GATEWAY

On Call. On Time. On Target.

SEWAGE FACILITIES PLANNING MODULE

C-4187-0054 October 2020

University of Pittsburgh Chiller Plant
DEP Code 02001-20-107

530-570 Champions Drive
5th Ward, City of Pittsburgh
Allegheny County, PA

PREPARED FOR

University of Pittsburgh
Facilities Management
3400 Forbes Avenue, Suite 5
Pittsburgh, PA 15213

SUBMITTED BY

Kelley R. Harrington, E.I.T.
The Gateway Engineers, Inc.
100 McMorris Road
Pittsburgh, PA 15205
412.921.4030 PHONE
412.921.9960 FAX
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kharrington@gatewayengineers.com

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EXHIBITS

EXHIBIT A. Copy of DEP Planning Module Component Letter

EXHIBIT B. Sewage Facilities Planning Module – Component 3 – Sewage Collection and Treatment Facilities

EXHIBIT C. PWSA Water and Sewer Availability Letter

EXHIBIT D. Project Narrative

EXHIBIT E. U.S.G.S. Site Location Map

EXHIBIT F. Sewage Flow Calculations

EXHIBIT G. PWSA Water and Sewer Use Approval

EXHIBIT H. PWSA Tap Allocation Letter

EXHIBIT I. Existing Sewer Flow Calculations

EXHIBIT J. Alternatives Analysis

EXHIBIT K. Sewage Facilities Planning Module – Component 4A – Municipal Planning Agency Review

EXHIBIT L. Sewage Facilities Planning Module – Component 4C – County of Joint Health Department Review

EXHIBIT M. Plot Plan

EXHIBIT A.

Copy of DEP Planning Module Component Letter

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office

April 17, 2020

Kaleb A. Gatz.
Gateway Engineers
100 McMorris Road
Pittsburgh, PA 15205

Ref: Planning Module for New Land Development
Act 537 Planning
University of Pittsburgh – Chiller Plant
110.1 EDU's or 44,049 GPD
DEP Code: 02001-20-107
City of Pittsburgh
Allegheny County

Dear Mr. Gatz,

In response to your Mailer Application, enclosed are the Planning Module Forms required for the proposed development.

Please complete the enclosed Planning Module Components (PMCs) and submit them Pittsburgh Water and Sewer Authority for review. A copy of this letter must be attached to the PMC's when submitted through the Borough to the Department. The Department must receive two copies.

The Department will make a completeness determination within ten (10) days of the receipt of this submission. A submission that is determined to be incomplete will be returned. The Department's review will not begin until the submittal is determined by the Department to be complete.

The Department has a fee schedule for Planning Module Component reviews. The fee schedule applies to any project that requires planning. Please include a check or money order for the fee due as indicated under Section R (Review Fee) of the Planning Module.

If you have any questions concerning this matter, please contact me at either (412) 442-4116 or bvalko@pa.gov.

Sincerely,

Brenden Valko

Brenden Valko
Sewage Planning Specialist
Clean Water Program

Enclosures

cc: City of Pittsburgh
ALCOSAN
PWSA
ACHD

EXHIBIT B.

Sewage Facilities Planning Module – Component 3 – Sewage Collection and Treatment Facilities

3800-FM-BPNPSM0353 Rev. 2/2015
Form

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Code No.
02001-20-107

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

SEWAGE FACILITIES PLANNING MODULE

Component 3. Sewage Collection and Treatment Facilities

(Return completed module package to appropriate municipality)

DEP USE ONLY				
DEP CODE # 02001-20-107	**CLIENT ID #** **76778**	**SITE ID #** **379960**	**APS ID #**	**AUTH ID #**

This planning module component is used to fulfill the planning requirements of Act 537 for the following types of projects: (1) a subdivision to be served by sewage collection, conveyance or treatment facilities, (2) a tap-in to an existing collection system with flows on a lot of 2 EDU's or more, or (3) the construction of, or modification to, wastewater collection, conveyance or treatment facilities that will require DEP to issue or modify a Clean Streams Law permit. Planning for any project that will require DEP to issue or modify a permit cannot be processed by a delegated agency. Delegated agencies must send their projects to DEP for final planning approval.

