax (708) 537-2004

CITY OF HIGHLAND PARK/ PARK DISTRICT OF HIGHLAND PARK MANOR WATER PARK CENTRAL AVENUE AT BEVERLY PLACE HIGHLAND PARK, IL 60035

waa no	96007
date	26 JUNE 1996
drawn	BS
checked	JML
revised	
1 FIELD ORDER 3	9-25-96
2 FIELD ORDER 4	10-7-96
3 TANK ADDITION	2-28-97
4 AS-BUILT LEVEL	8-22-97

williams/associates/architects, ltd.
architects
planners
210 north hale/wheaton/illinois 60187/(708) 221-1212

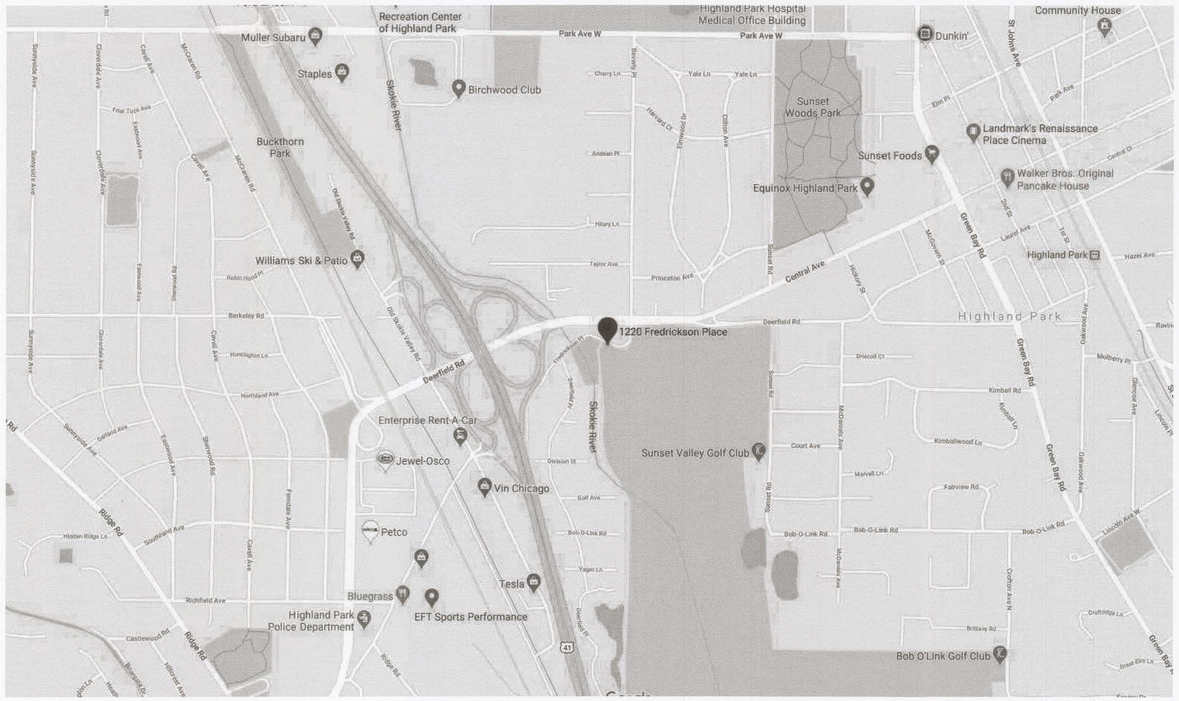
SP-6

SHEET TITLE

PARK DISTRICT OF HIGHLAND PARK FILTRATION RENOVATION

1220 FREDRICKSON PLACE HIGHLAND PARK, IL 60035

PROJECT LOCATION



DRAWING LIST:

G-1	SITE LOCATION & INDEX SHEET
E1.1	ELECTRICAL POWER & LIGHTING DEMOLITION PLAN
E1.2	POWER AND LIGHTING DEMOLITION PLAN
E1.3	BONDING AND GROUNDING PLAN
E1.4	GENERAL NOTES AND SYMBOL LIST
SP-1	DEMOLITION FILTER ROOM LAYOUT, SURGE TANK LAYOUT, POOL DATA AND NOTES
SP-2	NEW FILTER ROOM LAYOUT, SURGE TANK LAYOUT, EQUIPMENT LIST AND NOTES
SP-3	DETAILS
SP-4	FILTRATION DIAGRAM
SP-5	EXISTING PUMP CURVES AND VGB NOTES
SP-6	SPECIFICATIONS

APPROVED
Approval # 52-2020
Date Issued 4/23/20
Reviewed By CLS
State of Illinois
DEPT. OF PUBLIC HEALTH
DIV. OF ENVIRONMENTAL HEALTH

MARK O. VENTRELLI 062-050025 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS
EXPIRES 11/30/21 SIGNED 2/14/20
MARK O. VENTRELLI, P.E. # 062-050025

MY SEAL AND SIGNATURE SHALL ENCOMPASS DRAWINGS E1.1 THRU E1.4 AND SP-1 THRU SP-6.

AQUATIC \ CIVIL \ MECHANICAL \ ELECTRICAL \ PLUMBING \ TELECOMMUNICATION \ STRUCTURAL \ ACCESSIBILITY CONSULTING \ DESIGN & PROGRAM MANAGEMENT \ LAND SURVEY

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IL: License No. 184.007370-0015 Expires: 04.30.2021

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Engineering • Design • Consulting

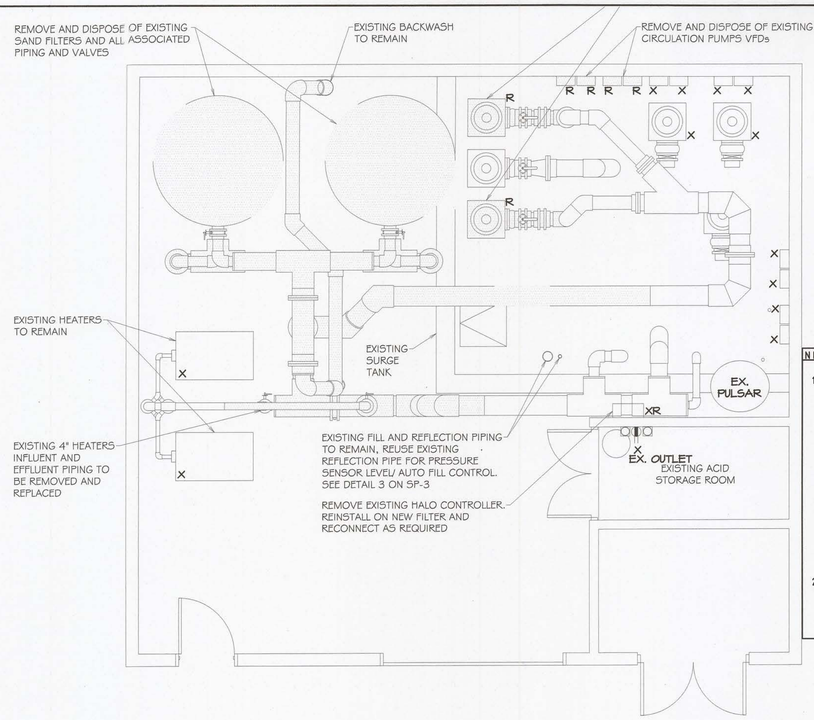
PARK DISTRICT OF HIGHLAND PARK - HIDDEN CREEK
FILTRATION SYSTEM RENOVATION
1220 FREDRICKSON PLACE
HIGHLAND PARK, IL 60035

ISSUE

TO	DATE
Issue for Bid/Permit	2/14/20

CHECK: RSK
DRAWN: BZ
JOB: 1913641A

G-1
SITE LOCATION & INDEX SHEET

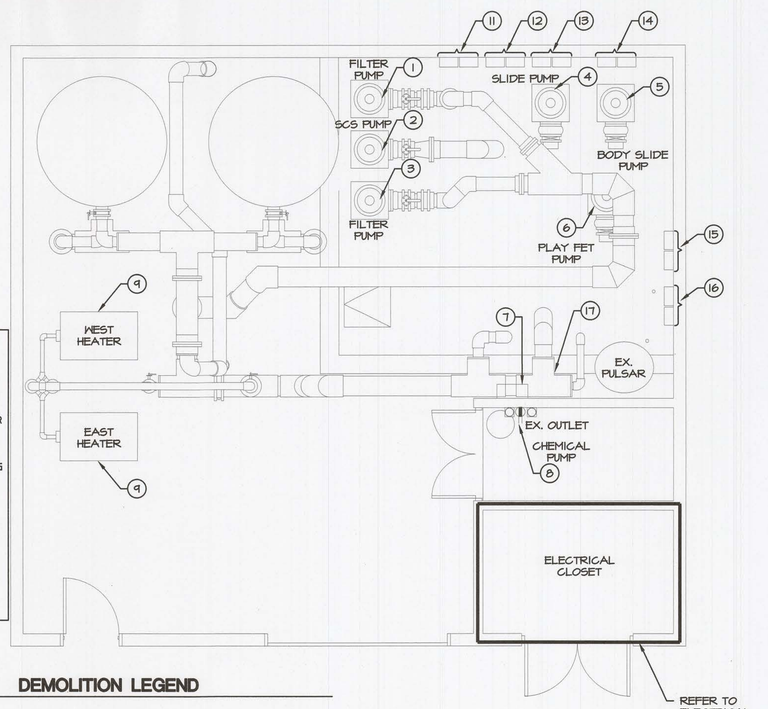


1 DEMOLITION FILTER ROOM EQUIPMENT LAYOUT

SCALE: 1/4" = 1'-0"

NEW WORK KEYNOTES

1. MOUNT NEW CHEMICAL CONTROLLER IN SAME LOCATION AS EXISTING CHEMICAL CONTROLLER WAS LOCATED. REUSE EXISTING CHEMICAL CONTROLLER POWER SUPPLY. REUSE ALL EXISTING CHLORINE AND pH CONTROL CONNECTIONS FOR EACH POOL. REUSE EXISTING PROBE CELLS. REUSE EXISTING FLOW SWITCHES (TO SHUT DOWN CHEMICAL CONTROLLER DURING BACKWASH OR CIRCULATION PUMP SHUT-DOWN).
2. PROVIDE NEW SIGNET MAIN FLOW METER. INTERLOCK WITH HALO CHEMICAL CONTROLLER.



1 FILTER ROOM EQUIPMENT LAYOUT

SCALE: 1/4" = 1'-0"

DEMOLITION LEGEND

X – EXISTING TO REMAIN
R – EXISTING TO BE REMOVED
XR – EXISTING TO BE RELOCATED
XRN – EXISTING, RELOCATED TO NEW LOCATION
XN – EXISTING DEVICE REPLACED WITH NEW
XM – EXISTING DEVICE REWIRED WITH NEW CIRCUIT
XNM – EXISTING DEVICE REPLACED WITH NEW, REWIRED TO NEW CIRCUIT
XPM – EXISTING PANEL MODIFIED REWORK CIRCUIT BREAKERS AS INDICATED. SEE REVISED PANEL SCHEDULE

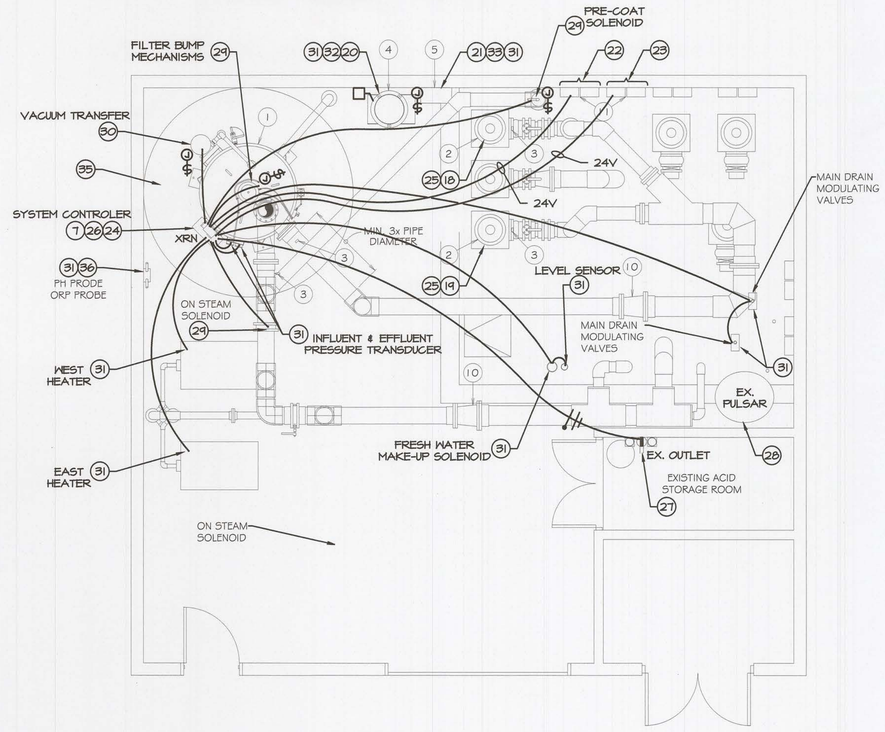
GENERAL NOTES

1. ALL ITEMS ARE NEW, UNLESS OTHERWISE NOTED.
2. THE WORD 'PROVIDE' MEANS FURNISH AND INSTALL, UNLESS OTHERWISE NOTED.
3. ANY DISCONNECT SWITCH VFD REMOVED TO BE TURNED OVER TO OWNER.

SWIMMING POOL EQUIPMENT LIST

THE EQUIPMENT MANUFACTURERS AND CATALOG NUMBERS LISTED BELOW, AND NOT SPECIFICALLY MENTIONED IN THE SPECIFICATIONS, ARE SHOWN TO PROVIDE A STANDARD. EQUIPMENT BY OTHER MANUFACTURERS WILL BE APPROVED IF SAID EQUIPMENT IS SHOWN TO BE EQUAL TO THAT SPECIFIED.

ITEM	DESCRIPTION	MANUFACTURER	CATALOG NO.	QTY.
1	REGENERATIVE PRESSURE DE FILTER, 1,538.8 SQ. FT. TOTAL FILTER AREA, 1.34 GPM/SQ. FT. FILTRATION RATE. PROVIDE WITH ALL ASSOCIATED REMOTE CONTROL VALVES. PROVIDE WITH VACUUM TRANSFER SYSTEM. THE FILTER SHALL BE PROVIDED WITH INFLUENT AND EFFLUENT PRESSURE GAUGES.	FILTREX	EC2100	1
2	VERTICAL TURBINE PUMP, 1,033 GPM @ 80 TDH (EACH PUMP), 30 HP, 1,770 RPM, 230/460 V, 3-PHASE, WP-1 MOTOR STAINLESS STEEL IMPELLER, DUCTILE IRON HEAD, 10" W/ MECHANICAL SEAL. FLANGED COLUMN WITH COUPLED SHAFT, 10" FLANGED INLET, EPOXY COATING. PROVIDE WITH SOLE PLATE.	GOULDS	13CMC 1 STAGE	2
3	PRESSURE GAUGE, 4 1/2" ALUMINUM CASE. PROVIDE WITH SNUBBER AND GAUGE COCK.	MARSH	P14546	4
4	AIR COMPRESSOR, 3 HP, 208 V, 3-PHASE, 60 GALLON VERTICAL RECEIVER TANK. PROVIDE WITH THE FOLLOWING ACCESSORIES: AIR PRESSURE GAUGE, ASME RELIEF VALVE, CHECK VALVE, BELT GUARD, PRESSURE SWITCH, AIR FILTER/SILENCER, AUTOMATIC TANK DRAIN, STARTER. PROVIDE ELECTRICAL CONNECTION, BONDING WIRE AND ALL AIR-LINE CONNECTIONS.	JENNY	G3A-60V	1
5	AIR DRYER - 1/6 H.P., 120 VOLT, SINGLE PHASE, 60 Hz, 15 CFM CAPACITY, WITH BY-PASS VALVE AND WALL MOUNT BRACKET. PROVIDE WITH AIR/WATER SIGHT GLASS BULB.	HANKISON	HPR15	1
6	12" BUTTERFLY MODULATING VALVE WITH SPRING TO CLOSE ACTUATOR, ELECTRO-PNEUMATIC POSITIONER AND EXTENDED OPERATOR ABOVE MECHANICAL ROOM FLOOR. THE VALVE EXTENSION SHALL BE RIGIDLY SUPPORTED WITH STAINLESS STEEL SUPPORTS AND FASTENERS AS REQUIRED.	BRAY	SERIES 30/31	1
7	16" BUTTERFLY MODULATING VALVE WITH SPRING TO CLOSE ACTUATOR, ELECTRO-PNEUMATIC POSITIONER AND EXTENDED OPERATOR ABOVE MECHANICAL ROOM FLOOR. THE VALVE EXTENSION SHALL BE RIGIDLY SUPPORTED WITH STAINLESS STEEL SUPPORTS AND FASTENERS AS REQUIRED.	BRAY	SERIES 30/31	1
8	GEAR OPERATOR. PROVIDE NEW EXTENDED OPERATORS FOR EACH VALVE. EXTENDED OPERATOR SHALL EXTEND 12" ABOVE MECHANICAL ROOM FLOOR. ALL EXTENDED OPERATORS SHALL BE STAINLESS STEEL WITH STAINLESS STEEL HARDWARE. CONNECTION TO GEAR OPERATOR STEM SHALL BE 1/4" STAINLESS STEEL BOLT. THE VALVE EXTENSION SHALL BE RIGIDLY SUPPORTED WITH STAINLESS STEEL SUPPORTS AND FASTENERS AS REQUIRED.	BRAY	040300-21202003	2
9	SWING CHECK VALVE, WAFER TYPE, 10", STAINLESS STEEL.	TITAN FLOW CONTROL, INC.	CV 12-SS	2
10	VARIABLE FREQUENCY DRIVE - 30 H.P. WITH CONFORMAL COATING, 3-CONTACTOR BYPASS, MAIN AND DRIVE FUSING, MAIN DISCONNECT, 36 MONTH WARRANTY AND FACTORY START-UP	DANFOSS	FC102	2
11	EXISTING HALO CONTROLLER (UPGRADED)	INTEGRATED AQUATIC ENVIRONMENTS	HALO SYSTEM REGENERATIVE CONTROLLER	1



1 BONDING AND GROUNDING NEW FILTER ROOM EQUIPMENT LAYOUT

SCALE: 1/4" = 1'-0"

KEY NOTES

1. EXISTING FILTER PUMP #2, 25HP 480V - FEED FROM MDP, CKT#25,27,29. EX. FEEDER 3#3,-1-1/2"C. PUMP TO BE REMOVED. DISCONNECT POWER AND MAKE SAFE FOR REMOVAL BY OTHERS
2. EXISTING SCS PUMP 25HP 480V - FEED FROM MDP, CKT#20,22,24. EX. FEEDER 3#3,-1-1/2"C TO REMAIN.
3. EXISTING FILTER PUMP #1, 25HP 480V - FEED FROM MDP, CKT#26,28,30 EX. FEEDER 3#3,-1-1/2"C PUMP TO BE REMOVED. DISCONNECT POWER AND MAKE SAFE FOR REMOVAL BY OTHERS
4. EXISTING SLIDE PUMP 15HP, 480V - FEED FROM MDP, CKT#13,15,17. EX. FEEDER 3#6,-1"C TO REMAIN
5. EXISTING BODY PUMP 15HP, 480V - FEED FROM MDP, CKT#14,16,18. EX. FEEDER 3#6,-1"C TO REMAIN
6. EXISTING PLAY FET PUMP 15HP, 480V - FEED FROM MDP, CKT#8,10,12. EX. FEEDER 3#6,-1"C TO REMAIN
7. EXISTING CHEMICAL CONTROLLER (SYSTEM CONTROLLER), 120V - FEED FROM PANEL FB, CKT#10 TO BE REMOVED. REINSTALL IN NEW LOCATION.
8. EXISTING CHEMICAL PUMP, 120V - FEED FROM PANEL FB, CKT#9,11 (FED FROM SYSTEMS CONTROLLER) TO REMAIN
9. EXISTING EAST PUMP HEATER, 120V - FEED FROM PANEL FB, CKT#32
10. EXISTING WEST PUMP HEATER, 120V - FEED FROM PANEL FB, CKT#34
11. EXISTING FILTER CIRCULATOR PUMP #2 CONTROLLER AND VFD STARTER & DISCONNECT SWITCH - DISCONNECT AND REMOVE
12. EXISTING FILTER CIRCULATOR PUMP #1 CONTROLLER AND VFD STARTER & DISCONNECT SWITCH - DISCONNECT AND REMOVE
13. EXISTING SCS PUMP CONTROLLER AND VFD STARTER & DISCONNECT SWITCH TO REMAIN
14. EXISTING SPEED SLIDE CIRCULATOR PUMP CONTROLLER AND VFD STARTER & DISCONNECT SWITCH TO REMAIN
15. EXISTING BODY SLIDE CIRCULATOR PUMP CONTROLLER AND VFD STARTER & DISCONNECT SWITCH TO REMAIN
16. EXISTING FEATURE CIRCULATOR PUMP CONTROLLER AND VFD STARTER & DISCONNECT SWITCH TO REMAIN
17. EXISTING PUMP TO REMAIN
18. NEW FILTER PUMP #2 (ITEM 2), 30HP 480V - REFEED FROM MDP, CKT#26,28,30. EX. FEEDER 3#3,-1-1/2"C. MAKE ALL FINAL POWER TERMINATIONS TO PUMP,
19. NEW FILTER PUMP #1 (ITEM 2), 30HP 480V - REFEED FROM MDP, CKT#25,27,29 EX. FEEDER 3#3,-1-1/2"C MAKE ALL FINAL POWER TERMINATIONS TO PUMP,
20. NEW AIR COMPRESSOR (ITEM 4) 3HP, 480V - UTILIZE (3) EXISTING IP SPACES IN PANEL MDP. PROVIDE NEW 15A/3P CIRCUIT BREAKER CKTS# 38,40,42. ROUTE 3#12,#12G, 3/4"C TO EXISTING PANEL MDP. LOCATED 30A/3P DISCONNECT SWITCH IN NEMA 3R ENCLOSURE AT AIR COMPRESSOR. PROVIDE LABEL: "AIR COMPRESSOR" ON DISCONNECT SWITCH.
21. NEW AIR DRYER (ITEM 5) 1/6HP, 120V - UTILISE (1) EXISTING IP/20A CIRCUIT BREAKER IN PANEL FB, CKT#36 TO FEED AIR DRYER. PROVIDE SINGLE TOGGLE SWITCH AT UNIT. LABEL: "AIR DRYER" IN LOCAL DISCONNECT SWITCH. ROUTE 2#12,#12G, 3/4"C TO EXISTING PANEL FB.
22. NEW FILTER CIRCULATOR PUMP #1 (ITEM 11) CONTROLLER AND VFD STARTER & DISCONNECT SWITCH - LOCATE IN NEW LOCATION
23. NEW FILTER CIRCULATOR PUMP #2 (ITEM 11) CONTROLLER AND VFD STARTER & DISCONNECT SWITCH - LOCATE IN NEW LOCATION
24. NEW HALO CONTROLLER (UPGRADED) RECONNECT TO EXISTING POWER CONNECTION. EXTEND CONDUIT AND WIRES TO NEW LOCATION
25. HARD WIRE (2) ACTIVITY POOL CIRCULATION PUMPS. UTILIZE NEW VARIABLE FREQUENCY DRIVE, AS MOTOR STARTER. THE MOTOR ARE RATED AT 30HP, 480V, 3 PHASE 1,760 RPM.
26. HARE WAIRE ONE (1) SYSTEM CONTROLLER. POWER REQUIREMENTS ARE 20 AMPERES, 120V.
27. HARE WIRE ON EXISTING DUPLEX OUTLET TO THE POOL SYSTEM CONTROLLER PH FEED CIRCUIT. THE OUTPUT IS RATED 5 AMPERES, 120V. HAVE THE ELECTRICAL CONTRACTOR COORDINATE WITH POOL CONTRACTOR.
28. HARD WIRE EXISTING PULSAR CHLORINE FEED SYSTEM TO THE SYSTEM CONTROLLER SANITIZER FEED CIRCUIT. THE OUTPUT IS RATED AT 20 AMPERES, 120V HAVE THE ELECTRICAL CONTRACTOR COORDINATE WITH POOL CONTRACTOR.
29. HARD WIRE FILTER BUMP MECHANISMS, PRE-COAT SOLENOID AND ON-STREAM SOLENOID TO THE SYSTEM CONTROLLER. POWER REQUIREMENTS ARE 20 AMPERES, 120V. ROUTE 2#12,#12G, 3/4"C TO PANEL FB, CKT#20. PROVIDE LOCAL DISCONNECT SWITCH AT PRE-COAT SOLENOID AND FILTER BUMP MECHANISMS. PROVIDE SEAL-TITE. CONDUIT
30. HARD WIRE ONE VACUUM TRANSFER DIRECTLY TO THE SYSTEM CONTROLLER VACUUM TRANSFER SYSTEM CIRCUIT UTILIZING LIQUID TIGHT CONDUIT. THE BLOWER IS RATED AT 1-1/2HP, 120V, SINGLE PHASE. ROUTE 2#10,#10G, 3/4"C TO PANEL FB, CKT#36. PROVIDE LOCAL DISCONNECT SNITCH AT BLOWER. PROVIDE SEAL-TITE. CONDUIT
31. PROVIDE CONDUIT FROM THE SYSTEM CONTROLLER FOR 24VDC WIRING TO THE FOLLOWING EQUIPMENT. VFD'S HEATER INTERLOCK, LEVEL SENSOR, FRESH WATER MAKE-UP SOLENOID, MAIN DRAIN MODULATING VALVES, INFLUENT AND EFFLUENT PRESSURE TRANSDUCER, ORP PROBE AND PH PROBE. HAVE ELECTRICAL CONTRACTOR COORDINATE WITH POOL CONTRACTOR.
32. HARD WIRE ONE (1) AIR COMPRESSOR. THE MOTOR RATED AT 3HP, 480V.
33. HARD WIRE ONE (1) AIR DRYER. THE MOTOR IS RATED AT 1/6 HP, 120V SINGLE PHASE, 60HZ.
34. GROUND ALL POOL EQUIPMENT IN ACCORDANCE WITH NEC AND LOCAL CODES. SEE SHEET E1.3 BONDING AND GROUNDING
35. ALL ELECTRICAL EQUIPMENT FURNISHED SHALL BE RESISTANT TO SANITIZING AND PH CONTROLL POOL CHEMICALS.
36. NEW ORP PROBE AND PH PROBE. E.C. TO COORDINATE WITH POOL CONTRACTOR.

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HIGHLAND PARK PARK DISTRICT - HIDDEN CREEK
FILTRATION SYSTEM RENOVATION
1220 FREDRICKSON PLACE
HIGHLAND PARK, IL 60035

POWER & LIGHTING
DEMOLITION PLAN

ISSUE

TO	DATE

CHECK:RSK
DRAWN: DK
JOB: 1913641A

E1.1

(E#) KEY NOTES RISER DIAGRAM

1. EXISTING EXTERIOR 600A, 277/480V CT CABINET AND ELECTRIC METER
2. EXISTING 600A MAIN DISTRIBUTION PANEL "MDP"
3. EXISTING TIME CLOCK (ABOVE), GENERAL DECK & BUILDING LIGHT CONTROL BOX (BELOW).
4. EXISTING EXISTING TIME CLOCK (ABOVE), SECURITY LIGHTS CONTROL BOX (BELOW) - CKTS#6,11,35
5. EXISTING TIME CLOCK (ABOVE) - FOR PARKING LOT LIGHTS, GENERAL PARKING LIGHT AND ROAD LIGHTS CONTROL BOX (BELOW)
6. EXISTING 400A/3P DISCONNECT SWITCH
7. EXISTING PAD MOUNTED 225KVA DRY TYPE TRANSFORMER 277/480V PRI. 120/208V SEC.
8. EXISTING TIME CLOCK - FOR UNDER WATER LIGHTS.
9. EXISTING UNDER WATER LIGHTS CONTROL BOX.
10. EXISTING 200A 42 CKT PANEL "FB"
11. EXISTING KOHLER POWER SYSTEM TRANSFER SWITCH.
12. EXISTING EXTERIOR HIGH LEVEL CONTROL CABINET.
13. EXISTING 2 SETS OF 4#350KCMIL, EACH SET IN 3"C TO REMAIN
14. EXISTING FEEDER TO EXISTING 225KVA TRANSFORMER FROM "MDP" TO REMAIN
15. EXISTING FEEDER FROM 400A/3P DISCONNECT SWITCH TO REMAIN
16. EXISTING FEEDER FROM EXISTING 225KVA TRANSFORMER TO PANEL "FP" TO REMAIN
17. EXISTING BRANCH FEEDER TO GENERATOR BATTERY HEATER TO REMAIN (FEED FROM PANEL FB, CKT#23
18. EXISTING FEEDER TO TRANSFER SWITCH TO REMAIN.
19. EXISTING 200A CONCESSION STAND PANEL "SC"
20. EXISTING GENERATOR GROUND TO REMAIN.
21. EXISTING SERVICE GROUND TO REMAIN.
22. EXISTING SECONDARY FEEDER FROM COMED TRANSFORMER TO REMAIN.
23. EXISTING 300KVA UTILITY TRANSFORMER
24. EXISTING UTILITY TRANSFORMER
25. EXISTING EXTERIOR 200A, 120/208 CT CABINET AND ELECTRIC METER
26. EXISTING PANEL P2
27. EXISTING BATH HOUSE PANEL BH.

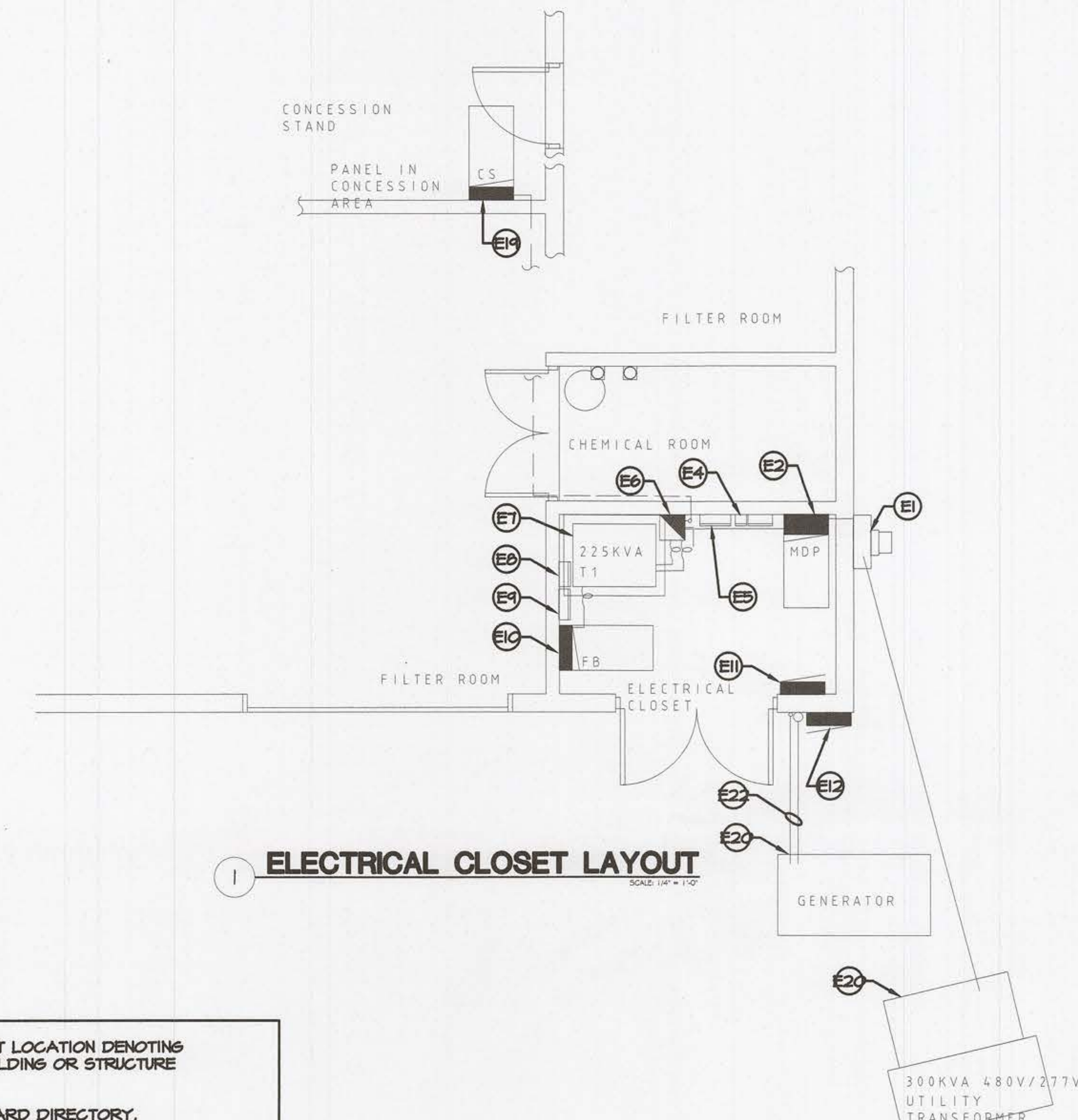
(N#) KEY NOTES

1. EXISTING 70A/3P CIRCUIT BREAKER TO BE REMOVED, REPLACE WITH NEW 80A/3P CIRCUIT BREAKER FOR NEW 30HP FILTER CIRCULATION PUMP
2. REMOVE (1) 20A/1P CIRCUIT BREAKER. PROVIDE NEW 15A/3P CIRCUIT BREAKER. UTILIZE (3) 1P SPACES.

PANELBOARD NOTES:

1. ALL CIRCUIT BREAKERS IN EXISTING PANELBOARDS AND DISTRIBUTION PANELS SHALL BE FURNISHED AND INSTALLED BY EC.
2. ELECTRICAL CONTRACTOR SHALL PROVIDE PANEL SCHEDULES FOR ALL PANELS ALTERED BY THIS WORK. ANY SPARE CIRCUITS SHALL BE MARKED 'SPARE' ON THE PANEL SCHEDULE.
3. ALL SPARE CIRCUIT BREAKERS SHALL BE IN "OFF POSITION"

* DENOTES NEW CIRCUIT BREAKER



(1) ELECTRICAL CLOSET LAYOUT

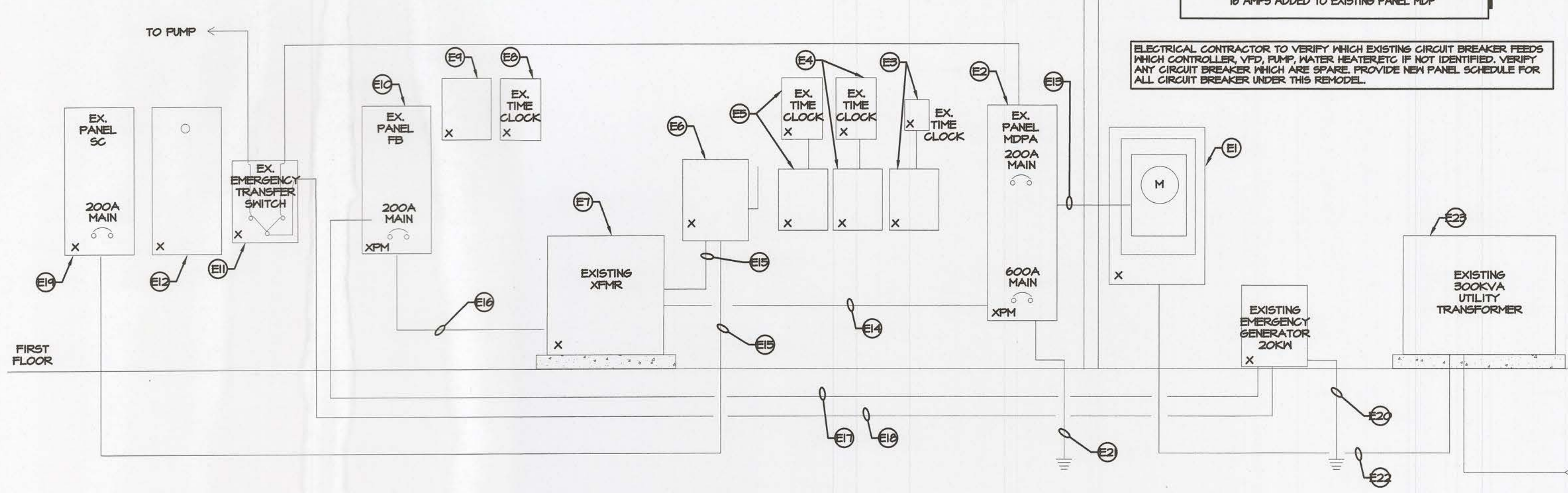
SERVICES IDENTIFICATION: PROVIDE A PERMANENT PLAQUE OR DIRECTORY AT EACH FEEDER AND BRANCH-CIRCUIT DISCONNECT LOCATION DENOTING ALL OTHER SERVICES, FEEDERS OR BRANCH CIRCUITS SUPPLYING THAT BUILDING OR STRUCTURE OR PASSING THROUGH THAT BUILDING OR STRUCTURE AND THE AREA SERVED BY EACH.

ELECTRICAL CONTRACTOR'S COMPANY NAME, ADDRESS, TELEPHONE CONTACT INFORMATION, DATE OF INSTALLATION, SWITCHBOARD DIRECTORY, DISTRIBUTION BOARD DIRECTORY AND PANEL DIRECTORY AT ALL SWITCHGEAR, SWITCHBOARDS, DISTRIBUTION PAND BRANCH PANELS LOCATIONS.

ALL SWITCHGEAR, SWITCHBOARDS, AUTOMATIC TRANSFER SWITCHES, GENERATOR MAIN, MAIN BREAKERS, DISTRIBUTION PANELS, TRANSFORMERS, 2-POLE, AND 3-POLE DISCONNECT SAFETY SWITCHES, BRANCH PANELS, FIRE ALARM CONTROL PANEL, RELAY CABINET PANELS, GROUNDING PANELS, UPS PANELS AND EMERGENCY SYSTEM EQUIPMENT SHALL HAVE EQUIPMENT IDENTIFICATION. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ENGRAVED PLASTIC NAMEPLATES, BLACK FACE WITH WHITE MINIMUM OF 1/2" HIGH LETTERS SCREWED TO THE COVER OF ALL EQUIPMENT INDICATING THE TAG AND FUSIBLE SWITCH UNITS INDICATING THE EQUIPMENT SERVED. ALSO PROVIDE ON ALL MAIN SWITCHES AN ENGRAVED PLASTIC NAME PLATE, RED FACE WITH WHITE MINIMUM 1" HIGH LETTERS. IF MORE THAN ONE MAIN SWITCH, PROVIDE ADDITIONAL 1/8" HIGH LETTERING STATING THE NUMBER OF THE MAIN SWITCHES AND THE TOTAL OF MAIN SWITCHES (I.E.2 OF 4). DINO TAPE AND LABEL LETTERING TAPE WILL NOT BE EXCEPTED.