This component, along with any other documents specified in the cover letter, must be completed and submitted to the municipality with jurisdiction over the project site for review and approval. All required documentation must be attached for the Sewage Facilities Planning Module to be complete. Refer to the instructions for help in completing this component.

REVIEW FEES: Amendments to the Sewage Facilities Act established fees to be paid by the developer for review of planning modules for land development. These fees may vary depending on the approving agency for the project (DEP or delegated local agency). Please see section R and the instructions for more information on these fees.

NOTE: All projects must complete Sections A through I, and Sections O through R. Complete Sections J, K, L, M and/or N if applicable or marked ☒.

A. PROJECT INFORMATION (See Section A of instructions)

1. Project Name University of Pittsburgh - Chiller Plant

2. Brief Project Description Construction of a 15,000 ton chiller plant and adjacent turf athletic field

B. CLIENT (MUNICIPALITY) INFORMATION (See Section B of instructions)

Municipality Name	County	City	Boro	Twp
City of Pittsburgh	Allegheny	☒	☐	☐

Municipality Contact Individual - Last Name	First Name	MI	Suffix	Title
Battistone	Martina			Senior Environmental Planner

Additional Individual Last Name	First Name	MI	Suffix	Title

Municipality Mailing Address Line 1	Mailing Address Line 2
Department of City Planning	200 Ross Street, Suite 4

Address Last Line -- City	State	ZIP+4
Pittsburgh	PA	15219

Area Code + Phone + Ext.	FAX (optional)	Email (optional)
412-255-2516		martina.battistone@pittsburghpa.gov

C. SITE INFORMATION (See Section C of instructions)

Site (Land Development or Project) Name

University of Pittsburgh - Chiller Plant

Site Location Line 1	Site Location Line 2
530-570 Champions Dr	

Site Location Last Line -- City	State	ZIP+4	Latitude	Longitude
Pittsburgh	PA	15219	40.447383	-79.965074

Detailed Written Directions to Site From downtown Pittsburgh head northeast on Grant St toward Forbes Ave. Turn right onto Seventh Ave and keep right at the fork. Follow signs for PA-380 E/Bigelow Boulevard/Interstate 579 N and merge onto Bigelow Blvd. Turn right onto Herron Ave and continue straight onto Robinson St Ext (Champions Drive). The site will be on you left near the Charles L. Cost Sports Center.

Description of Site The proposed site will consist of a 15,000 ton chiller plant and a turf athletic field.

Site Contact (Developer/Owner)

Last Name	First Name	MI	Suffix	Phone	Ext.
Sinack	Michael			412-624-9545	

Site Contact Title	Site Contact Firm (if none, leave blank)
Senior Manager of Mechanical Engineering, Facilities Planning and Design	University of Pittsburgh, Facilities Management

FAX	Email
	mikesinack@pitt.edu

Mailing Address Line 1	Mailing Address Line 2
3400 Forbes Avenue #5	

Mailing Address Last Line -- City	State	ZIP+4
Pittsburgh	PA	15213

D. PROJECT CONSULTANT INFORMATION (See Section D of instructions)

Last Name	First Name	MI	Suffix
Donnelly	Sean	M	P.E.

Title	Consulting Firm Name
Project Manager	The Gateway Engineers, Inc.

Mailing Address Line 1	Mailing Address Line 2
100 McMorris Rd	

Address Last Line – City	State	ZIP+4	Country
Pittsburgh	PA	15205-9401	USA

Email	Area Code + Phone	Ext.	Area Code + FAX
sdonnelly@gatewayengineers.com	412-921-4030	146	412-921-9960

E. AVAILABILITY OF DRINKING WATER SUPPLY

The project will be provided with drinking water from the following source: (Check appropriate box)

☐ Individual wells or cisterns.

☐ A proposed public water supply.

☒ An existing public water supply.

If existing public water supply is to be used, provide the name of the water company and attach documentation from the water company stating that it will serve the project.

Name of water company: Pittsburgh Water and Sewer Authority (PWSA)

F. PROJECT NARRATIVE (See Section F of instructions)

☒ A narrative has been prepared as described in Section F of the instructions and is attached.

The applicant may choose to include additional information beyond that required by Section F of the instructions.