PANEL MDP: REMOVE 56508 WATTS (2) 25HP PUMPS.
REPLACE NEW LOAD 66480 WATTS
(2)30HP PUMPS. AND (1) 3HP COMPRESSOR 3988 WATTS.
NEW ADDITIONAL LOAD; 13872 WATTS.
16 AMPS ADDED TO EXISTING PANEL MDP

ELECTRICAL CONTRACTOR TO VERIFY WHICH EXISTING CIRCUIT BREAKER FEEDS WHICH CONTROLLER, VFD, PUMP, WATER HEATER,ETC IF NOT IDENTIFIED. VERIFY ANY CIRCUIT BREAKER WHICH ARE SPARE. PROVIDE NEW PANEL SCHEDULE FOR ALL CIRCUIT BREAKER UNDER THIS REMODEL.



ELECTRICAL RISER DIAGRAM

NOT TO SCALE FILTER BUILDING AND CONCESSION STAND

PANEL: MDP (EXISTING) VOLTS: 277/480 PHASE: 3PH, 4W
AMPS: 600A MAIN: 600A MCB (BOTTOM FEED) A.I.C.: -
LOCATION: ELECTRICAL CLOSET MOUNTING: SURFACE

CIRCUIT	POLE	TRIP	DESCRIPTION	Aφ (KVA)		Bφ (KVA)		Cφ (KVA)		DESCRIPTION	TRIP	POLE	CIRCUIT
	3		TRANSFORMER 225KVA	-	-								
			FEEDS PANEL FB AND SC			-	-						
		200	-					-	-				
1	3		POLE LIGHTS WEST	-	-					POLE LIGHTS EAST		3	2
3			POLE LIGHTS WEST			-	-			POLE LIGHTS EAST			4
5		20	LIGHTS SUN DECK					-	-	POLE LIGHTS EAST SECURITY	20		6
7	3		POLE LIGHTS SOUTH	-	-					PUMP POOL FEATURES		3	8
9			POLE LIGHTS SOUTH			-	-			-			10
11		20	POLE LIGHTS SOUTH SEC.					-	-	-	40		12
13	3		PUMP SPEED SLIDE	-	-					PUMP BODY SLIDE		3	14
15			-			-	-			-			16
17		40	-					-	-	-	40		18
19	3		PUMPS DEEP WELL	-	-					PUMP SCS		3	20
21			(GENERATOR MOTOR PUMP)			-	-			-			22
23		60	-					-	-	-	70		24
25	3		PUMP RECIRCULATE #2	11.0	11.0					PUMP RECIRCULATE #1		3	26
27			30HP			11.0	11.0			30HP			28
29		80*	-					11.0	11.0	-	80*		30
31	1	20	POLE LIGHTS NORTH	-	-					SPARE		3	32
33	1	20	POLE LIGTHS NORTH			-	-			-			34
35	1	20	POLE LIGHTS SECURITY					-	-	-	30		36
37	1	20	POLE LIGHTS ROAD	-	1.3					NEW AIR COMPRESSOR ITEM#4		3	38
39	1	20	POLE LIGHTS PARKING LOT			-	1.3			3HP			40
41	1	20	LIGHT TRELLUS					-	1.3	3#12,1#12G, 3/4"C	15*		42
			.	-	-					MAIN SWITCH CIRCUIT BREAKER		3	
						-	-			-			
								-	-	-	600		
			PHASE TOTAL =	-		-		-		TOTAL KVA =	-		
										TOTAL AMPS =	-		

(N1) CIRCUITS 25-29 AND 26-30; (N2) CIRCUITS 38-42

PANEL: FB (EXISTING) VOLTS: 120/208V PHASE: 3PH, 4W
AMPS: 200A MAIN: 200A MCB A.I.C.: -
LOCATION: ELECTRICAL CLOSET MOUNTING: SURFACE

CIRCUIT	POLE	TRIP	DESCRIPTION	Aφ (KVA)		Bφ (KVA)		Cφ (KVA)		DESCRIPTION	TRIP	POLE	CIRCUIT
1	1		-	-	-					POOL LIGHTS (2) N.W. BY CURLY SLIDE	20**	1	2
3	1		-			-	-			POOL LIGHTS (2) S.W. BY TALL SLIDE	20**	1	4
5	2		SMALL HEATER S.E.					-	-	POOL LIGHTS (3) SOUTH SUB. BY DEEP END	20**	1	6
7		15	CORNER PUMP ROOM	-	-					POOL LIGHTS (3) NORTH SUB. BY CURLY SLIDE	20**	1	8
9	1	20	COLORINATOR CONTROL PUMP			-	-			POOL LIGHTS (1) N.E. -	20**	1	10
11	1	20	-					-	-	OUTLET POOL AREA	20	1	12
13	1	20	SOFFIT LIGHTS	-	-					OUTLETS POOL AREA	20	1	14
15	1	20	SOFFIT LIGHTS			-	-			OUTLETS POOL AREA	20	1	16
17	1	20	-					-	-	EXHAUST FAN ELEC. CLOSET	20	1	18
19	1	20	LIGHTS THIS RM (ELEC CLOSET)	-	1.80					PRE-COAT SOLENOID 20A	20	1	20
21	1	20	OUTLET THIS RM (ELEC CLOSET)			-	-			-	20	1	22
23	1	20	BATTERY CHARGER					-	-	-	20	1	24
25	1	20	LIGHTING CONTROL	-	-					LIGHTS CHLORINE ROOM	20	1	26
27	2		-			-	-			UNIT HEATER	20	1	28
29		60	-					-	-	EXHAUST FAN CHLORINE ROOM	20	1	30
31	1	20	ALARM SPRINKLER & PUMP	-	-					EAST PUMP HEATER	20	1	32
33	1	20	SUMP PUMP			-	-			WEST PUMP HEATER	20	1	34
35	1	20	OUTLETS SOUTH & EAST					-	2.40	VACUUM TRANSFER SYSTEM 1-1/2HP	20*	1	36
37	1	20	FILTER ROOM LIGHTS	-	-					HEATER CONTROL POWER PH & CHLORINE CONTROL EAST	20	1	38
39	1	20	EXHAUST FAN FILTER ROOM			-	-			POOL HEATER EAST	20	1	40
41	1	20	SPRINKLER COMPRESSOR					-	-	POOL HEATER WEST	20	1	42
				-	-					MAIN CIRCUIT BREAKER		3	
						-	-			-			
								-	-	-	200		
			PHASE TOTAL =	-		-		-		TOTAL KVA =	-		
										TOTAL AMPS =	-		

* - DENOTES NEW CIRCUIT BREAKER
** - DENOTES GFCI TYPE CIRCUIT BREAKER

PANEL: SC (EXISTING) VOLTS: 120/208V PHASE: 3PH, 4W
AMPS: 200A MAIN: 200A MCB A.I.C.: -
LOCATION: CONCESSION STAND MOUNTING: SURFACE

PANEL SHOWN FOR REFERENCE ONLY NO CHANGE

CIRCUIT	POLE	TRIP	DESCRIPTION	Aφ (KVA)		Bφ (KVA)		Cφ (KVA)		DESCRIPTION	TRIP	POLE	CIRCUIT
1	1	20	FIRE ALARM	-	-					OUTLETS WEST WALL	20	1	2
3	3		HOOD FAN			-	-			OUTLETS NORTH WALL	20	1	4
5			-					-	-	OUTLETS WEST WALL	20	1	6
7		20	-	-	-					OUTLETS NORTH WALL	20	1	8
9	1	20	OUTLETS SOUTH WALL			-	-			ICE MACHINE	20	1	10
11	1	20	OUTLETS SOUTH WALL					-	-	INC MACHINE	20	1	12
13	1	20	OUTLETS SOUTH WALL	-	-					OUTLETS CENTER AREA	20	1	14
15	1	20	OUTLETS SOUTH WALL			-	-			OUTLETS CENTER AREA	20	1	16
17	1	20	HAND DRYER BATHROOM					-	-	ACTIVE UNKNOWN	20	1	18
19	1	20	OUTLETS THIS WALL	-	-					OUTLETS EAST WALL	20	1	20
21	1	20	OUTLETS SOUTH WALL PREP RM			-	-			CONTROL FOR HOOD FAN, HOOD FAN LIGHTS & AIR HANDLER EAST	20	1	22
23	1	20	OUTLETS SOUTH WALL PREP RM					-	-	OUTLETS WEST WALL	20	1	24
25	1	20	-	-	-					NEW FREEZER	20	1	26
27	1	20	-			-	-			AIR CONDITIONER		2	28
29	1	20	OUTLETS WEST WALL					-	-	-	30		30
31	1	20	OUTLETS SOUTH WALL	-	-					OUTLETS VENDING MACHINES	20	1	32
33	1	20	RESTROOM LIGHTS & OUTLETS			-	-			OUTLETS VENDING MACHINES	20	1	34
35	1	20	LIGHTS CONCESSION ROOM					-	-	OUTLETS VENDING MACHINES	20	1	36
37	1	20	LIGHTS PREP ROOM	-	-					WATER HEATER		2	38
39	2		AIR CONDITIONER			-	-			-	25		40
41		30	-					-	-	SPARE	20	1	42
				-	-					-			
						-	-			-			
								-	-	-			
			PHASE TOTAL =	-		-		-		TOTAL KVA =	-		
										TOTAL AMPS =	-		

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HIGHLAND PARK PARK DISTRICT - HIDDEN CREEK
FILTRATION SYSTEM RENOVATION
1220 FREDRICKSON PLACE
HIGHLAND PARK, IL 60035

POWER & LIGHTING DEMOLITION PLAN

ISSUE
TO DATE

CHECK:RSK
DRAWN: DK
JOB: 1913641A

E1.2

POOL BONDING REQUIREMENTS

WHERE BONDING CLAMPS ARE USED, THEY SHALL BE OF THE APPROVED TYPE.

METAL PARTS OF ELECTRIC EQUIPMENT ASSOCIATED WITH THE CIRCULATING SYSTEM, INCLUDING PUMP MOTORS.

ALL PARTS LISTED ABOVE SHALL BE CONNECTED TO A COMMON BONDING GRID WITH A SOLID COPPER CONDUCTOR, INSULATED, COVERED, OR BARE, NOT SMALLER THAN No. 8. ALL CONNECTIONS SHALL BE EXOTHERMIC WELDING OR PRESSURE WELDING OR CLAMPS THAT ARE SUITABLE FOR THE PURPOSE OF THE FOLLOWING MATERIAL STAINLESS STEEL, BRASS, COPPER OR COPPER ALLOY.

THE FOLLOWING BONDING GRID SHALL BE PERMITTED TO BE OF THE FOLLOWING:
1. STRUCTURAL REINFORCING RODS BONDED TOGETHER BY STEEL WIRES.
2. THE WALL OF A BOLTED OR WELDED METAL POOL.
3. SOLID COPPER CONDUCTOR, INSULATED, COVERED OR BARE NOT SMALLER THAN No. 8.
4. RIGID METAL CONDUIT OR INTERMEDIATE METAL CONDUIT OF BRASS.

STRUCTURAL REINFORCING STEEL OR THE WALLS OF BOLTED OR WELDED METAL POOL STRUCTURES SHALL BE PERMITTED AS A COMMON BONDING GRID FOR NON-ELECTRICAL PARTS WHERE CONNECTIONS CAN BE MADE IN ACCORDANCE WITH SECTION 250-8.

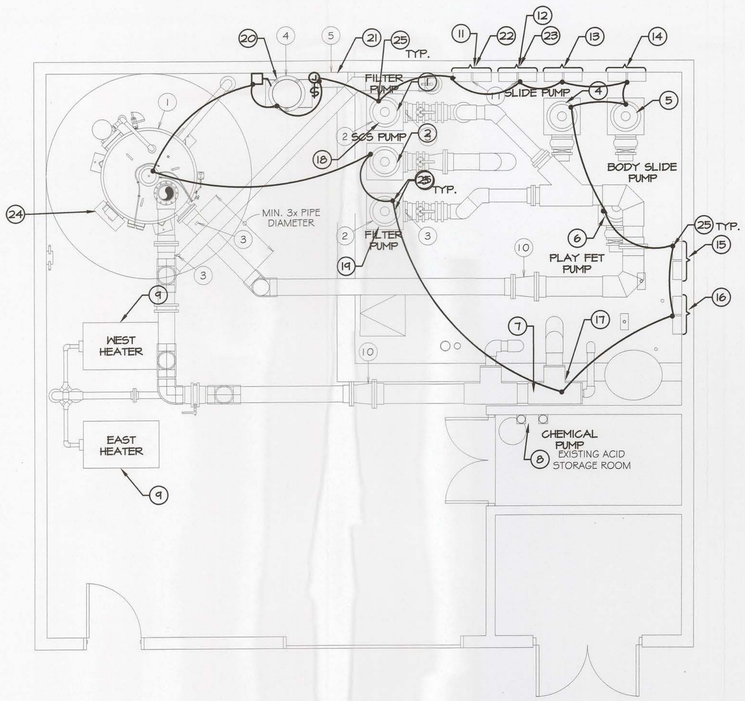
ELECTRICAL CONTRACTOR MUST BOND ALL COMPONENTS IN ACCORDANCE WITH 2005 NEC, SECTION 680-26.

GENERAL NOTES

1. INSTALL UNBROKEN INSULATED COPPER WIRE FROM DISTRIBUTION PANEL TO PUMP AND MOTOR. SIZE AS INDICATED ON PANEL SCHEDULE
2. INSTALLATION SHALL COMPLY WITH 2005 NEC .

SPECIAL DRAWING NOTE:
ELECTRICAL INSTALLATION SHALL BE IN COMPLIANCE WITH 2005 NATIONAL ELECTRICAL CODE

SPECIAL DRAWING NOTE:
ELECTRICAL INSTALLATION SHALL BE IN COMPLIANCE WITH 2008 NATIONAL ELECTRICAL CODE



1 **BONDING AND GROUNDING NEW FILTER ROOM EQUIPMENT LAYOUT**
SCALE: 1/4" = 1'-0"

(#) KEY NOTES

1. EXISTING FILTER PUMP #2, 25HP 480V - FEED FROM MDP, CKT#25,27,29. EX. FEEDER 3#3,-1-1/2"C. PUMP TO BE REMOVED. DISCONNECT POWER AND MAKE SAFE FOR REMOVAL BY OTHERS
2. EXISTING SGS PUMP 25HP 480V - FEED FROM MDP, CKT#20,22,24. EX. FEEDER 3#3,-1-1/2"C TO REMAIN.
3. EXISTING FILTER PUMP #1, 25HP 480V - FEED FROM MDP, CKT#26,28,30 EX. FEEDER 3#3,-1-1/2"G PUMP TO BE REMOVED. DISCONNECT POWER AND MAKE SAFE FOR REMOVAL BY OTHERS
4. EXISTING SLIDE PUMP 15HP, 480V - FEED FROM MDP, CKT#26,28,30. EX. FEEDER 3#6,-1"C TO REMAIN
5. EXISTING BODY PUMP 15HP, 480V - FEED FROM MDP, CKT#14,16,18. EX. FEEDER 3#6,-1"C TO REMAIN
6. EXISTING PLAY FET PUMP 15HP, 480V - FEED FROM MDP, CKT#8,10,12. EX. FEEDER 3#6,-1"C TO REMAIN
7. EXISTING CHEMICAL CONTROLLER, 120V - FEED FROM PANEL FB, CKT#10 (V.I.F.)TO BE REMOVED. REINSTALL IN NEW LOCATION.
8. EXISTING CHEMICAL PUMP, 120V - FEED FROM PANEL FB, CKT#9,11 (V.I.F.) TO REMAIN.
9. EXISTING EAST PUMP HEATER, 120V - FEED FROM PANEL FB, CKT#32
10. EXISTING WEST PUMP HEATER, 120V - FEED FROM PANEL FB, CKT#34
11. EXISTING FILTER CIRCULATOR PUMP #1 CONTROLLER AND VFD STARTER & DISCONNECT SWITCH - DISCONNECT AND REMOVE
12. EXISTING SGS PUMP CONTROLLER AND VFD STARTER & DISCONNECT SWITCH TO REMAIN
13. EXISTING FILTER CIRCULATOR PUMP #1 CONTROLLER AND VFD STARTER & DISCONNECT SWITCH - DISCONNECT AND REMOVE
14. EXISTING SPEED SLIDE CIRCULATOR PUMP CONTROLLER AND VFD STARTER & DISCONNECT SWITCH TO REMAIN
15. EXISTING BODY SLIDE CIRCULATOR PUMP CONTROLLER AND VFD STARTER & DISCONNECT SWITCH TO REMAIN
16. EXISTING FEATURE CIRCULATOR PUMP CONTROLLER AND VFD STARTER & DISCONNECT SWITCH TO REMAIN
17. EXISTING PUMP TO REMAIN
18. NEW FILTER PUMP #2 (ITEM 2), 30HP 480V - REFEED FROM MDP, CKT#26,28,30. EX. FEEDER 3#3,-1-1/2"C. MAKE ALL FINAL POWER TERMINATIONS TO PUMP,
19. NEW FILTER PUMP #1 (ITEM 2), 30HP 480V - REFEED FROM MDP, CKT#25,27,29 EX. FEEDER 3#3,-1-1/2"C MAKE ALL FINAL POWER TERMINATIONS TO PUMP,
20. NEW AIR COMPRESSOR (ITEM 4) 3HP, 480V - UTILIZE (3) EXISTING IP SPACES IN PANEL MDP. PROVIDE NEW 15A/3P CIRCUIT BREAKER CKTS# 38,40,42. ROUTE 3#12,#12G, 3/4"C TO EXISTING PANEL MDP. LOCATED 30A/3P DISCONNECT SWITCH IN NEMA 3R ENCLOSURE AT AIR COMPRESSOR. PROVIDE LABEL: "AIR COMPRESSOR" ON DISCONNECT SWITCH.
21. NEW AIR DRYER (ITEM 5) 1/6HP, 120V - UTILISE (1) EXISTING 1P/20A CIRCUIT BREAKER IN PANEL FB, CKT#36 TO FEED AIR DRYER. PROVIDE SINGLE TOGGLE SWITCH AT UNIT. LABEL: "AIR DRYER" IN LOCAL DISCONNECT SWITCH. ROUTE 2#12,#12G, 3/4"C TO EXISTING PANEL FB.
22. NEW FILTER CIRCULATOR PUMP #1 (ITEM 11) CONTROLLER AND VFD STARTER & DISCONNECT SWITCH - LOCATE IN NEW LOCATION
23. NEW FILTER CIRCULATOR PUMP #2 (ITEM 11) CONTROLLER AND VFD STARTER & DISCONNECT SWITCH - LOCATE IN NEW LOCATION
24. NEW HALO CONTROLLER (UPGRADED) RECONNECT TO EXISTING POWER CONNECTION.
25. PROVIDE BONDING TO ALL NEW EQUIPMENT, MOTORS AND PUMPS. TYPICAL

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HIGHLAND PARK PARK DISTRICT - HIDDEN CREEK
FILTRATION SYSTEM RENOVATION
1220 FREDRICKSON PLACE
HIGHLAND PARK, IL 60035

BONDING AND GROUNDING PLAN

ISSUE

TO	DATE

CHECK:RSK
DRAWN: DK
JOB: 1913641A

E1.3

ELECTRICAL DEMOLITION & TEMPORARY ELECTRIC NOTES:

1) PROVIDE COMPLETE ELECTRICAL DEMOLITION AS REQUIRED FOR THE LIGHTING, POWER AND SYSTEMS WORK THROUGHOUT ALL PROJECT AREAS. UNLESS SPECIFICALLY NOTED OTHERWISE ON PLANS OR DETERMINED OTHERWISE DURING THIS CONTRACTOR'S PRE-DEMOLITION SURVEY, ALL ABANDONED EXISTING ELECTRICAL WORK IN THE PROJECT AREAS SHALL BE DISCONNECTED AND REMOVED IN ITS ENTIRETY BY THE ELECTRICAL CONTRACTOR. ALL RELATED WORK SHALL COMPLY WITH THE NOTES SPECIFIED HEREAFTER.

2) IT IS NOT THE INTENT OF THESE CONTRACT DOCUMENTS THAT EXISTING CONDITIONS BE ACCURATELY SHOWN. EXISTING ELECTRICAL WORK IS SHOWN TO A LIMITED EXTENT ON DRAWINGS AND IS SHOWN FOR GENERAL PLANNING/SCHEMATIC REFERENCE ONLY. THE ACCURACY OF THE LOCATIONS AND QUANTITIES SHOWN IS NOT GUARANTEED.

3) PRIOR TO SUBMITTING A BID, THE ELECTRICAL CONTRACTOR SHALL PERFORM A DETAILED WALK-THROUGH FIELD INSPECTION, TO REVIEW THE EXISTING STRUCTURES AND PREMISES, TO DETERMINE ALL EXISTING CONDITIONS, DEVICE/EQUIPMENT LOCATIONS, ETC., AND TO COMPARE THE ABOVE WITH CONTRACT DOCUMENTS AS REQUIRED TO MAKE ALL NECESSARY BASE BID ALLOWANCES FOR ALL REQUIRED ELECTRICALLY RELATED DEMOLITION AND NEW CONSTRUCTION WORK. NO SUBSEQUENT ALLOWANCE TO THE CONTRACT COST WILL BE MADE FOR ANY ERRORS OR OMISSIONS RESULTING FROM INSUFFICIENT REVIEW OF EXISTING CONDITIONS BY THE ELECTRICAL CONTRACTOR.

4) PROVIDE ALL NECESSARY DEMOLITION RELATED WORK AS REQUIRED TO CLEAR AND REMOVE ALL EXISTING ELECTRICAL WORK TO BE ABANDONED AND AS REQUIRED TO ACCOMMODATE ALL NEW WORK OF ALL TRADES. IN GENERAL, REMOVE ALL ABANDONED CONDUIT AND WIRING. EXTEND CONDUIT, WIRING, ETC., AS REQUIRED TO ACCOMMODATE NEW OR RELOCATED ELECTRICAL WORK. WHERE WIRING EXTENSIONS ARE REQUIRED FOR LOW VOLTAGE SYSTEMS WORK, COORDINATE IN ADVANCE WITH RESPECTIVE EQUIPMENT/SYSTEM VENDOR TO ENSURE THAT SPLICING METHODS WILL NOT COMPROMISE THE INTEGRITY OF THE SYSTEM.

5) IT IS RECOGNIZED THAT THERE MAY BE SOME CONDUIT SYSTEMS RENDERED INACTIVE BY DEMOLITION, CAUSING DISCONNECTION OF "DOWNSTREAM" OUTLETS, ETC. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO INVESTIGATE THESE TYPES OF CONDITIONS (FOR ALL SYSTEMS) PRIOR TO DEMOLITION. PROVIDE ALL NECESSARY CORRECTIVE ELECTRICAL WORK PRIOR TO DEMOLITION TO ENSURE THAT SUCH "DOWNSTREAM" DEVICES REMAIN PERMANENTLY ACTIVE THROUGHOUT DEMOLITION, NEW CONSTRUCTION AND AFTER PROJECT COMPLETION.

6) ALL WIRING, DEVICES, CONDUIT, ETC., CONFLICTING WITH CONSTRUCTION RELATED WORK OF ANY AND ALL TRADES SHALL BE REMOVED AND/OR RELOCATED BY THE ELECTRICAL CONTRACTOR AS NECESSARY AND/OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE IN THE FIELD. ELECTRICAL DISCONNECTIONS (AND/OR RECONNECTIONS) FOR EQUIPMENT TO BE REMOVED (AND/OR RELOCATED) BY OTHER TRADES SHALL BE MADE BY THE ELECTRICAL CONTRACTOR.

7) EXCEPT WHERE REUSE IS INDICATED, REFER TO OWNER FOR DISPOSITION REQUIREMENTS OF ALL REMOVED ELECTRICAL EQUIPMENT. FOR EQUIPMENT TO BE REUSED AND EQUIPMENT WHICH THE OWNER ELECTS TO RETAIN, PROTECT AND TRANSPORT SAME TO AN OWNER DESIGNATED AREA ON SITE AS DIRECTED IN FIELD. ALL REUSE EQUIPMENT SHALL BE CLEANED, CHECKED FOR PROPER OPERATION AND REINSTALLED AS INDICATED IN PROJECT MANUAL OR ON DRAWINGS.

8) ELECTRICAL EQUIPMENT TO BE REUSED AND SALVAGE MATERIALS RETAINED BY OWNER SHALL BE CAREFULLY REMOVED (UNDAMAGED) AND TURNED OVER TO OWNER. DISCONNECT (NOT JUST CUT) ALL WIRING & "WHIPS" FROM EQUIPMENT TERMINAL POINTS AND CAREFULLY TRANSPORT TO AND NEATLY STORE AT AN ON-SITE STORAGE LOCATION AS DIRECTED IN FIELD. COMPONENTS SHALL BE NEATLY STORED AS GROUPS BY SYSTEM

9) UNLESS DIRECTED OTHERWISE IN FIELD, ALL OTHER ELECTRICAL DEMOLITION MATERIALS SHALL BECOME THE PROPERTY OF THE ELECTRICAL CONTRACTOR WHO SHALL PROMPTLY REMOVE SAME FROM THE JOB SITE AND LEGALLY DISPOSE OF SAME.

10) REFER TO ARCHITECTURAL DRAWINGS FOR MORE SPECIFIC DEFINITIONS OF DEMOLITION AREAS. REFER TO DRAWINGS OF ALL TRADES FOR ELECTRICALLY RELATED DEMOLITION WORK WHICH MAY BE REQUIRED.

11) ALL ABANDONED CONDUITS SHALL BE CLEARED BACK TO RESPECTIVE SOURCES, EVEN IF SOURCES ARE OUTSIDE OF THE CONFINES OF THE PROJECT AREA. UNLESS DIRECTED OTHERWISE IN FIELD, ALL ABANDONED SYSTEMS CABLES SHALL BE DISCONNECTED AT BOTH ENDS AND REMOVED BACK TO RESPECTIVE SOURCES, EVEN IF SOURCES ARE OUTSIDE OF THE CONFINES OF THE PROJECT AREA. COORDINATE ALL WORK CAREFULLY WITH OWNER PRIOR TO BEGINNING ANY ELECTRICAL DEMOLITION WORK.

12) DETERMINE IN FIELD WHICH OF THE EXISTING BRANCH CIRCUITS WILL REMAIN ACTIVE. RECONNECT AND SCHEDULE SAME AS REQUIRED. EXISTING BRANCH CIRCUIT WIRING, NOT CONFLICTING WITH NEW CONSTRUCTION, MAY BE REUSED AT THE DISCRETION OF THE ELECTRICAL CONTRACTOR. IF SO, ENSURE THAT ALL REUSED SHARED NEUTRALS ARE PROPERLY BALANCED WITH THE RIGHT PHASE CONDUCTORS, ENSURE THAT CONDUCTOR INSULATION IS PROPERLY COLOR-CODED FOR ALL REUSED CONDUCTORS, AND ENSURE ALL CIRCUIT IDENTIFICATION BANDS ARE CORRECT ON ALL CONDUCTORS. RETYPE PANELBOARD DIRECTORIES FOR ALL PANELBOARDS AFFECTED BY THIS PROJECT.

13) PROVIDE NEW CONDUIT AS REQUIRED. ROUTING OF ALL NEW EXPOSED CONDUIT WORK IN THE EXISTING BUILDING SHALL BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION AND SHALL BE MOUNTED AS HIGH AS POSSIBLE IN ALL CASES. ALL WIRING SHALL BE NEW. EXISTING BRANCH CIRCUIT AND SYSTEMS CONDUIT, NOT CONFLICTING WITH NEW CONSTRUCTION, MAY BE REUSED AT THE DISCRETION OF THE ELECTRICAL CONTRACTOR. DO NOT EXCEED NEC REQUIRED CONDUIT FILL AND DO NOT INSTALL WIRING FED FROM DIFFERENT SOURCES IN COMMON CONDUIT (SEE SPECIFICATIONS).

14) THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMPORARY LIGHTING AND POWER WITHIN THE CONSTRUCTION SPACE. DERIVE TEMPORARY POWER FROM A LOCAL PANELBOARD AS DIRECTED BY OWNER'S REPRESENTATIVE. OWNER SHALL PAY FOR CURRENT FOR ALL TRADES. REFER TO GENERAL CONDITIONS. PROVIDE MINIMUM OF 10 FOOTCANDLES OF LIGHT AND PROVIDE GFI PROTECTION. INSTALLATION METHODS SHALL BE PER NEC.ALL PERMANENT WIRING SHALL BE INSTALLED IN CONDUIT. TEMPORARY BRANCH CIRCUIT POWER WIRING FOR PHASED CONSTRUCTION SHALL BE INSTALLED IN CONDUIT. TEMPORARY LOW VOLTAGE WIRING FOR PHASED CONSTRUCTION IS NOT REQUIRED TO BE INSTALLED IN CONDUIT, BUT MUST BE REMOVED AS SOON AS IT IS ABANDONED. PROVIDE ALL REQUIRED TEMPORARY POWER AND SYSTEMS WIRING/CONNECTIONS AS REQUIRED FOR ALL TEMPORARY OCCUPANCY AREA WHICH WILL BE USED TO ACCOMMODATE THE MULTIPLE CONSTRUCTION PHASES.

15) ALL WORK AND SYSTEM SHUTDOWNS SHALL BE CAREFULLY COORDINATED IN ADVANCE WITH OWNER'S REPRESENTATIVE AND ALL AFFECTED TRADES SO THAT NORMAL BUILDING ACTIVITIES AND OTHER CONSTRUCTION TRADES ARE MINIMALLY AFFECTED. ALL REQUIRED ELECTRICALLY RELATED DEMOLITION AND/OR NEW CONSTRUCTION WORK, WHICH WILL AFFECT ANY AND ALL OCCUPIED AREAS (INCLUDING THOSE WHICH ARE LOCATED OUTSIDE THE IMMEDIATE AREA OF PROJECT WORK) SHALL BE PERFORMED AT SPECIAL TIMES IF/AS DIRECTED BY OWNER'S REPRESENTATIVE IN FIELD.

16) WHERE INDICATED ON DRAWINGS, REMOVE EXISTING DEVICES, FIXTURES, EQUIPMENT, ETC. IN AFFECTED AREAS AND PROTECT DURING DEMOLITION AND CONSTRUCTION PHASES. CLEAN AND REINSTALL/RELOCATE THESE EXISTING DEVICES AS INDICATED ON DRAWINGS. MODIFY AND /OR EXTEND RELATED EXISTING WIRING IN CONDUIT AS REQUIRED. EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE HEREIN OR ON DRAWINGS, ALL ELECTRICAL WORK SHOWN ON NEW WORK PLANS SHALL BE NEW.

17) IF ANY EXISTING CODE OR SAFETY VIOLATIONS ARE DISCOVERED BY THE ELECTRICAL CONTRACTOR, THEY SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION (DETAILED IN WRITING) OF THE OWNER'S REPRESENTATIVE ALONG WITH THE CONTRACTOR'S PROPOSED COST FOR CORRECTIONS.

GENERAL ELECTRICAL PROJECT NOTES

A PROVIDE ALL JUNCTION BOXES, CONDUIT, WIRE, INSTALLATIONS, TERMINATIONS, ETC. AS NECESSARY FOR COMPLETE OPERATIONAL INSTALLATION OF KROGER-FURNISHED MATERIALS.

B ELECTRICAL CONTRACTOR RESPONSIBILITIES FOR KROGER SUPPLIED MATERIALS SHALL BE AS FOLLOWS:
1) RECEIVE, UNLOAD, STORE AND PROTECT PRODUCT ON SITE.
2) INSPECT PRODUCTS UPON RECEIPT FOR SHORTAGES, DAMAGES OR DEFECTS AND NOTIFY SUPPLIER WITHIN 24 HOURS.
3) NOTIFY SUPPLIER WITHIN 20 DAYS OF RECEIPT OF ANY HIDDEN DAMAGES FOR PRODUCTS REVIEWED.

C NEATLY INSTALL ALL CONDUIT, CABLES, ETC. PARALLEL AND PERPENDICULAR TO BUILDING STEEL.

D PROVIDE SWEEP BENDS, INSULATED THROAT FITTINGS (OR BUSHINGS) AND 200# DRAG LINE (PULL STRING) IN ALL EMPTY CONDUITS. "OVERHEAD JOIST SPACE" SHALL BE TAKEN TO MEAN AT THE BOTTOM CHORD OF JOISTS OF THE HIGH ROOF STRUCTURE, EVEN IF CONDUIT ORIGINATED IN AN AREA WITH A CEILING OR A LOWER ROOF STRUCTURE. INSTALL ALL CONDUITS CONCEALED WHEREVER POSSIBLE, FIELD COORDINATE ALL ROUTING AND TERMINATION DETAILS IN ADVANCE.

E ALL ELECTRICAL DEVICES, OUTLETS, JUNCTION BOXES, ETC. THAT ARE SHOWN AGAINST A WALL SHALL BE FLUSH MOUNTED IN THE WALL (IE. RECESSED IN WALL SO OPENING IS FLUSH WITH FINISHED WALL SURFACE). REFER TO EQUIPMENT SCHEDULE FOR MOUNTING HEIGHTS AND ADDITIONAL INFORMATION. ALSO SEE DETAILS ON SHEET E5 SERIES DRAWINGS WHERE APPLICABLE.

F PROVIDE A LOCK ON DEVICE ON ALL CIRCUIT BREAKERS PROTECTING CRITICAL CIRCUITS AND CIRCUITS THAT ARE DESIGNED WITH AN -*.

G INSTALL ELECTRICAL OUTLETS FOR REFRIGERATION ISLAND CASES IN A STRAIGHT LINE ALIGNED WITH THE HUB DRAWING. COORDINATE WITH PLUMBING DIMENSIONS SIGNED PLAN.

H PROVIDE 10 FEET OF FLEXIBLE CONDUIT FOR REFRIGERATED CASES SERVED FROM WALL JUNCTION BOXES AND 6 FEET FOR ISLAND REFRIGERATED CASES FOR CONNECTION TO CASES BY THE PHASE II EQUIPMENT CONTRACTOR.

I ALL WALL MOUNTED OUTLETS SERVING REFRIGERATED CASES WITH RETURN AIR PLENUM ABOVE SHALL BE ACCESSIBLE (WITH ALL WIRING PLENUM RATED AS/IF APPLICABLE).

J PROVIDE MINIMUM #12AWG/THHN BRANCH CIRCUIT WIRING. FOR RUNS EXCEEDING 50 FEET, PROVIDE MINIMUM #10AWG/THHN SIZE WIRING IN ACCORDANCE WITH NEC ARTICLE 210-19, 215-2, 310-15 AND 410 FOR VOLTAGE DROP, AND NEC TABLE B310-11 FOR DERATING FACTORS. WIRING SIZES SHOWN ON PLANS ARE MINIMUM. PROVIDE 3/4" CONDUIT UNLESS SPECIFICALLY SHOWN OTHERWISE. SIZE ALL CONDUITS AND JUNCTION BOXES BASED ON THW CONDUCTOR INSULATION IN ACCORDANCE WITH NEC. ALSO REFER TO SPECIFICATIONS.

K PROVIDE THE FOLLOWING MINIMUM WIRE SIZE TO THE FIRST OUTLET OF A 15 OR 20 AMPERE BRANCH CIRCUIT. PROVIDE MINIMUM #10AWG TO THE LAST OUTLET FOR ALL BRANCH CIRCUITS MORE THAN 200 FEET IN LENGTH.

DISTANCE	AWG WIRE SIZES
UP TO 100 FEET	#12
100 TO 200 FEET	#10
MORE THAN 200 FEET	#8 MINIMUM

PROVIDE MINIMUM AWG CONDUCTOR SIZES FOR GENERAL BRANCH CIRCUITING AS FOLLOWS. WHERE APPLICABLE INCREASE AS REQUIRED TO ACCOMMODATE VOLTAGE DROP.

OVERCURRENT PROTECTION	CU AWG WIRE SIZE	OVERCURRENT PROTECTION	CU AWG WIRE SIZE
15/20 AMPERE	#12	60/70 AMPERE	#4
25/30 AMPERE	#10	80 AMPERE	#3
40 AMPERE	#8	90 AMPERE	#2
50 AMPERE	#6	100 AMPERE	#1

L. REGARDLESS OF WHERE JB'S ARE SHOWN ON DRAWINGS, FEED CASES FROM WALL WHEREVER CASES ARE LOCATED AGAINST A WALL. INSTALL WALL OUTLET/JUNCTION BOXES FOR SUCH CASES SO THAT BOTTOMS OF BOXES ARE TWO (2) INCHES ABOVE TOP OF RESPECTIVE CASE (FIELD VERIFY).

M. NEW WORK SHOWN ON DRAWINGS IS SHOWN TO INDICATE MINIMUM REQUIREMENTS FOR THE NEW EQUIPMENT LAYOUT. EXISTING CONDUIT/OUTLET WORK MAY BE RE-USED WHEREVER POSSIBLE, SUBJECT TO BEING EQUIVALENT TO THE NEW WORK REQUIREMENTS SHOWN.

N. SAWCUT AND NEATLY PATCH (IN-KIND) EXISTING FLOOR SLAB AS REQUIRED FOR NEW UNDERFLOOR DUCT SYSTEM, ISLAND RELATED WORK, CHECKOUT AREA RACEWAYS, NEW GONDOLA/SHELVING RUNS, ETC.

O. ALL ITEMS ARE NEW, UNLESS OTHERWISE NOTED.

P. THE WORD 'PROVIDE' MEANS FURNISH AND INSTALL, UNLESS OTHERWISE NOTED.

GENERAL ELECTRICAL NOTES

THIS CONTRACTOR SHALL THOROUGHLY FAMILIARIZE HIMSELF WITH THE PLANS AND SHALL VERIFY EXISTING SITE CONDITIONS AT THE JOB SITE BEFORE SUBMITTING BID. FAILURE TO RECOGNIZE WORK REQUIRED SHALL BE AT THE EXPENSE OF THIS CONTRACTOR. NO CONSIDERATION SHALL BE GIVEN FOR ADDITIONAL COMPENSATION AFTER THE LETTING OF BIDS.

ENTIRE INSTALLATION SHALL BE PERFORMED IN A FIRST-CLASS WORKMANLIKE MANNER AND SHALL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES. THE COMPLETED SYSTEMS SHALL BE FULLY OPERATIONAL; ACCEPTANCE BY THE OWNER SHALL BE A CONDITION OF THE CONTRACT. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES IN ORDER TO AVOID INTERFERENCE'S, PRESERVE MAXIMUM HEADROOM, AND AVOID OMISSIONS. ALL MATERIALS, WORKMANSHIP AND EQUIPMENT SHALL BE GUARANTEED FOR ONE (1) YEAR AFTER SYSTEM ACCEPTANCE.

RECEPTACLES AND SWITCHES SHALL BE THE TYPE AS SHOWN ON THE DRAWINGS AND SHALL BE SPECIFICATION GRADE.

MINIMUM BRANCH WIRE SIZE SHALL BE #12 AWG COPPER EXCEPT FOR CONTROL AND SIGNAL CIRCUITS. INSULATION (INTERIOR) SHALL BE SOLID TYPE THHN OR THWN SIZES #12 THROUGH #10. SIZES #8 THROUGH 750 MCM SHALL BE STRANDED TYPE THHN OR THWN AT THE CONTRACTOR'S OPTION.