G. PROPOSED WASTEWATER DISPOSAL FACILITIES (See Section G of instructions)

Check all boxes that apply, and provide information on collection, conveyance and treatment facilities and EDU's served. This information will be used to determine consistency with Chapter 93 (relating to wastewater treatment requirements).

1. **COLLECTION SYSTEM**

a. Check appropriate box concerning collection system

☐ New collection system ☐ Pump Station ☐ Force Main

☐ Grinder pump(s) ☒ Extension to existing collection system ☐ Expansion of existing facility

Clean Streams Law Permit Number _____

b. Answer questions below on collection system

Number of EDU's and proposed connections to be served by collection system. EDU's 41.3

Connections 2 (1 storm, 1 sanitary)

Name of:
existing collection or conveyance system Champions Drive 24" V.C.P. Combined Sewer
owner PWSA
existing interceptor Monongahela (M-19)
owner ALCOSAN

2. **WASTEWATER TREATMENT FACILITY**

Check all boxes that apply, and provide information on collection, conveyance and treatment facilities and EDU's served. This information will be used to determine consistency with Chapter(s) 91 (relating to general provisions), 92 (relating to national Pollution Discharge Elimination System permitting, monitoring and compliance) and 93 (relating to water quality standards).

a. Check appropriate box and provide requested information concerning the treatment facility

☐ New facility ☒ Existing facility ☐ Upgrade of existing facility ☐ Expansion of existing facility

Name of existing facility ALCOSAN

NPDES Permit Number for existing facility 25984

Clean Streams Law Permit Number _____

Location of discharge point for a new facility. Latitude 40° 28' 34" N Longitude 80° 02' 44" W

b. The following certification statement must be completed and signed by the wastewater treatment facility permitee or their representative.

As an authorized representative of the permittee, I confirm that the ALCOSAN (Name from above) sewage treatment facilities can accept sewage flows from this project without adversely affecting the facility's ability to achieve all applicable technology and water quality based effluent limits (see Section I) and conditions contained in the NPDES permit identified above.

Name of Permittee Agency, Authority, Municipality ALCOSAN

Name of Responsible Agent Mark D. Labuskes

Agent Signature _____ Date 9/15/2020

(Also see Section I. 4.)

G. PROPOSED WASTEWATER DISPOSAL FACILITIES (Continued)

3. PLOT PLAN

The following information is to be submitted on a plot plan of the proposed subdivision.

a. Existing and proposed buildings.
b. Lot lines and lot sizes.
c. Adjacent lots.
d. Remainder of tract.
e. Existing and proposed sewerage facilities. Plot location of discharge point, land application field, spray field, COLDS, or LVCOLDS if a new facility is proposed.
f. Show tap-in or extension to the point of connection to existing collection system (if applicable).
g. Existing and proposed water supplies and surface water (wells, springs, ponds, streams, etc.)
h. Existing and proposed rights-of-way.
i. Existing and proposed buildings, streets, roadways, access roads, etc.
j. Any designated recreational or open space area.
k. Wetlands - from National Wetland Inventory Mapping and USGS Hydric Soils Mapping.
l. Flood plains or Flood prone areas, floodways, (Federal Flood Insurance Mapping)
m. Prime Agricultural Land.
n. Any other facilities (pipelines, power lines, etc.)
o. Orientation to north.
p. Locations of all site testing activities (soil profile test pits, slope measurements, permeability test sites, background sampling, etc. (if applicable).
q. Soils types and boundaries when a land based system is proposed.
r. Topographic lines with elevations when a land based system is proposed

4. WETLAND PROTECTION

	YES	NO	
a.	☐	☒	Are there wetlands in the project area? If yes, ensure these areas appear on the plot plan as shown in the mapping or through on-site delineation.
b.	☐	☒	Are there any construction activities (encroachments, or obstructions) proposed in, along, or through the wetlands? If yes, Identify any proposed encroachments on wetlands and identify whether a General Permit or a full encroachment permit will be required. If a full permit is required, address time and cost impacts on the project. Note that wetland encroachments should be avoided where feasible. Also note that a feasible alternative **MUST BE SELECTED** to an identified encroachment on an exceptional value wetland as defined in Chapter 105. Identify any project impacts on streams classified as HQ or EV and address impacts of the permitting requirements of said encroachments on the project.