MINIMUM OUTLET BOXES SHALL BE 4" SQUARE, UNLESS OTHERWISE SPECIFIED.

CONTRACTOR SHALL NOT SCALE DRAWINGS FOR DIMENSIONS BUT SHALL CONTACT THE PROJECT ARCHITECT FOR ALL DIMENSIONAL DATA AND SHALL VERIFY EXACT LOCATION AND MOUNTING HEIGHTS OF ALL OUTLETS WITH ARCHITECT AND/OR OWNER PRIOR TO INSTALLATION.

GROUNDING SHALL COMPLY WITH REQUIREMENTS OF ALL APPLICABLE CODES.

ALL MATERIALS USED SHALL BE NEW AND BEAR THE U/L LABEL AND BE OF THE APPROPRIATE NEMA STANDARD.

THIS CONTRACTOR SHALL ALLOW IN HIS INITIAL BID THE COST OF SERVICES ON ALL EQUIPMENT INSTALLED UNDER HIS CONTRACT FOR A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE OF THE WORK.

LAYOUT IS DIAGRAMMATIC AND WORK SHALL BE INSTALLED TO MEET FIELD CONDITIONS AND EQUIPMENT SELECTED. PROVIDE SHOP DRAWINGS AS REQUIRED AND VERIFY ALL EQUIPMENT.

CONTRACTOR SHALL INCLUDE ALL MISCELLANEOUS ITEMS REQUIRED TO COMPLETE THE WORK.

CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND REQUIRED INSPECTION FEES.

IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE AND REVIEW THE ELECTRICAL CHARACTERISTICS, AMPACITY AND OTHER REQUIREMENTS OF ALL EQUIPMENT PRIOR TO INSTALLATION.

IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE THE LOCATIONS OF CONDUIT ROUTING, EQUIPMENT, LIGHTING, ETC. WITH ALL OTHER TRADES IN THE FIELD PRIOR TO INSTALLATION.

THE ENTIRE INSTALLATION OF ALL COMPONENTS OF THIS PROJECT SHALL COMPLY WITH ALL FEDERAL ADA REQUIREMENTS. VERIFY EXACT LOCATIONS AND HEIGHTS OF ALL FIXTURES AND OUTLETS BEFORE INSTALLATION TO INSURE COMPLIANCE WITH FEDERAL REGULATIONS.

FOR CLARITY OF ALL PLANS, SOME CONDUIT AND WIRE HAS NOT BEEN SHOWN. IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO FURNISH AND INSTALL COMPLETE AND OPERATING SYSTEMS INCLUDING ALL CONDUIT AND WIRING.

THIS CONTRACTOR SHALL MAINTAIN THE FIRE RATED INTEGRITY OF ALL FLOORS, CEILINGS AND WALLS. ALL PENETRATIONS THROUGH FIRE RATED BUILDING ELEMENTS SHALL BE EFFECTIVELY SEALED USING APPROVED MATERIALS AND METHODS. ALL LIGHTING FIXTURES MOUNTED IN FIRE RATED CEILINGS SHALL MAINTAIN THE INTEGRITY OF THE FIRE RATED CEILINGS USING APPROVED MATERIALS AND METHODS. REFER TO ARCHITECTURAL DRAWINGS FOR FIRE RATINGS.

THIS CONTRACTOR SHALL INSPECT THE COMPLETE SET OF DRAWINGS AND SPECIFICATIONS TO DETERMINE HIS ENTIRE SCOPE OF WORK. THIS CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE EXISTING CONDITIONS AND EXTENT OF DEMOLITION AND NEW WORK FOR THIS PROJECT PRIOR TO SUBMITTING HIS BID.

THE ELECTRICAL INSTALLATION IS TO BE IN STRICT ACCORDANCE WITH THE APPLICABLE RULES AND REGULATIONS OF ALL LOCAL, STATE AND FEDERAL ELECTRICAL CODES AND THE LOCAL UTILITY COMPANY REQUIREMENTS OR ANY OTHER AUTHORITIES HAVING LAWFUL JURISDICTION.

ALL SITE UNDERGROUND BRANCH CIRCUIT WIRING IN CONDUIT SHALL BE TYPE THWN OR XHHW.

ALL UNDERFLOOR, UNDERGROUND OR EXPOSED TO THE WEATHER CONDUIT SHALL BE HEAVYWALL, GALVANIZED RIGID STEEL. ALL ABOVE GRADE CONDUITS SHALL BE METALLIC. MINIMUM SIZE 3/4".

PROVIDE BARRIERS TO SEPARATE DIFFERENT PHASES IN 277 VOLT GANGED SWITCH BOXES.

ALL WIRE SHALL BE INSTALLED IN THINWALL, ELECTRICAL METALLIC TUBING (EMT) CONDUIT UNLESS OTHERWISE NOTED. MINIMUM SIZE SHALL BE 3/4" FOR BRANCH CIRCUIT WIRING, DROPS TO SWITCHES AND BRANCH DEVICES MAY BE 1/2" UNLESS OTHERWISE NOTED ON DRAWINGS. ALL THINWALL FITTINGS SHALL BE OF THE STEEL COMPRESSION GLAND TYPE PER ALL APPLICABLE CODE REQUIREMENTS. ALL CONDUITS SHALL BE CONCEALED WHERE POSSIBLE, WHERE EXPOSED, THIS CONTRACTOR SHALL RUN CONDUITS IN STRAIGHT LINES PARALLEL AND/OR PERPENDICULAR TO THE BUILDING CONSTRUCTION. CONDUITS INSTALLED IN AREAS SUBJECT TO MECHANICAL DAMAGE SHALL BE RIGID GALVANIZED, OR INTERMEDIATE METAL TYPE.

THIS CONTRACTOR SHALL PROVIDE ALL TEMPORARY WIRING FOR ALL TRADES FOR CONSTRUCTION EQUIPMENT (Ie: HANDTOOLS, WELDERS, PIPE BENDERS, ETC.) AND CONSTRUCTION LIGHTING PER THE LATEST OSHA STANDARDS. INCLUDE ALL COSTS IN THE BASE BID. THIS CONTRACTOR SHALL ESTABLISH SAFE WORKING PROCEDURES FOR THE PROTECTION OF THE WORKMEN IN ALL PHASES OF WORK, COMPLYING WITH THE APPLICABLE PROVISIONS OF ALL CITY, STATE AND FEDERAL SAFETY LAWS (OSHA).

ELECTRICAL SYMBOLS

SYMBOL	DESCRIPTION
A 2a	FLUORESCENT LIGHT FIXTURE. CAPITAL LETTER DENOTES FIXTURE TYPE, NUMERAL INDICATES CIRCUIT ASSIGNMENT, SUBSCRIPT LETTER DENOTES SWITCH LEG. SHADING OF ANY FIXTURE INDICATES CIRCUITED TO UNSWITCHED EMERGENCY AND/OR NIGHT LIGHT CIRCUIT. SEE "LIGHTING FIXTURE SCHEDULE."
	EXIT SIGN UNIVERSAL MOUNT SHADED AREA INDICATES FACE, ARROWS AS REQUIRED. SEE "LIGHTING FIXTURE SCHEDULE."
	LIGHTING FIXTURE OUTLET - SEE "LIGHTING FIXTURE SCHEDULE"
	SELF CONTAINED EMERGENCY LIGHTING FIXTURE, WITH BATTERY BACK-UP AND SOLID STATE CHARGER
\$a	SINGLE POLE TOGGLE SWITCH, 48"A.F.F., SUBSCRIPT LETTER DENOTES SWITCH LEG, 20 AMP, 120 VOLT
$\$^{3}$	THREE WAY TOGGLE SWITCH, 48"A.F.F., 20AMP, 120VOLT.
$\$^{T}$	MANUAL SINGLE PHASE MOTOR STARTER WITH THERMAL OVERLOAD PROTECTION. "P" DENOTES DEVICE FURNISHED WITH PILOT LIGHT., 48"A.F.F. UNLESS INDICATED OTHERWISE
$\$^{D}$	DIMMER SWITCH, 48"A.F.F.
$\$^{FS}$	FAN SPEED SWITCH, 48"A.F.F.
	NON FUSED SAFETY SWITCH, RATING AS INDICATED
F	FUSED DISCONNECT SWITCH, SWITCH AND FUSE RATING AS INDICATED.
	3-PHASE COMBINATION MAGNETIC STARTER WITH NEMA SIZE INDICATED BY E.C.
	ISOLATED GROUND DUPLEX RECEPTACLE, NEMA 5-20R, 15"A.F.F. U.N.O.
	ISOLATED GROUND DUPLEX RECEPTACLE, NEMA 5-20R, CROSS LINE DENOTES 6" ABOVE COUNTER OR BACKSPLASH U.N.O.
	DOUBLE DUPLEX ISOLATED GROUND RECEPTACLE, NEMA 5-20R, 15"A.F.F. U.N.O.
	SINGLE RECEPTACLE, NEMA 5-20, 15" A.F.F. U.N.O.
	DUPLEX RECEPTACLE, NEMA 5-20R, 15"A.F.F. U.N.O.
	DUPLEX RECEPTACLE, NEMA 5-20R, CROSS LINE DENOTES 6" ABOVE COUNTER OR BACKSPLASH U.N.O.
	DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R, 15"A.F.F. U.N.O.
	DUPLEX RECEPTACLE, NEMA 5-20R, SHADING DENOTES GROUND FAULT CIRCUIT INTERRUPTER "GFCI"., 15"A.F.F. U.N.O.
	DUPLEX RECEPTACLE, NEMA 5-20R, SHADING DENOTES GROUND FAULT CIRCUIT INTERRUPTER "GFCI", CROSS LINE DENOTES 6" ABOVE COUNTER OR BACKSPLASH U.N.O.
	DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R, SHADING DENOTES GROUND FAULT CIRCUIT INTERRUPTER "GFCI"., 15"A.F.F. U.N.O.
	CEILING MOUNTED DUPLEX RECEPTACLE, NEMA 5-20R
	RECESSED FLOOR-BOX / POKE-THRU DEVICE. VERIFY EXACT DEVICE IN FIELD. MOUNTED FLUSH IN FLOOR
	SPECIAL PURPOSE RECEPTACLE NEMA CONFIGURATION AS REQUIRED BY MANUFACTURERS EQUIPMENT. VERIFY CONDUIT, CONDUCTOR AND DISCONNECT/CIRCUIT BREAKER REQUIREMENTS PRIOR TO ROUGH-IN.
	LIGHTING AND/OR POWER PANEL
	POWER DISTRIBUTION PANEL
	MOTOR
PE	PHOTO ELECTRIC CONTROL, ROOF MOUNTED, 120V OPERATION, 20A RATED
	CONDUIT ROUTED CONCEALED IN CEILING OR WALL CONSTRUCTION. (CROSS LINES DENOTE NUMBER OF WIRES.)
	CONDUIT ROUTED EXPOSED, PARALLEL OR PERPENDICULAR TO WALLS.
	CONDUIT ROUTED CONCEALED IN CONCRETE FLOOR SLAB OR UNDERGROUND.
J	AUXILIARY JUNCTION BOX
	FLEXIBLE CONDUIT CONNECTION
	HOME RUN TO PANELBOARD (CONDUIT; PHASE CONDUCTORS; NEUTRAL CONDUCTOR; EQUIPMENT GROUND; ISOLATED GROUND)
	TELEPHONE OUTLET, WITH 3/4" CONDUIT STUB ABOVE ACCESSIBLE CEILING, 15"A.F.F. U.N.O.
	DATA SYSTEM OUTLET WITH 3/4" CONDUIT STUB ABOVE ACCESSIBLE CEILING, 15"A.F.F. U.N.O.
WP	WEATHER PROOF (NEMA 3R)
F.B.O.	FURNISHED BY OTHERS
W	DENOTES 6" ABOVE COUNTER OR BACKSPLASH U.N.O.
U.N.O.	UNLESS NOTED OTHERWISE
A.F.F.	ABOVE FINISH FLOOR
P.P.	P.P. - DENOTES COMBINATION POWER POLE (POWER AND DATA)
$\$^{VS}$	VACANCY OCCUPANT WALL SWITCH; 48" AFF
OS	OCCUPANCY OCCUPANT WALL SWITCH; 48" AFF

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HIGHLAND PARK PARK DISTRICT - HIDDEN CREEK FILTRATION SYSTEM RENOVATION
1220 FREDRICKSON PLACE
HIGHLAND PARK, IL 60035

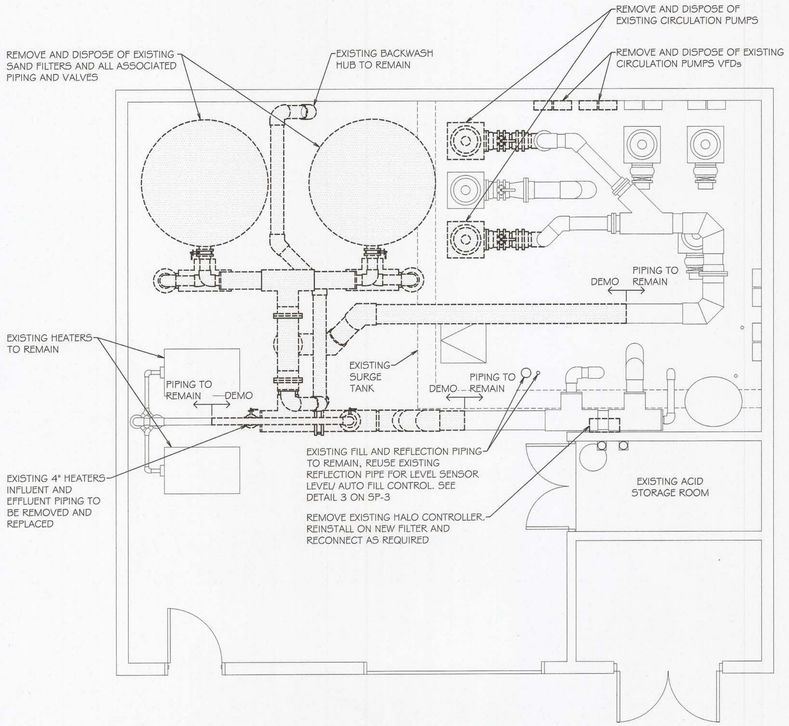
GENERAL NOTES AND SYMBOL LIST

ISSUE

TO	DATE

CHECK: RSK
DRAWN: DK
JOB: 1913641A

E1.4



1 DEMOLITION FILTER ROOM EQUIPMENT LAYOUT
SCALE: 1/4" = 1'-0"

DATA	EXISTING POOL			
	ACTIVITY POOL	LAP POOL	PLUNGE POOL	TOTAL
SURFACE AREA:	8,290 SQ.FT.	3,679 SQ.FT.	750 SQ.FT.	12,719 SQ.FT.
PERIMETER:	363'-2 1/2"	218'-2"	85'-0"	666'-4 1/2"
WATER DEPTHS:	0" TO 4'-0"	4'-0" TO 12'-3"	3'-0" TO 3'-6"	-
CAPACITY:	98,736 GALLONS	185,212 GALLONS	11,785 GALLONS	295,733 GALLONS
FILTER FLOWRATE:	1,097 G.P.M.	772 G.P.M.	197 G.P.M.	2,066 G.P.M.
TURNOVER RATE:	90 MINUTES	4 HOURS	1 HOUR	-

SCOPE OF WORK:

1. DEMOLITION OF TWO EXISTING ACTIVITY POOL FILTERS AND ALL ASSOCIATED PIPING AND VALVES AS SHOWN ON THE DRAWINGS.
2. DEMOLITION OF TWO (2) EXISTING ACTIVITY POOL CIRCULATION PUMPS AND ALL ASSOCIATED PIPING AND VALVES AS SHOWN ON THE DRAWINGS. THE FOLLOWING NEW EQUIPMENT SHALL BE PROVIDED BY THE OWNER AND INSTALLED BY CONTRACTOR: GOULDS CIRCULATION PUMPS.
3. DEMOLITION OF EXISTING MODULATING VALVE WITH FLOATS AT FLANGE AND INSTALLING NEW NORMALLY CLOSED BUTTERFLY MODULATING VALVE WITH EXTENDED PNEUMATIC ACTUATOR.
4. DEMOLITION OF EXISTING MAIN DRAIN ISOLATION/THROTTLING VALVES AND INSTALLATION OF NEW MAIN DRAIN ISOLATION/THROTTLING VALVES WITH EXTENDED GEAR OPERATORS.
5. CONTRACTOR SHALL INSTALL NEW AIR COMPRESSOR AND AIR DRYER.
6. CONTRACTOR SHALL INSTALL ALL EQUIPMENT PROVIDED BY OWNER (SEE EQUIPMENT LIST ON SP-2). CONTRACTOR SHALL PROVIDE ALL ASSOCIATED PIPING, VALVES AND PRESSURE GAUGES FOR AN OPERATIONAL SYSTEM. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF DELIVERY OF ALL FILTRATION EQUIPMENT AND UNLOADING AND STORING IN THE EXISTING MECHANICAL BUILDING.
7. RELOCATE TEMPERATURE LIMITING DEVICES AS NECESSARY.
8. REUSE AND RELOCATE EXISTING THERMOMETERS AND FLOW METERS AS NECESSARY.
9. ALL BONDING AND GROUNDING AS REQUIRED PER NEC ARTICLE 680.

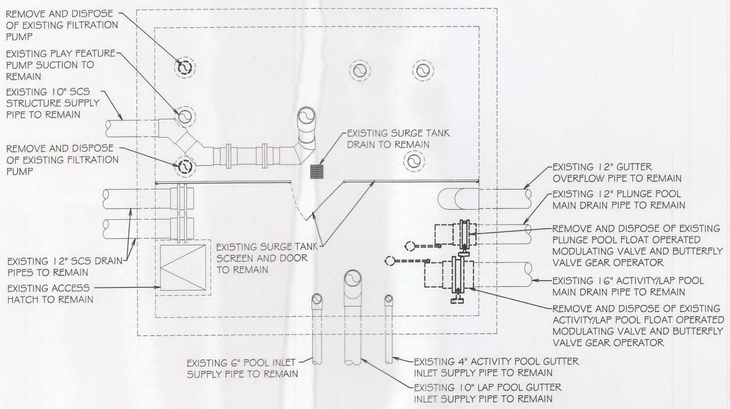
EXISTING CONDITIONS NOTES:

1. EXISTING SLIP-RESISTANT CONCRETE FLOOR IN EQUIPMENT ROOM SLOPES TO EXISTING FLOOR DRAIN.
2. EXISTING EQUIPMENT ROOM IS LIGHTED, VENTILATED, EQUIPPED WITH A HOSE BIB, AND IS NOT ACCESSIBLE TO POOL PATRONS.

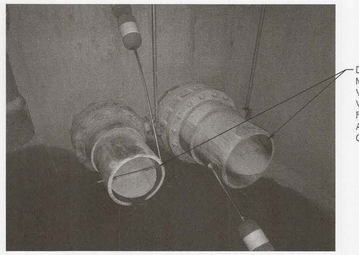
DEMOLITION NOTES:

1. DEMOLITION DRAWINGS ARE SCHEMATIC AND MAY NOT INCLUDE ALL MISCELLANEOUS WORK NECESSARY TO COMPLETE THE DEMOLITION AND NEW WORK. CONTRACTOR SHALL INCLUDE ALL MISCELLANEOUS NECESSARY WORK IN BASE BID. THE FINISHED FILTER RENOVATION MUST BE COMPLETE, MEET CODE REQUIREMENTS AND FULLY OPERATIONAL.
2. CONDITIONS SHOWN ON THESE DRAWINGS ARE EXISTING BASED ON FIELD MEASUREMENTS AND DOCUMENTS AVAILABLE. OWNER, AND AQUATIC ENGINEER ASSUME NO RESPONSIBILITY FOR ACCURACY OR COMPLETENESS OF INFORMATION. CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY ALL INFORMATION.
3. CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL DEBRIS IN A LEGAL LAWFUL MANNER PER LOCAL CODE, STATE CODE AND REGULATIONS.
4. SEWERS, INLETS, FLOOR AND DECK DRAINS, ETC... ARE TO BE PROTECTED FROM DEBRIS AND SEDIMENTATION DURING DEMOLITION AND CONSTRUCTION.
5. COORDINATION BETWEEN TRADES IS REQUIRED AND IS THE RESPONSIBILITY OF THE POOL CONTRACTOR.
6. THESE DRAWINGS ARE INTENDED FOR SCHEMATIC USE ONLY. FINAL PIPE LOCATIONS SHALL BE FIELD VERIFIED AND COORDINATED WITH OTHER TRADES BY POOL CONTRACTOR.

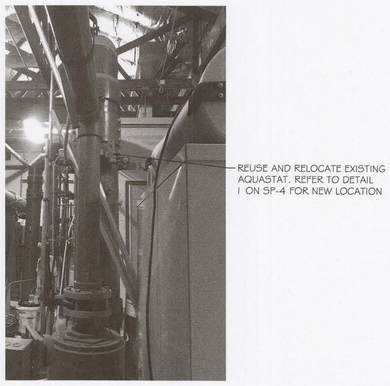
[ ] INDICATES REMOVAL AND DISPOSAL



2 EXISTING SURGE TANK LAYOUT
SCALE: 1/4" = 1'-0"



3 EXISTING MAIN DRAIN MODULATING VALVES



4 EXISTING FILTERED WATER SUPPLY

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PARK DISTRICT OF HIGHLAND PARK - HIDDEN CREEK
FILTRATION SYSTEM RENOVATION
1220 FREDRICKSON PLACE
HIGHLAND PARK, IL 60035

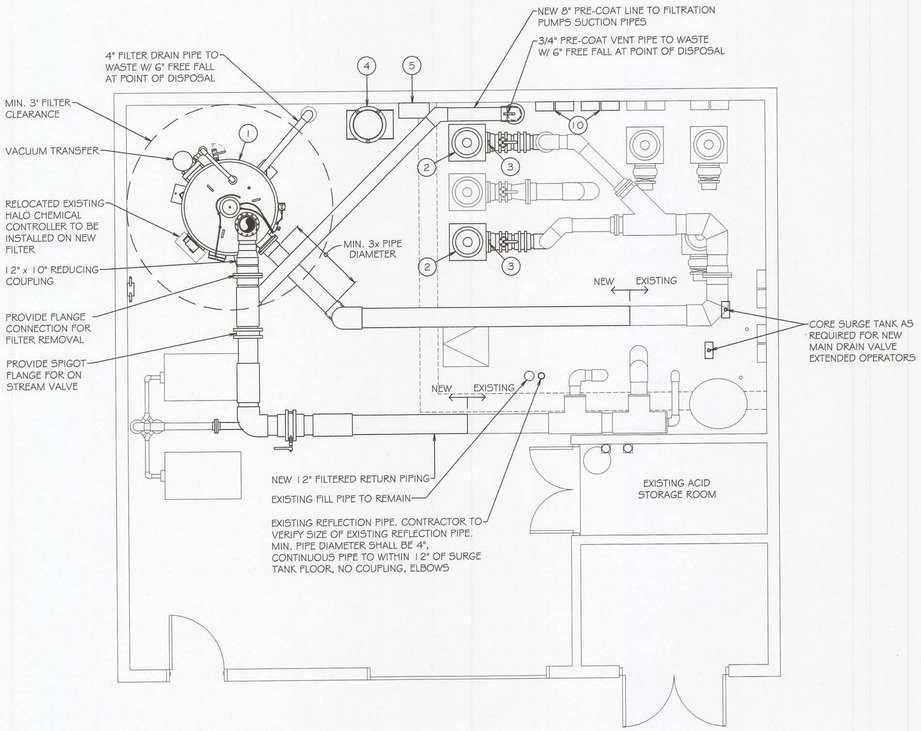
ISSUE

TO	DATE
Issue for Bid/Permit	2/14/20

CHECK:RSK
DRAWN: BZ
JOB: 1913641A

SP-1

DEMOLITION FILTER ROOM LAYOUT, SURGE TANK LAYOUT, POOL DATA AND NOTES



1 NEW FILTER ROOM EQUIPMENT LAYOUT

SCALE: 1/4" = 1'-0"

MINIMUM REQUIRED SUPPORT SPACING (IN FEET)

NOM PIPE SIZE (IN)	PVC PIPE									
	SCHEDULE 40					SCHEDULE 80				
	TEMP (°F)					TEMP (°F)				
	60	80	100	120	140	60	80	100	120	140
1/2	4 1/2	4 1/2	4	2 1/2	2 1/2	5	4 1/2	4 1/2	3	2 1/2
3/4	5	4 1/2	4	2 1/2	2 1/2	5 1/2	5	4 1/2	3	2 1/2
1	5 1/2	5	4 1/2	3	2 1/2	6	5 1/2	5	3 1/2	3
1 1/4	5 1/2	5 1/2	5	3	3	6	6	5 1/2	3 1/2	3
1 1/2	6	5 1/2	5	3 1/2	3	6 1/2	6	5 1/2	3 1/2	3 1/2
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2 1/2	7	6 1/2	6	4	3 1/2	7 1/2	7 1/2	6 1/2	4 1/2	4
3	7	7	6	4	3 1/2	8	7 1/2	7	4 1/2	4
4	7 1/2	7	6 1/2	4 1/2	4	9	8 1/2	7 1/2	5	4 1/2
6	8 1/2	8	7 1/2	5	4 1/2	10	9 1/2	9	6	5
8	9	8 1/2	8	5	4 1/2	11	10 1/2	9 1/2	6 1/2	5 1/2
10	10	9	8 1/2	5 1/2	5	12	11	10	7	6
12	11 1/2	10 1/2	9 1/2	6 1/2	5 1/2	12	11	10	7	6

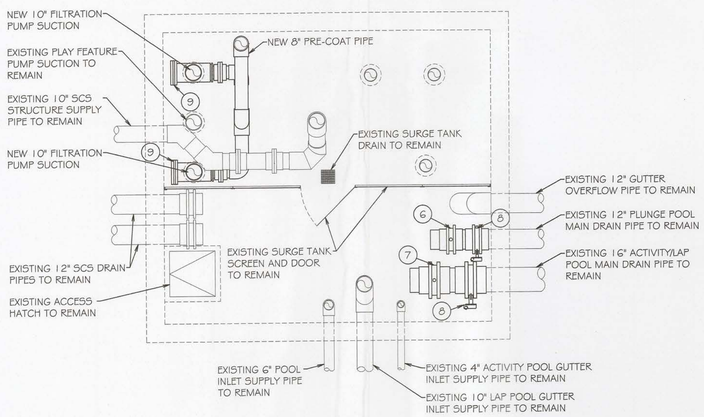
SWIMMING POOL EQUIPMENT LIST

THE EQUIPMENT MANUFACTURERS AND CATALOG NUMBERS LISTED BELOW, AND NOT SPECIFICALLY MENTIONED IN THE SPECIFICATIONS, ARE SHOWN TO PROVIDE A STANDARD. EQUIPMENT BY OTHER MANUFACTURERS WILL BE APPROVED IF SAID EQUIPMENT IS SHOWN TO BE EQUAL TO THAT SPECIFIED.

ITEM	DESCRIPTION	MANUFACTURER	CATALOG NO.	QTY.
1	REGENERATIVE PRESSURE DE FILTER, 1,538.8 SQ. FT. TOTAL FILTER AREA, 1.34 GPM/SQ. FT. FILTRATION RATE. PROVIDE WITH ALL ASSOCIATED REMOTE CONTROL VALVES. PROVIDE WITH VACUUM TRANSFER SYSTEM. THE FILTER SHALL BE PROVIDED WITH INFLUENT AND EFFLUENT PRESSURE GAUGES.	FILTREX	EC2100	1
2	VERTICAL TURBINE PUMP, 1,033 GPM @ 80 TDH (EACH PUMP), 30 HP, 1,770 RPM, 230/460 V, 3-PHASE, WP-1 MOTOR STAINLESS STEEL IMPELLER, DUCTILE IRON HEAD, 10" W/ MECHANICAL SEAL. FLANGED COLUMN WITH COUPLED SHAFT, 10" FLANGED INLET, EPOXY COATING. PROVIDE WITH SOLE PLATE.	GOULDS	13CMC 1 STAGE	2
3	PRESSURE GAUGE, 4 1/2" ALUMINUM CASE. PROVIDE WITH SNUBBER AND GAUGE COCK.	MARSH	P14546	2
4	AIR COMPRESSOR, 3 HP, 208 V, 3-PHASE, 60 GALLON VERTICAL RECEIVER TANK. PROVIDE WITH THE FOLLOWING ACCESSORIES: AIR PRESSURE GAUGE, ASME RELIEF VALVE, CHECK VALVE, BELT GUARD, PRESSURE SWITCH, AIR FILTER/SILENCER, AUTOMATIC TANK DRAIN, STARTER. PROVIDE ELECTRICAL CONNECTION, BONDING WIRE AND ALL AIR-LINE CONNECTIONS.	JENNY	G3A-60V	1
5	AIR DRYER - 1/6 H.P., 120 VOLT, SINGLE PHASE, 60 Hz, 15 CFM CAPACITY, WITH BY-PASS VALVE AND WALL MOUNT BRACKET. PROVIDE WITH AIR/WATER SIGHT GLASS BULB.	HANKISON	HPR15	1
6	12" BUTTERFLY MODULATING VALVE WITH SPRING TO CLOSE ACTUATOR, ELECTRO-PNEUMATIC POSITIONER AND EXTENDED OPERATOR ABOVE MECHANICAL ROOM FLOOR. THE VALVE EXTENSION SHALL BE RIGIDLY SUPPORTED WITH STAINLESS STEEL SUPPORTS AND FASTENERS AS REQUIRED.	BRAY	SERIES 30/31	1
7	16" BUTTERFLY MODULATING VALVE WITH SPRING TO CLOSE ACTUATOR, ELECTRO-PNEUMATIC POSITIONER AND EXTENDED OPERATOR ABOVE MECHANICAL ROOM FLOOR. THE VALVE EXTENSION SHALL BE RIGIDLY SUPPORTED WITH STAINLESS STEEL SUPPORTS AND FASTENERS AS REQUIRED.	BRAY	SERIES 30/31	1
8	GEAR OPERATOR. PROVIDE NEW EXTENDED OPERATORS FOR EACH VALVE. EXTENDED OPERATOR SHALL EXTEND 12" ABOVE MECHANICAL ROOM FLOOR. ALL EXTENDED OPERATORS SHALL BE STAINLESS STEEL WITH STAINLESS STEEL HARDWARE. CONNECTION TO GEAR OPERATOR STEM SHALL BE 1/4" STAINLESS STEEL BOLT. THE VALVE EXTENSION SHALL BE RIGIDLY SUPPORTED WITH STAINLESS STEEL SUPPORTS AND FASTENERS AS REQUIRED.	BRAY	040300-21202003	2
9	SWING CHECK VALVE, WAFER TYPE, 10", STAINLESS STEEL.	TITAN FLOW CONTROL, INC.	CV 12-55	2
10	VARIABLE FREQUENCY DRIVE - 30 H.P. WITH CONFORMAL COATING, 3-CONTACTOR BYPASS, MAIN AND DRIVE FUSING, MAIN DISCONNECT, 36 MONTH WARRANTY AND FACTORY START-UP	DANFOSS	FC102	2
11	EXISTING HALO CONTROLLER (UPGRADED)	INTEGRATED AQUATIC ENVIRONMENTS	HALO SYSTEM REGENERATIVE CONTROLLER	1

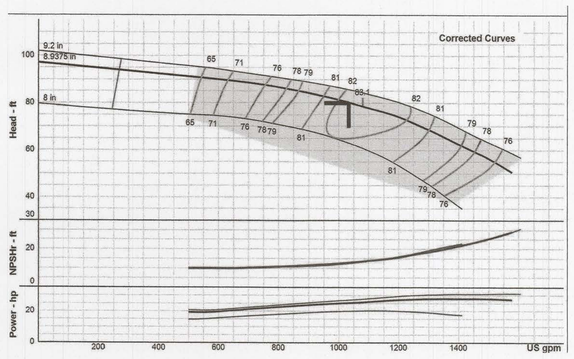
ELECTRICAL REQUIREMENTS

ITEM OF EQUIPMENT	VOLTAGE	PHASE	H.P. / AMPS	QUANTITY	CONTROLS & INTERLOCKS
ACTIVITY POOL FILTRATION PUMPS	230/460	3	30 H.P.	TWO	WIRING TO V.F.D.
AIR COMPRESSOR	208	3	3 H.P.	ONE	-
AIR DRYER	120	1	1/6 H.P.	ONE	-



2 SURGE TANK LAYOUT

SCALE: 1/4" = 1'-0"



3 NEW CIRCULATION PUMP CURVE

PLUMBING NOTES

1. ALL PLUMBING WORK, THROUGHOUT THE ENTIRE SWIMMING POOL PROJECT, SHALL COMPLY AND BE IN ACCORDANCE WITH THE ILLINOIS STATE PLUMBING CODE.
2. PIPE MATERIALS FOR ALL POOL RECIRCULATION LINES TO BE, AS PER PLAN, SCHEDULE 80 PVC(ASTM D1785), UNLESS OTHERWISE SPECIFIED IN ACCORDANCE WITH THE STATE OF ILLINOIS PLUMBING CODE. PVC PIPING SHALL BE STAMPED WITH N.S.F. SEAL OF APPROVAL.
3. THE INFLUENT AND EFFLUENT HEATER PIPING SHALL CONFORM TO THE MATERIAL SPECIFICATIONS AS APPROVED FOR HOT WATER DISTRIBUTION APPLICATIONS IN THE ILLINOIS PLUMBING CODE. THE HEATER CONNECTIONS SHALL BE CPVC. CONTRACTOR SHALL MATCH EXISTING PIPING.
4. EACH FLOWMETER SHALL BE LOCATED FIVE (5) STRAIGHT PIPE DIAMETERS UPSTREAM AND TEN (10) STRAIGHT PIPE DIAMETERS DOWNSTREAM FROM ANY VALVES, ELBOWS OR OTHER SOURCES OF TURBULENCE.
5. EACH FILTER DRAIN SHALL BE PIPED TO WASTE WITH A SIX (6) INCH FREE FALL AT THE POINT OF DISPOSAL.
6. PIPING SHALL BE DESIGNED TO CARRY THE REQUIRED QUANTITIES OF WATER AT VELOCITIES NOT EXCEEDING 3 FEET PER SECOND IN GRAVITY PIPING, 5 FEET PER SECOND IN SUCTION PIPING, AND 10 FEET PER SECOND IN PRESSURE PIPING.
7. THESE DRAWINGS ARE INTENDED FOR SCHEMATIC USE ONLY. FINAL PIPE LOCATIONS TO BE FIELD VERIFIED WITH ALL OTHER TRADES BY POOL CONTRACTOR.

BONDING NOTES:

1. CONTRACTOR SHALL BOND NEW FILTRATION PUMP MOTOR AND HEATER TO THE EXISTING BONDING GRID IN ACCORDANCE WITH ARTICLE 680.26 OF THE 2008 NATIONAL ELECTRICAL CODE. PROVIDE AN APPROVED BONDING LUG/CLAMP ON ALL EXISTING ITEMS AND CONNECT WITH A #8 SOLID BARE COPPER BONDING WIRE.

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FILTRATION SYSTEM RENOVATION
1220 FREDRICKSON PLACE
HIGHLAND PARK, IL 60035

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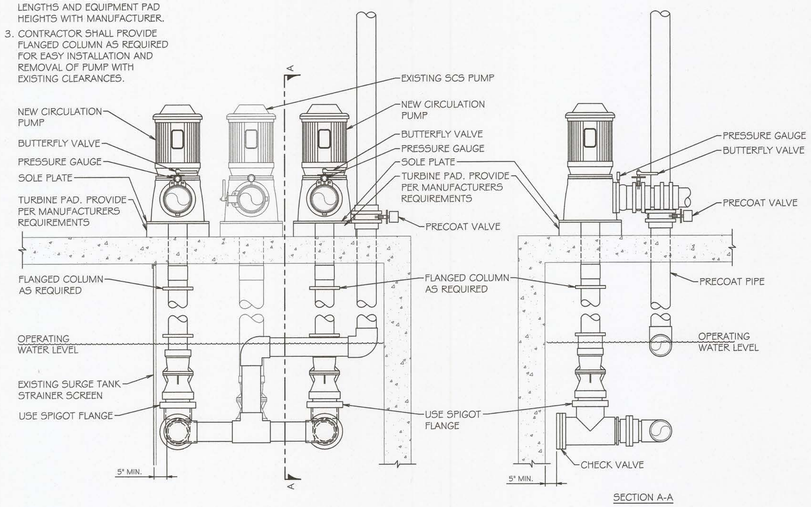
SP-2

NEW FILTER ROOM LAYOUT, SURGE TANK LAYOUT, EQUIPMENT LIST AND NOTES

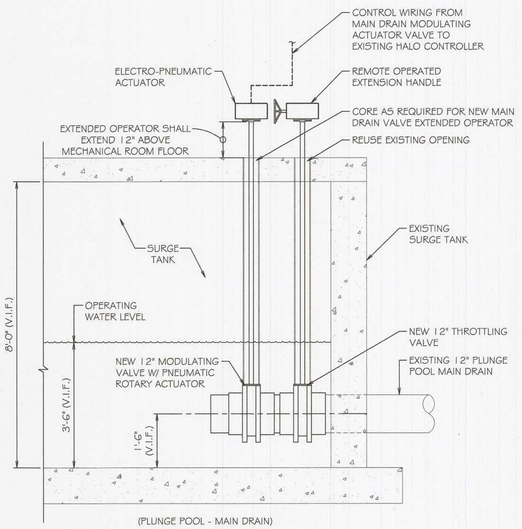
NOTE:

1. MINIMUM SUBMERGENCE SHALL BE 36" BELOW SURGE TANK OPERATING WATER LEVEL.
2. EQUIPMENT SUPPLIER SHALL VERIFY TURBINE COLUMN LENGTHS AND EQUIPMENT PAD HEIGHTS WITH MANUFACTURER.
3. CONTRACTOR SHALL PROVIDE FLANGED COLUMN AS REQUIRED FOR EASY INSTALLATION AND REMOVAL OF PUMP WITH EXISTING CLEARANCES.