5. PRIME AGRICULTURAL LAND PROTECTION

YES	NO	
☐	☒	Will the project involve the disturbance of prime agricultural lands? If yes, coordinate with local officials to resolve any conflicts with the local prime agricultural land protection program. The project must be consistent with such municipal programs before the sewage facilities planning module package may be submitted to DEP. If no, prime agricultural land protection is not a factor to this project.
☐	☐	Have prime agricultural land protection issues been settled?

6. HISTORIC PRESERVATION ACT

YES	NO	
☐	☒	Sufficient documentation is attached to confirm that this project is consistent with DEP Technical Guidance 012-0700-001 *Implementation of the PA State History Code* (available online at the DEP website at www.dep.state.pa.us, select "subject" then select "technical guidance"). As a minimum this includes copies of the completed Cultural Resources Notice

EXEMPT PER 0120-PM-PY0003A

(CRN), a return receipt for its submission to the PHMC and the PHMC review letter.

7. **PROTECTION OF RARE, ENDANGERED OR THREATENED SPECIES**

Check one:

☒ The "Pennsylvania Natural Diversity Inventory (PNDI) Project Environmental Review Receipt" resulting from my search of the PNDI database and all supporting documentation from jurisdictional agencies (when necessary) is/are attached.

☐ A completed "Pennsylvania Natural Diversity Inventory (PNDI) Project Planning & Environmental Review Form," (PNDI Form) available at www.naturalheritage.state.pa.us , and all required supporting documentation is attached. I request DEP staff to complete the required PNDI search for my project. I realize that my planning module will be considered incomplete upon submission to the Department and that the DEP review will not begin, and that processing of my planning module will be delayed, until a "PNDI Project Environmental Review Receipt" and all supporting documentation from jurisdictional agencies (when necessary) is/are received by DEP.

Applicant or Consultant Initials _____.

H. ALTERNATIVE SEWAGE FACILITIES ANALYSIS (See Section H of instructions)

☒ An alternative sewage facilities analysis has been prepared as described in Section H of the attached instructions and is attached to this component.

The applicant may choose to include additional information beyond that required by Section H of the attached instructions.

I. COMPLIANCE WITH WATER QUALITY STANDARDS AND EFFLUENT LIMITATIONS (See Section I of instructions) (Check and complete all that apply.)

1. **Waters designated for Special Protection**

☐ The proposed project will result in a new or increased discharge into special protection waters as identified in Title 25, Pennsylvania Code, Chapter 93. The Social or Economic Justification (SEJ) required by Section 93.4c. is attached.

2. **Pennsylvania Waters Designated As Impaired**

☐ The proposed project will result in a new or increased discharge of a pollutant into waters that DEP has identified as being impaired by that pollutant. A pre-planning meeting was held with the appropriate DEP regional office staff to discuss water quality based discharge limitations.

3. **Interstate and International Waters**

☐ The proposed project will result in a new or increased discharge into interstate or international waters. A pre-planning meeting was held with the appropriate DEP regional office staff to discuss effluent limitations necessary to meet the requirements of the interstate or international compact.

4 **Tributaries To The Chesapeake Bay**

☐ The proposed project result in a new or increased discharge of sewage into a tributary to the Chesapeake Bay. This proposal for a new sewage treatment facility or new flows to an existing facility includes total nitrogen and total phosphorus in the following amounts: _____ pounds of TN per year, and _____ pounds of TP per year. Based on the process design and effluent limits, the total nitrogen treatment capacity of the wastewater treatment facility is _____ pounds per year and the total phosphorus capacity is _____ pounds per year as determined by the wastewater treatment facility permitee. The permitee has determined that the additional TN and TP to be contributed by this project (as modified by credits and/or offsets to be provided) will not cause the discharge to exceed the annual total mass limits for these parameters. Documentation of compliance with nutrient allocations is attached.

Name of Permittee Agency, Authority, Municipality _____

Initials of Responsible Agent (See Section G 2.b) _____

See *Special Instructions* (Form 3800-FM-BPNPSM0353-1) for additional information on Chesapeake Bay watershed requirements.