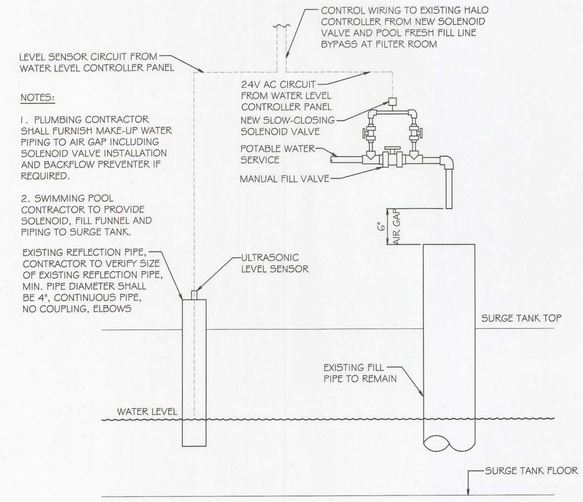
1 FILTRATION PUMPS INSTALLATION

SCALE: 3/8" = 1'-0"



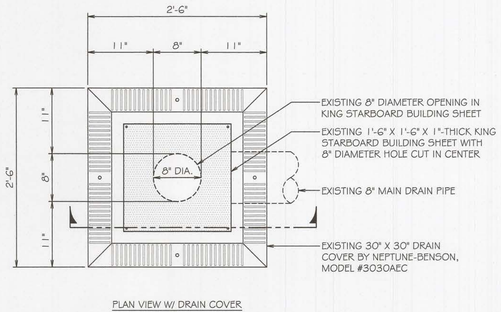
3 MODULATING VALVE DETAIL

SCALE: 1/2" = 1'-0"

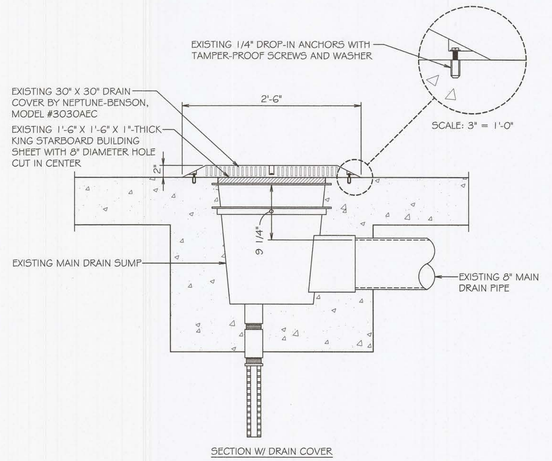


2 TYPICAL WATER LEVEL CONTROLLER DETAIL

NOT TO SCALE



PLAN VIEW W/ DRAIN COVER



SECTION W/ DRAIN COVER

4 EXISTING MAIN DRAIN DETAIL

(PLUNGE POOL, LAP POOL - QTY. 6) SCALE: 1" = 1'-0"

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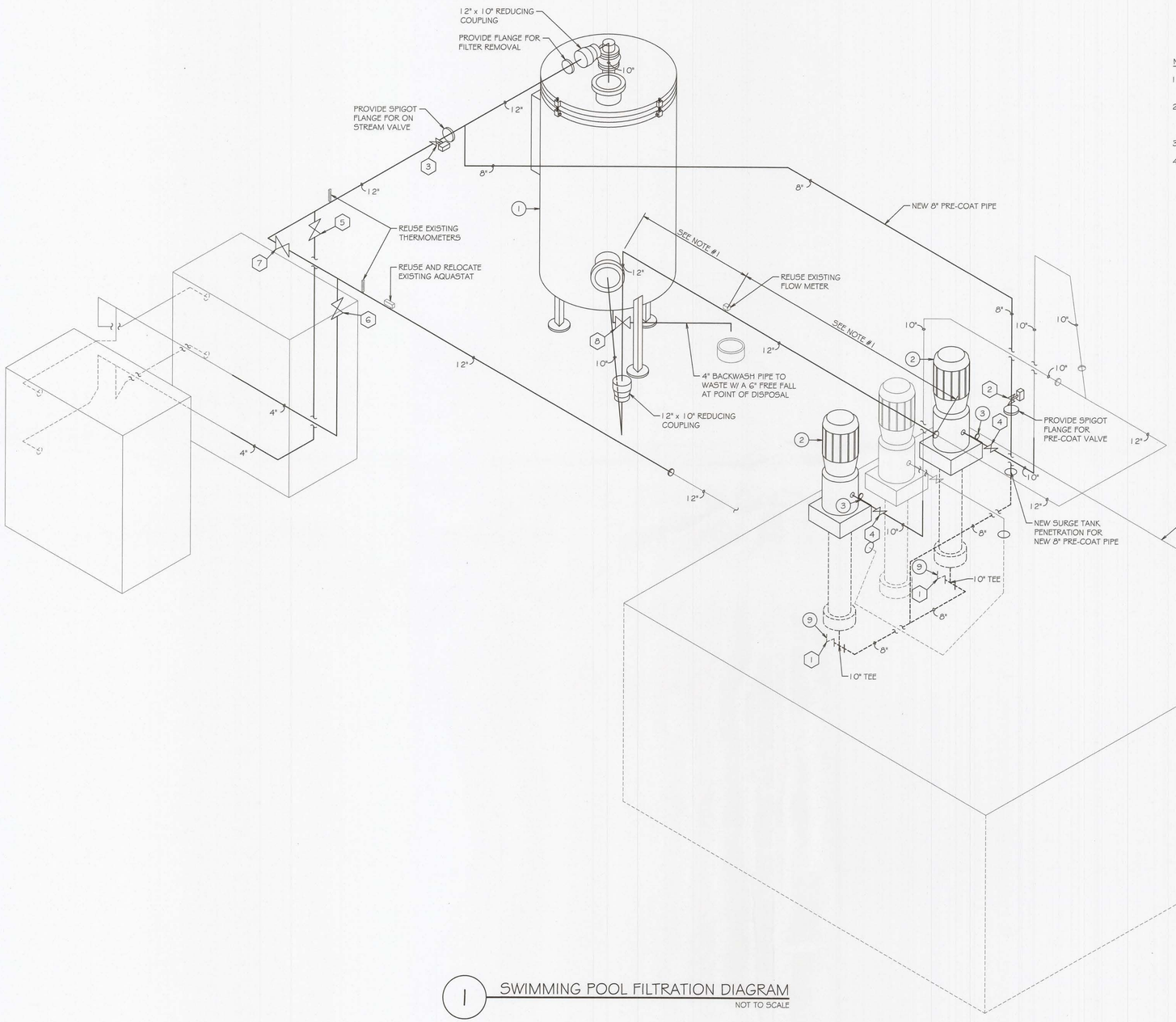
SP-3
DETAILS



1 SWIMMING POOL FILTRATION DIAGRAM
NOT TO SCALE

VALVE LEGEND

KEY ⊖

NO.	VALVE DESCRIPTION	TYPE	SIZE	QUANTITY
1.	FILTRATION PUMP SUCTION	CHECK	10"	2
*2.	FILTER PRECOAT	R.C.V.	8"	1
*3.	ON-STREAM	R.C.V.	12"	1
4.	FILTRATION PUMP DISCHARGE	B.F. GEAR	8"	2
5.	HEATER INFLUENT	T.U. BALL	2"	1
6.	HEATER EFFLUENT	T.U. BALL	2"	1
7.	HEATER BY-PASS	B.F. GEAR	12"	1
8.	FILTER BACKWASH/DRAIN	B.F. GEAR	4"	1

T.U. = TRUE UNION B.F. = BUTTERFLY R.C.V. = REMOTE CONTROL VALVE
* FURNISHED WITH FILTER

NOTES:

1. PROVIDE A MINIMUM OF TEN (10) PIPE DIAMETERS OF UNINTERRUPTED PIPING UPSTREAM OF THE FLOW METER AND A MINIMUM OF FIVE (5) PIPE DIAMETERS OF UNINTERRUPTED PIPING DOWNSTREAM OF FLOW METER.
2. THE INFLUENT AND EFFLUENT HEATER PIPING SHALL CONFORM TO THE MATERIAL SPECIFICATIONS AS APPROVED FOR HOT WATER DISTRIBUTION APPLICATIONS IN THE ILLINOIS PLUMBING CODE. THE HEATER CONNECTIONS SHALL BE CPVC. CONTRACTOR SHALL MATCH EXISTING PIPING.
3. CONTRACTOR SHALL PROVIDE 3/4" AIR RELIEF VALVE AT HIGH POINT OF PIPING PIPED TO FLOOR.
4. THE FILTER SHALL BE PROVIDED WITH INFLUENT AND EFFLUENT PRESSURE GAUGES.

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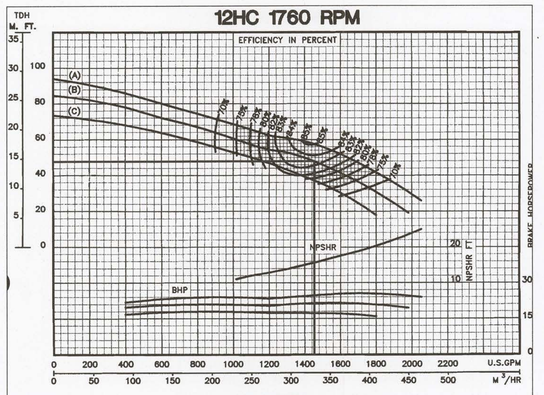
SP-4
FILTRATION DIAGRAM AND VALVE LEGEND



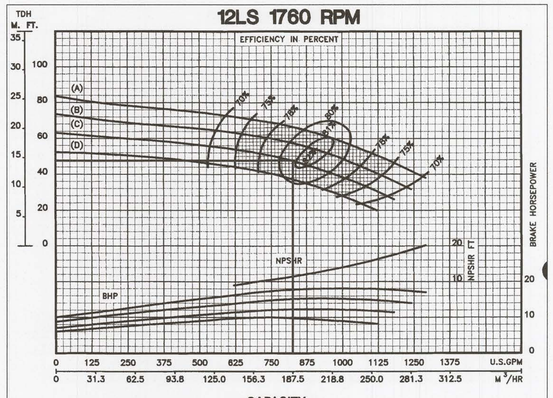
CAPACITY

IMPELLER DATA			BOWL DATA	
Impeller Number:	2914	TRIM: (A) 9.563" X 30"	Bowl Number	2915 C.I./ENAM.
Material:	BRONZE	(B) 9.281" X 30"	Bowl Dia.	11.563"max 11.250"min
Type:	CLOSED	(C) 8.875" X 30"	Max. No. Stages	15
Thrust Factor:	K=16.50		One Stage Weight	340 lb
Eye Area:	32.40 sq. in.	Minimum submergence above eye of bottom impeller: 26 in.	Add'l Stage Weight	100 lb
Weight:	11.50 lb.		Std. Shaft Dia.	1.688 in
			Std. Lateral	0.750 in
			Discharge Size	6–8–10 in
			Suction Size	8 – 10 in
			Max. Sphere Size	0.750 in
			Max. Operation P.S.I.	584 (special)

EFFICIENCY CORRECTION					
Number of Bowls	1	2	3	4	
Change as follows	–4	–2	–1	0	

Change in efficiency may affect both head and horsepower.

1 EXISTING SCS FEATURE PUMP CURVE
(J-LINE, MODEL #12HCB-1, 1,450 G.P.M. @ 48T.D.H.)



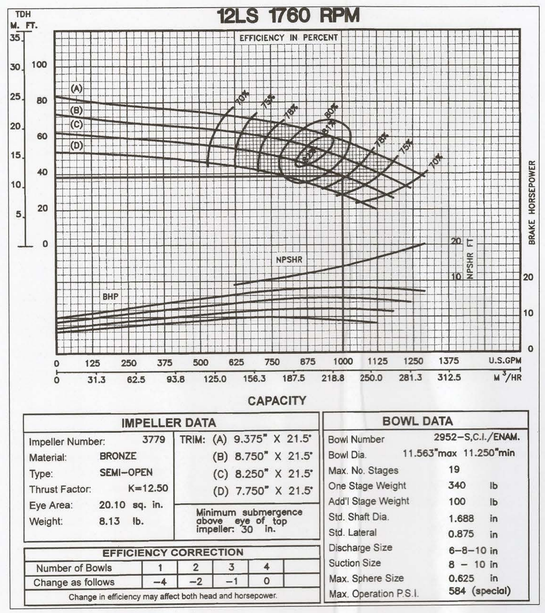
CAPACITY

IMPELLER DATA			BOWL DATA	
Impeller Number:	3779	TRIM: (A) 9.375" X 21.5"	Bowl Number	2952–S,C.I./ENAM.
Material:	BRONZE	(B) 8.750" X 21.5"	Bowl Dia.	11.563"max 11.250"min
Type:	SEMI–OPEN	(C) 8.250" X 21.5"	Max. No. Stages	19
Thrust Factor:	K=12.50	(D) 7.750" X 21.5"	One Stage Weight	340 lb
Eye Area:	20.10 sq. in.	Minimum submergence above eye of top impeller: 30 in.	Add'l Stage Weight	100 lb
Weight:	8.13 lb.		Std. Shaft Dia.	1.688 in
			Std. Lateral	0.875 in
			Discharge Size	6–8–10 in
			Suction Size	8 – 10 in
			Max. Sphere Size	0.625 in
			Max. Operation P.S.I.	584 (special)

EFFICIENCY CORRECTION					
Number of Bowls	1	2	3	4	
Change as follows	–4	–2	–1	0	

Change in efficiency may affect both head and horsepower.

2 EXISTING PLAY FEATURES PUMP CURVE
(J-LINE, MODEL #12LSC-1, 825 G.P.M. @ 48 T.D.H.)



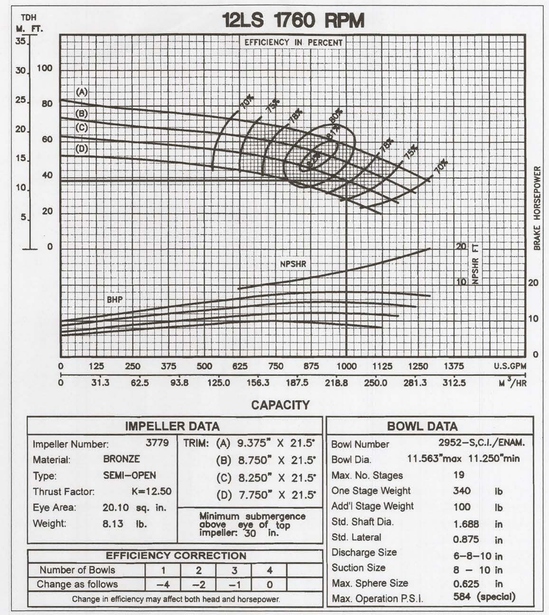
CAPACITY

IMPELLER DATA			BOWL DATA	
Impeller Number:	3779	TRIM: (A) 9.375" X 21.5"	Bowl Number	2952–S,C.I./ENAM.
Material:	BRONZE	(B) 8.750" X 21.5"	Bowl Dia.	11.563"max 11.250"min
Type:	SEMI–OPEN	(C) 8.250" X 21.5"	Max. No. Stages	19
Thrust Factor:	K=12.50	(D) 7.750" X 21.5"	One Stage Weight	340 lb
Eye Area:	20.10 sq. in.	Minimum submergence above eye of top impeller: 30 in.	Add'l Stage Weight	100 lb
Weight:	8.13 lb.		Std. Shaft Dia.	1.688 in
			Std. Lateral	0.875 in
			Discharge Size	6–8–10 in
			Suction Size	8 – 10 in
			Max. Sphere Size	0.625 in
			Max. Operation P.S.I.	584 (special)

EFFICIENCY CORRECTION					
Number of Bowls	1	2	3	4	
Change as follows	–4	–2	–1	0	

Change in efficiency may affect both head and horsepower.

3 EXISTING SPEED SLIDE PUMP CURVE
(J-LINE, MODEL #12LSC-1, 1,000 G.P.M. @ 36 T.D.H.)



CAPACITY

IMPELLER DATA			BOWL DATA	
Impeller Number:	3779	TRIM: (A) 9.375" X 21.5"	Bowl Number	2952–S,C.I./ENAM.
Material:	BRONZE	(B) 8.750" X 21.5"	Bowl Dia.	11.563"max 11.250"min
Type:	SEMI–OPEN	(C) 8.250" X 21.5"	Max. No. Stages	19
Thrust Factor:	K=12.50	(D) 7.750" X 21.5"	One Stage Weight	340 lb
Eye Area:	20.10 sq. in.	Minimum submergence above eye of top impeller: 30 in.	Add'l Stage Weight	100 lb
Weight:	8.13 lb.		Std. Shaft Dia.	1.688 in
			Std. Lateral	0.875 in
			Discharge Size	6–8–10 in
			Suction Size	8 – 10 in
			Max. Sphere Size	0.625 in
			Max. Operation P.S.I.	584 (special)

EFFICIENCY CORRECTION					
Number of Bowls	1	2	3	4	
Change as follows	–4	–2	–1	0	

Change in efficiency may affect both head and horsepower.

4 EXISTING BODY FLUME SLIDE PUMP CURVE
(J-LINE, MODEL #12LSC-1, 1,000 G.P.M. @ 36 T.D.H.)

EXISTING MAIN DRAIN COVERS:

1. THE EXISTING MAIN DRAIN COVERS WERE INSTALLED PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. THE EXISTING MAIN DRAIN COVERS BY NEPTUNE-BENSON #3030AEC HAS BEEN CERTIFIED BY NSF (A NATIONALLY RECOGNIZED TESTING LAB) IN ACCORDANCE WITH ANSI / APSP-16 2011 STANDARDS. EACH DRAIN COVER IS SECURED WITH THE STAINLESS STEEL SCREWS PROVIDED BY THE MANUFACTURER.

LAP AREA VGB NOTES:

1. THE (4) EXISTING 30" X 30" MAIN DRAINS ARE UNBLOCKABLE SUBMERGED SUCTION OUTLETS, EACH WITH AN 8" PIPE. THE 8" PIPES COMBINE TO (2) 12" PIPES THAT COMBINE TO (1) 16" PIPE, THAT THEN RUNS TO THE EXISTING SURGE TANK.
2. THE EXISTING NEPTUNE-BENSON #3030AEC DRAIN COVER HAS BEEN CERTIFIED BY NSF INTERNATIONAL (A NATIONALLY RECOGNIZED TESTING LAB) IN ACCORDANCE WITH ANSI/APSP 16-2011 STANDARDS. EACH DRAIN COVER IS SECURED WITH THE STAINLESS STEEL SCREWS PROVIDED BY THE MANUFACTURER.
3. THE MAXIMUM FLOW THROUGH THE 16" MAIN DRAIN PIPE IS 3,159.72 G.P.M. PER THE ATTACHED CALCULATIONS.
4. THE MAXIMUM CERTIFIED FLOW RATE FOR EACH EXISTING NEPTUNE-BENSON 30" X 30" DRAIN COVER IS 1,504 G.P.M. THE COMBINED CERTIFIED FLOW RATE FOR THE (4) DRAIN COVERS IS 6,016 G.P.M
5. THE FLOW RATE THROUGH THE EXISTING MAIN DRAIN COVERS WILL NOT EXCEED THE CERTIFIED FLOW RATE OF THE COVERS.

PLUNGE AREA VGB NOTES:

1. THE (2) EXISTING 30" X 30" MAIN DRAINS ARE UNBLOCKABLE SUBMERGED SUCTION OUTLETS, EACH WITH AN 8" PIPE. THE 8" PIPES COMBINE TO (1) 12" PIPE THAT RUNS TO THE EXISTING SURGE TANK.
2. THE EXISTING NEPTUNE-BENSON #3030AEC DRAIN COVER HAS BEEN CERTIFIED BY NSF INTERNATIONAL (A NATIONALLY RECOGNIZED TESTING LAB) IN ACCORDANCE WITH ANSI/APSP 16-2011 STANDARDS. EACH DRAIN COVER IS SECURED WITH THE STAINLESS STEEL SCREWS PROVIDED BY THE MANUFACTURER.
3. THE MAXIMUM FLOW THROUGH THE 12" MAIN DRAIN PIPE IS 1,460.34 G.P.M. PER THE ATTACHED CALCULATIONS.
4. THE MAXIMUM CERTIFIED FLOW RATE FOR EACH EXISTING NEPTUNE-BENSON 30" X 30" DRAIN COVER IS 1,504 G.P.M. THE COMBINED CERTIFIED FLOW RATE FOR THE (2) DRAIN COVERS IS 3,008 G.P.M
5. THE FLOW RATE THROUGH THE EXISTING MAIN DRAIN COVERS WILL NOT EXCEED THE CERTIFIED FLOW RATE OF THE COVERS.

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FILTRATION SYSTEM RENOVATION
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SP-5
EXISTING PUMP CURVES AND VGB NOTES

SWIMMING POOL FILTRATION SYSTEM

A. General:
1. It is the intent of these specifications to describe a filtering system complete with all accessory items. It is the further intent of these specifications that the filter, from pump strainer to backwash and filter control valves, are hereinafter specified with all accessories, be supplied as a complete filtering unit and guaranteed by one manufacturer.
2. The filter specified shall be an automatic regenerative pressure diatomaceous earth type and shall be a product of a manufacturer regularly engaged in the fabrication of water filtration equipment. The filter, at the time of offering under these specifications, shall be NSF Listed.
3. It is not the intention of the specification to limit competition. The base proposal must be on furnishing the equipment as specified, however, any bidder may, at his option, offer a substitution for consideration in accordance with applicable sections of these specifications. Any proposed substitution shall include mechanical and electrical drawings incorporating all required changes in layout, piping and valves. The cost of such changes shall be included in the price of the substitute.

B. Filter Requirements:
1. The filter system shall be an automatic regenerative pressure diatomaceous earth filter as manufactured by Filtrex, Inc. or equal.

C. Filter Tank:
1. The filter tank shall be diametrically divided into head and body components. The two shall be bolted together by means of external flanges, and made water tight by an o-ring seal.
2. The filter body and head shall be of welded construction, with all welded surfaces, nozzles and bracket attachments fabricated from type 304L stainless steel. All joints shall be welded both internally and externally. The internal weld to be a continuous seal weld to preclude crevice corrosion.
3. Support legs (3) shall be welded to type 304L stainless steel pads, before being attached to the main body of the tank by welding.
4. Both body and head flange bolting surfaces shall be entirely supported by a full perimeter spacer ring, to preclude distortion of those surfaces by varying bolt tension.
5. All bolt and fastenings, both internal and external, shall be of at least grade 18-8 stainless steel.
6. The inspection window shall be pyrex glass and will be covered by a clear acrylic safety shield.
7. The tank shall be designed for a 50 psi working pressure using non-code criteria and a safety factor of 4.
8. The filter tank shall incorporate connections for filter influent and effluent, drain, pre-coat inlet, pressure and vacuum relief, instruments (2) - 1/4-18 NPTF, inspection window (1) 4" nominal diameter, bump shaft gland.
9. The filter effluent and pre-coat recycle connection shall be common to assure a non-shock transition between the pre-coat recycle and service flows.
10. The nozzle sizes for the influent and drain connections are specific for their respective functions. Accordingly, separate nozzles are used with sizes as indicated on drawings.
11. The filter body shall incorporate an integral full diameter inlet distributor which directs the water to be filtered to the flex tube bundle in laminar fashion, Adjustable legs and a short turn top elbow shall be provided as part of the filter.
12. On completing the fabrication, all internal surfaces of the filter tank shall be passivated according to the procedure set forth in federal specifications QQ-P-35B, for austenitic 300 series corrosion - resisting steel.

D. Flex Tubes and Assembly
1. The flex tubes shall be cylindrical in shape with each tube closed at the bottom and open at the top. The open shall be flanged to fit into the tube sheet.
2. The outer wall of the flex tube shall be made of multi-filament polyester braid with filaments arranged so that external pressure causes a diminution of the tube diameter and pore size. Conversely, internal pressure results in an enlargement of the diameter. Each tube shall have an internal stainless spring to limit the diameter diminution. The membrane ends shall be impregnated with a polyester thermoset resin to reinforce the spring compression points.
3. Flex tubes shall have a recommended operating differential rating of 25 psi, and an ultimate of 75 psi.
4. The tube sheet shall retain the flex tubes and shall separate the filter tank into upper and lower sections. A seal shall be provided to prevent unfiltered water from by-passing the tube sheet into the upper clean side of the filter tank.
5. All components in the assembly shall be constructed from materials unaffected by the corrosiveness of the swimming pool water. The assembly shall be removed from the filter tank for servicing as a unit; or, if desired, by dismantling the individual parts.

E. Bump Mechanism
1. The bump mechanism shall consist of a double acting pneumatic cylinder supported on a machined surface located on top of the filter head. It shall be connected to the flex-tube assembly by a stainless steel shaft and rod aligner.
2. During bumping, the cylinder is alternately pressurized, causing the flex-tube assembly to move downward then upward in linear fashion over a stroke distance of approximately 2".
3. Bumping shall be both push-button initiated, and electro-mechanically programmed.

F. D.E. Injection System (vacuum transfer system)
1. D.E. shall be injected into the filter using the approved injection delivery equipment.

G. Controls and Gauge Assembly
1. Provide gauge panel with two (2) 4-1/2 inch diameter gauges connected to the influent lines of filter; bump controller, air pressure regulator, air lubricator, pressure-stat, and associated air line.

H. The entire filter assembly shall be approved and listed by the national sanitation foundation (NSF).

I. Filter piping and valves: filter unit shall be provided with supports and brackets, manifold, and elements. Piping shall be arranged to carry out operations of filtering, precoating, rinsing, and draining. External piping connections shall be flanged when larger than two inches. Filter tank assembly shall be provided with necessary pipe, valves, and fittings to make a complete battery from inlet to outlet.

J. Filter precaution: filter tank must be properly anchored in place in full accordance with manufacturer's recommendations before being filled with water.

K. Pneumatic control system shall be piped by pool contractor. Compressor and dryer shall provide 100 psi dry pneumatic air to filter controller. The pool contractor is also responsible for mounting the bump cylinder on top of the filter tank with four bolts provided. He must then connect the pneumatic air to this mechanism and from there to the two automatic valves.

L. Turbidity Reduction Test: A turbidity reduction test shall be performed of the filtration system once the system is running. Acceptance criteria shall be a turbidity reduction of 95% or greater and a TRR ratio of 0.05 or less, which corresponds to a 2 micron at 99% retention removal factor. Follow Filtrex Inc. testing protocol.

VERTICAL TURBINES

A. Motor
The vertical hollow shaft motor, high thrust design for vertical turbine pump operation. Enclosure: WP-1 or TEFC, Voltage: 208, Non reverse ratchet, Speed: 1800 RPM or 1200 RPM (3600 RPM not acceptable),Premium efficiency motor suitable for variable speed control. Motors shall be non-overloading across the entire curve.

B. Pumps
Manufacturer: Goulds or approved equal. See equipment list for specific flows , heads HP, phase , voltage and rpm. Impeller shall be stainless steel.

C. Discharge Head
Cast iron flange discharge head with mechanical seals. All hardware 316 stainless steel. Two piece head shaft design. One piece head shaft design not acceptable. Head interior and exterior shall be factory coated with a minimum of 8 mils of Tnemec 141 epoxy.

D. Shaft
All shafting to be PH 17-4 or approved equal. All couplings to be 300 series stainless steel.

E. Bearing
All bearings to be carbon graphite or lead and zinc free silicon bronze. No other material is acceptable.

F. Column Assembly
- Columns shall be flanged. Contractor/Equipment supplier shall field verify flanged column lengths to assure pumps can be installed and removed with existing clearances.
- Maximum bearing spans 5 feet
- Minimum shaft diameters 1" 213 thru 215 frame motors
- Minimum shaft diameter 1-3/16" 254 thru 326 frame motors
- Minimum shaft diameter 1-1/2" 364 thru 405 frame motors
- The column pipe shall be schedule 40 through 6" and schedule 30 through 14" and be flanged. The column pipe shall be factory interior and exterior with 8 mils of Tnemec 141 epoxy suitable for heavy chlorinated water at 90 degrees F.

G. Bowl Assembly
Cast iron bowls glass lined, lead free, zinc free, stainless steel impeller and single through two stage assemblies are acceptable. Bowl exterior shall be factory coated with a minimum of 8 mils of Tnemec 141 epoxy.

H. Basket Strainer
A 316 series stainless steel basket type strainer shall be provided. The strainer shall be easily removable for cleaning with anti-vortex ribs. Strainer openings shall be smaller than the impeller's max sphere size.

I. Sole Plate
Cast iron or fabricated steel for field mounting.

J. Pump Assembly
All pumps must be assembled at factory or approved factory service center.

PIPING AND PIPE FITTINGS - HANGERS AND SUPPORTS.

A. Work Included: Pipe, fittings, connections, hangers and supports.

B. Use the prescribed pipe type in the following areas. All plastic pipe flanges shall be schedule 80 PVC with neoprene gaskets where required.
1. All above grade piping inside the pump mechanical room, schedule 80 PVC, solvent weld, conforming to ASTM D1785/76 or ASTM D 1784..
2. All chemical piping, schedule 80 PVC, solvent weld, conforming to ASTM D1785/76 or ASTM D 1784.
3. Heater connections shall be type "L" copper piping on the heater influent and effluent lines from the bypass to the heaters.
4. Pool Pak connections shall be schedule 80 CPVP piping on the Pool Pak influent and effluent lines from the bypass to the Pool Pak.
5. All CPVC Schedule 80 pipe shall be manufactured from a Type IV, Grade 1 Chlorinated Polyvinyl Chloride (CPVC) compound with a minimum Cell Classification of 23447 per ASTM D1784. The pipe shall be manufactured in strict compliance to ASTM F441, consistently meeting the Quality Assurance test requirements of this standard with regard to material, workmanship, burst pressure, flattening, and extrusion quality. The pipe shall be produced in the USA using domestic materials, by an ISO 9001 certified manufacturer, and shall be stored indoors after production, at the manufacturing site, until shipped from factory. This pipe shall carry the National Sanitation Foundation (NSF) seal of approval for potable water applications. The pipe shall have a Flame Spread rating < 25 and a Smoke Development rating < 50 when tested and listed for Surface Burning Characteristics in accordance with CAN/ULC-S102-2-M88 or equivalent.

C. Hangers and Supports: Submit hanger locations and weights, hanger details on Shop Drawings.
1. All mechanical room piping must be properly supported per the Eslon Plastic Pipe manufacturer's requirements and 2009 International Mechanical Code.
2. It shall be the Contractor's responsibility to properly support piping at all valves, pumps, equipment, overhead areas, etc.
3. Use of the proper hanger for the conditions is essential. All piping must be supported laterally as well as vertically hung.
4. All hangers, pipe supports, threaded rod, hardware, etc. Shall be zinc plated. The ends of cut threaded rod shall be painted with a zinc rich paint.

D. Piping:
1. Cut all pipe with mechanical cutter without damage to pipe.
2. Placing and laying: Inspect pipe for defects before installation. Clean the interior of pipe thoroughly of foreign matter and keep clean during laying operation. Pipe shall not be laid in water or when trench conditions are unstable. Water shall be kept out of the trench until the pipe is installed. When Work is not in progress, open ends of pipe and fittings shall be securely closed so that no trench water, earth or other substance will enter the pipes or fittings.
3. Solvent welded joints shall be made in accordance with the manufacturer's printed instructions and the following minimum standards:
   a. All fittings shall fit easily on the pipe before applying cement. The outer surface area of pipe and inner wall of fitting shall be dry and clean. Cleaner is to be applied to the outer surface of the pipe and to the inner surface of the fitting. Cement is to be applied to the outer surface of the pipe, or on the male section of fittings only. When the outside surface area of the pipe is satisfactorily covered with cement allow ten (10) seconds open time to lapse before inserting pipe end into fittings. After full insertion of pipe into fitting, turn fitting about the pipe end approximately 1/8 to 1/4 of a turn. Wipe off excess cement at the joint in a neat cove bead. Follow manufacturer's instructions on solvents.
   b. All joints shall remain completely undisturbed for a minimum of 10 minutes from time of jointing the pipe and fitting. If necessary to apply pressure to a newly made joint, limit to 10% of rated pipe pressure, during the first 24 hours after the joint has been made.
   c. Full working pressure shall not be applied until the joints have set for a period of 24 hours.
5. Make provisions for expansion and contraction by way of swing joints or snaking.

E. No installation shall be made that will provide a cross connection or inter-connection between distribution supply for drinking purposes and the swimming pool that will permit a backflow of water into the potable water supply. Pipe openings shall be closed with caps or plugs during installation. Equipment and pool fittings shall be tightly covered and protected against dirt, water and chemical or mechanical injury. At the completion of work the fittings, materials and equipment shall be thoroughly clean and adjusted for proper operation.

F. Pipe Identification
1. Provide identification on all piping.
2. Identify the contents, direction of flow.
3. Mark at least once on each line and at 15 ft. intervals on long pipe runs. Consult Health Department Code form minimum marking requirements.
4. Color code per Health Department requirements. If code does not identify color coding requirements consult Architect/Engineer.
5. Brady, B-946, custom legend, self sticking markers and arrows or equal.

POOL VALVES

A. Products:
1. Provide valves of same manufacturer throughout where possible and practical.
2. Provide valves with manufacturer's name and pressure rating clearly marked on outside of body.

B. Valve Connections:
1. Provide valves suitable to connect to adjoining piping as specified for pipe joint. Use pipe size valves.

C. Use of Valves:
1. Pipe sizes 4" - 12" - Butterfly.
2. Miscellaneous valves 1/2" - 3" - PVC True Union Ball Valves.

D. Butterfly Valves:
1. Butterfly valves 4" - 12" shall be wafer or lug bodies and shall be suitable for use between ANSI 125 or 150 lb. flanges.
2. Bodies of the flangeless design shall be provided with at least four (2) bolt guides to center the valve in the pipeline.
3. All butterfly valves shall have a cast iron body epoxy coated, ductile iron nylon 11 coated disc, stainless shaft with Buna-N or EPDM seat minimum 150 PSI rating.
4. All butterfly valves shall have gear operators and chain operators as required.
5. All valves shall be as manufactured by Bray Valve (713) 894 5454 or equal as approved by the Architect/Engineer.
6. Ball Valves: CPVC True Union Ball Valves, Dual Union as manufactured by Eslon, Asahi, or equal.

E. Heater Check Valves :
1. Silent check valves (Model: CV 90-DI), wafer type, center guided. Bronze trim and BUNA-N seats.
2. All valves shall be as manufactured by Titan Flow Control, Inc.

F. All valves must be permanently tagged along with a wall mounted valve legend and explanation of operation through all sequences.

SUBMITTALS

A. Shop Drawings:
1. Submit shop drawings as required in this Section.
2. The drawings accompanying this specification are essentially diagrammatic in nature and show the general arrangement of all equipment and piping. Because of the small scale of the drawings, it is not possible to show all offsets, fittings and accessories which may be required. The Contractor shall carefully investigate the structural and finish conditions of all his work and shall arrange such work accordingly, furnishing all fittings, pipe and accessories , that may be required to meet such conditions. Where conditions necessitate a rearrangement, the Contractor shall obtain the Architect/Engineer's approval. Locate all valves for maximum operation accessibility.

B. Samples: Submit samples of materials as may be requested by the Architect/Engineer.

C. Operation and Maintenance Manuals: Submit 4 copies in accordance with the requirements in Division 1.

D. Required Submittals:
1. Valves
2. Piping Materials
3. Seals For Piping
4. Guarantees / Warrantees
5. Pressure relief valves
6. Close Out Documents:
   a. O& M Manuals
   b. As Built Drawings
   c. Owners Certification of Instruction

WATER TREATMENT

A. Water Treatment:
1. Obtain a chemical analysis of the source/pool make-up water supply and submit to Architect/Engineer. Include the following:
   a. Total alkalinity / PPM
   b. Calcium hardness / PPM
   c. Chlorine / PPM
   d. pH
   e. Iron
   f. Copper
2. Treat and balance pool water prior to turnover of pools to the Owner (using chemicals provided by the Owner)
3. Pool water: balance to establish a total alkalinity level of 60-125 PPM and calcium hardness level of 180-375 PPM (3 times alkalinity level).
4. Stabilize pool water by shocking to 20 PPM of chlorine for initial sanitation.
5. Consult with Architect/Engineer for special waters to establish balanced levels.

TESTING OF PIPING

1. Contractor shall be responsible for discovering leaks and making necessary repairs.
2. After the piece is laid, subject new lines to a hydrostatic pressure of not less than 35 pounds per square inch. Joints shall remain water tight under this pressure for a period of twelve hours. Provide test results to the Architect/Engineer before backfilling pipes or covering pipes with concrete.
3. Leaks shall be repaired and tested repeatedly until leakage or infiltration is approved.

EQUIPMENT BASES

A. Provide for major equipment (Filter), reinforced concrete housekeeping bases poured directly on structural floor slabs (as required by equipment manufacturer) 4 inches thick minimum; unless noted otherwise on plans, extended 4 inches minimum beyond machinery bed plates. Provide templates, anchor bolts, rubber vibration isolators and accessories required for mounting and anchoring equipment. Anchorage system shall be in accordance with the equipment manufacturer's specifications.

CLEAN UP AND PROTECTION

A. After Work has been completed, clean up Work areas and remove all equipment, excess materials, and debris. Protect pool equipment from damage until time of Final Acceptance.

WARRANTY

A. Warranty: Provide one (1) year warranty covering all pool workmanship, materials and equipment. Refer to Division 1 for additional requirements.

B. All standard manufacturer's warranties shall apply to all equipment and products provided by this Subcontractor.

INSTRUCTION OF OWNER'S PERSONNEL

A. The Pool Sub-contractor shall supply the services of an experienced swimming pool operator instructor for a period of not less than three Days (3 days operations,icluding start-up and shut down) after the pool has been filled and initially placed in operation. During this period the Owner's designated representatives shall be thoroughly instructed in all phases of the pool's operation.

B. Prior to this instructor leaving the job, he shall obtain written certification from the Owner's designated representative acknowledging that the instruction period has been completed and all necessary operating information provided.

C. Pool Sub-contractor shall deliver four complete sets of operating and maintenance instructions for the swimming pool filtration system. Bound together in a complete manual including, but not limited to the following:
1. Accurate parts list.
2. Pool start-up (fill) and pool closing (emptying) instructions.
3. Narrative on the pool operation through all sequences.
4. Trouble shooting information.
5. A schematic piping diagram as installed.

D. All valves must be permanently tagged along with a wall mounted valve legend and explanation of operation. All piping in Mechanical Room shall labeled with description of line and arrows indicating direction of flow.

QUALITY ASSURANCE

A. Qualifications of Pool Sub-contractor/Equipment Supplier: Work of this Section shall be performed by a contractor who has a proven record of competence and experience in the construction of similar facilities of this size and complexity for not less than 5 years.

B. Performance Criteria: Certain sections of the Specifications contain performance criteria rather than product descriptions. It shall be the obligation of the contractor/equipment supplier to insure that all criteria are satisfied and the burden or proof of conformance shall rest with the contractor/equipment supplier. The Architect/Engineer shall require complete calculations, past performance records and, if required, inspection trips of similar facilities to substantiate conformance with these criteria. The Architect/Engineer shall be sole judge of conformance. The Pool Sub-contractor/Equipment Supplier is cautioned that he will be required to provide a finished product meeting all stated criteria and meeting or exceeding Department of Public Health requirements.

AQUATIC \ CIVIL \ MECHANICAL \ ELECTRICAL \ PLUMBING \ TELECOMMUNICATION \ STRUCTURAL \ ACCESSIBILITY CONSULTING \ DESIGN & PROGRAM MANAGEMENT \ LAND SURVEY

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PARK DISTRICT OF HIGHLAND PARK - HIDDEN CREEK
FILTRATION SYSTEM RENOVATION
1220 FREDRICKSON PLACE
HIGHLAND PARK, IL 60035

ISSUE

TO	DATE
Issue for Bid/Permit	2/14/20

CHECK:RSK
DRAWN: BZ
JOB: 1913641A

SP-6
SPECIFICATIONS