☒ J. CHAPTER 94 CONSISTENCY DETERMINATION (See Section J of instructions)

Projects that propose the use of existing municipal collection, conveyance or wastewater treatment facilities, or the construction of collection and conveyance facilities to be served by existing municipal wastewater treatment facilities must be consistent with the requirements of Title 25, Chapter 94 (relating to Municipal Wasteload Management). If not previously included in Section F, include a general map showing the path of the sewage to the treatment facility. If more than one municipality or authority will be affected by the project, please obtain the information required in this section for each. Additional sheets may be attached for this purpose.

1. Project Flows 16,525 gpd
2. Total Sewage Flows to Facilities (pathway from point of origin through treatment plant)

When providing "treatment facilties" sewage flows, use Annual Average Daily Flow for "average" and Maximum Monthly Average Daily Flow for "peak" in all cases. For "peak flows" in "collection" and "conveyance" facilities, indicate whether these flows are "peak hourly flow" or "peak instantaneous flow" and how this figure was derived (i.e., metered, measured, estimated, etc.).

a. Enter average and peak sewage flows for each proposed or existing facility as designed or permitted.

b. Enter the average and peak sewage flows for the most restrictive sections of the existing sewage facilities.

c. Enter the average and peak sewage flows, projected for 5 years (2 years for pump stations) through the most restrictive sections of the existing sewage facilities. Include existing, proposed (this project) and future project (other approved projects) flows.

To complete the table, refer to the instructions, Section J.

	a. Design and/or Permitted Capacity		b. Present Flows		c. Projected Flows in 5 years (2 years for P.S.)	
	Average	Peak	Average	Peak	Average	Peak
Collection	9,120,456 gpd	31,921,597 gpd	133,000 gpd	7,539,000 gpd	2,266,658 gpd	7,933,301 gpd
Conveyance		12.1 mgd	5.1 mgd	5.81	5.1 mgd	5.86 mgd
Treatment	209.3 gpd	250 gpd	209.3 gpd	250 gpd	219.7	295 gpd.

3. Collection and Conveyance Facilities

The questions below are to be answered by the sewer authority, municipality, or agency responsible for completing the Chapter 94 report for the collection and conveyance facilities. These questions should be answered in coordination with the latest Chapter 94 annual report and the above table. The individual(s) signing below must be legally authorized to make representation for the organization.

	YES	NO	
a.	☐	☒	This project proposes sewer extensions or tap-ins. Will these actions create a hydraulic overload within five years on any existing collection or conveyance facilities that are part of the system?

If yes, this sewage facilities planning module will not be accepted for review by the municipality, delegated local agency and/or DEP until all inconsistencies with Chapter 94 are resolved or unless there is an approved Corrective Action Plan (CAP) granting an allocation for this project. A letter granting allocations to this project under the CAP must be attached to the module package.

If no, a representative of the sewer authority, municipality, or agency responsible for completing the Chapter 94 report for the collection and conveyance facilities must sign below to indicate that the collection and conveyance facilities have adequate capacity and are able to provide service to the proposed development in accordance with both §71.53(d)(3) and Chapter 94 requirements and that this proposal will not affect that status.

b. Collection System

Name of Agency, Authority, Municipality PWSA

Name of Responsible Agent Barry King, P.E. / Director of Engineering and Construction

Agent Signature _____ Date August 28, 2020

☒ J. CHAPTER 94 CONSISTENCY DETERMINATION (See Section J of instructions)

c. Conveyance System

Name of Agency, Authority, Municipality ALCOSAN

Name of Responsible Agent Mark D. Luckey

Agent Signature _____ Date 9/15/2020

4. Treatment Facility

The questions below are to be answered by a representative of the facility permittee in coordination with the information in the table and the latest Chapter 94 report. The individual signing below must be legally authorized to make representation for the organization.

	YES	NO	
a.	☐	☒	This project proposes the use of an existing wastewater treatment plant for the disposal of sewage. Will this action create a hydraulic or organic overload within 5 years at that facility?

If yes, this planning module for sewage facilities will not be reviewed by the municipality, delegated local agency and/or DEP until this inconsistency with Chapter 94 is resolved or unless there is an approved CAP granting an allocation for this project. A letter granting allocations to this project under the CAP must be attached to the planning module.

If no, the treatment facility permittee must sign below to indicate that this facility has adequate treatment capacity and is able to provide wastewater treatment services for the proposed development in accordance with both §71.53(d)(3) and Chapter 94 requirements and that this proposal will not impact that status.

b. Name of Agency, Authority, Municipality ALCOSAN

Name of Responsible Agent Mark D. Luckey

Agent Signature _____

Date 9/15/2020

☐ K. TREATMENT AND DISPOSAL OPTIONS (See Section K of instructions)

This section is for land development projects that propose construction of wastewater treatment facilities. Please note that, since these projects require permits issued by DEP, these projects may **NOT** receive final planning approval from a delegated local agency. Delegated local agencies must send these projects to DEP for final planning approval.

Check the appropriate box indicating the selected treatment and disposal option.

☐ 1. Spray irrigation (other than individual residential spray systems (IRSIS)) or other land application is proposed, and the information requested in Section K.1. of the planning module instructions are attached.

☐ 2. Recycle and reuse is proposed and the information requested in Section K-2 of the planning module instructions is attached.

☐ 3. A discharge to a dry stream channel is proposed, and the information requested in Section K.3. of the planning module instructions are attached.

☐ 4 A discharge to a perennial surface water body is proposed, and the information requested in Section K.4. of the planning module instructions are attached.

☐ L. PERMEABILITY TESTING (See Section L of instructions)

☐ The information required in Section L of the instructions is attached.

☐ M. PRELIMINARY HYDROGEOLOGIC STUDY (See Section M of instructions)

☐ The information required in Section M of the instructions is attached.

☐ N. DETAILED HYDROGEOLOGIC STUDY (See Section N of instructions)

☐ The detailed hydrogeologic information required in Section N. of the instructions is attached.

O. SEWAGE MANAGEMENT (See Section O of instructions)

(1-3 for completion by the developer(project sponser), 4-5 for completion by the non-municipal facility agent and 6 for completion by the municipality)

	Yes	No	
1.	☐	☒	Is connection to, or construction of, a DEP permitted, non-municipal sewage facility or a local agency permitted, community onlot sewage facility proposed.

If Yes, respond to the following questions, attach the supporting analysis, and an evaluation of the options available to assure long-term proper operation and maintenance of the proposed non-municipal facilities. If No, skip the remainder of Section O.

2. Project Flows _____ gpd

	Yes	No	
3.	☐	☐	Is the use of nutrient credits or offsets a part of this project?

If yes, attach a letter of intent to puchase the necessary credits and describe the assurance that these credits and offsets will be available for the remaining design life of the non-municipal sewage facility;

(For completion by non-municipal facility agent)

4. Collection and Conveyance Facilities

The questions below are to be answered by the organization/individual responsible for the non-municipal collection and conveyance facilities. The individual(s) signing below must be legally authorized to make representation for the organization.

	Yes	No	
a.	☐	☐	If this project proposes sewer extensions or tap-ins, will these actions create a hydraulic overload on any existing collection or conveyance facilities that are part of the system?

If yes, this sewage facilities planning module will not be accepted for review by the municipality, delegated local agency and/or DEP until this issue is resolved.

If no, a representative of the organization responsible for the collection and conveyance facilities must sign below to indicate that the collection and conveyance facilities have adequate capacity and are able to provide service to the proposed development in accordance with Chapter 71 §71.53(d)(3) and that this proposal will not affect that status.

b. Collection System
Name of Responsible Organization _____
Name of Responsible Agent _____
Agent Signature _____
Date _____

c. Conveyance System
Name of Responsible Organization _____
Name of Responsible Agent _____
Agent Signature _____
Date _____

5. Treatment Facility

The questions below are to be answered by a representative of the facility permittee. The individual signing below must be legally authorized to make representation for the organization.

	Yes	No	
a.	☐	☐	If this project proposes the use of an existing non-municipal wastewater treatment plant for the disposal of sewage, will this action create a hydraulic or organic overload at that facility?

If yes, this planning module for sewage facilities will not be reviewed by the municipality, delegated local agency and/or DEP until this issue is resolved.

If no, the treatment facility permittee must sign below to indicate that this facility has adequate treatment capacity and is able to provide wastewater treatment services for the proposed development in accordance with §71.53(d)(3) and that this proposal will not impact that status.

b. Name of Facility _____

Name of Responsible Agent _____

Agent Signature _____

Date _____

(For completion by the municipality)

6. ☐ The **SELECTED OPTION** necessary to assure long-term proper operation and maintenance of the proposed non-municipal facilities is clearly identified with documentation attached in the planning module package.

P. PUBLIC NOTIFICATION REQUIREMENT (See Section P of instructions)

This section must be completed to determine if the applicant will be required to publish facts about the project in a newspaper of general circulation to provide a chance for the general public to comment on proposed new land development projects. This notice may be provided by the applicant or the applicant's agent, the municipality or the local agency by publication in a newspaper of general circulation within the municipality affected. Where an applicant or an applicant's agent provides the required notice for publication, the applicant or applicant's agent shall notify the municipality or local agency and the municipality and local agency will be relieved of the obligation to publish. The required content of the publication notice is found in Section P of the instructions.

To complete this section, each of the following questions must be answered with a "yes" or "no". Newspaper publication is required if any of the following are answered "yes".

	Yes	**No**	
1.	☐	☒	Does the project propose the construction of a sewage treatment facility ?
2.	☐	☒	Will the project change the flow at an existing sewage treatment facility by more than 50,000 gallons per day?
3.	☐	☒	Will the project result in a public expenditure for the sewage facilities portion of the project in excess of $100,000?
4.	☐	☒	Will the project lead to a major modification of the existing municipal administrative organizations within the municipal government?
5.	☐	☒	Will the project require the establishment of *new* municipal administrative organizations within the municipal government?
6.	☐	☒	Will the project result in a subdivision of 50 lots or more? (onlot sewage disposal only)
7.	☐	☒	Does the project involve a major change in established growth projections?
8.	☐	☒	Does the project involve a different land use pattern than that established in the municipality's Official Sewage Plan?

P. PUBLIC NOTIFICATION REQUIREMENT cont'd. (See Section P of instructions)

9. ☐ ☒ Does the project involve the use of large volume onlot sewage disposal systems (Flow > 10,000 gpd)?
10. ☐ ☒ Does the project require resolution of a conflict between the proposed alternative and consistency requirements contained in §71.21(a)(5)(i), (ii), (iii)?
11. ☐ ☒ Will sewage facilities discharge into high quality or exceptional value waters?

☐ Attached is a copy of:
- ☐ the public notice,
- ☐ all comments received as a result of the notice,
- ☐ the municipal response to these comments.

☐ No comments were received. A copy of the public notice is attached.

Q. FALSE SWEARING STATEMENT (See Section Q of instructions)

I verify that the statements made in this component are true and correct to the best of my knowledge, information and belief. I understand that false statements in this component are made subject to the penalties of 18 PA C.S.A. §4904 relating to unsworn falsification to authorities.

Sean M. Donnelly, P.E.	
Name (Print)	Signature
Project Manager	8/13/20
Title	Date
100 McMorris Road, Pittsburgh, PA 15205	4129214030
Address	Telephone Number

R. REVIEW FEE (See Section R of instructions)

The Sewage Facilities Act establishes a fee for the DEP planning module review. DEP will calculate the review fee for the project and invoice the project sponsor **OR** the project sponsor may attach a self-calculated fee payment to the planning module prior to submission of the planning package to DEP. (Since the fee and fee collection procedures may vary if a "delegated local agency" is conducting the review, the project sponsor should contact the "delegated local agency" to determine these details.) Check the appropriate box.

☐ I request DEP calculate the review fee for my project and send me an invoice for the correct amount. I understand DEP's review of my project will not begin until DEP receives the correct review fee from me for the project.

☒ I have calculated the review fee for my project using the formula found below and the review fee guidance in the instructions. I have attached a check or money order in the amount of $2065 payable to "Commonwealth of PA, DEP". Include DEP code number on check. I understand DEP will not begin review of my project unless it receives the fee and determines the fee is correct. If the fee is incorrect, DEP will return my check or money order, send me an invoice for the correct amount. I understand DEP review will NOT begin until I have submitted the correct fee.

☐ I request to be exempt from the DEP planning module review fee because this planning module creates **only** one new lot and is the **only** lot subdivided from a parcel of land as that land existed on December 14, 1995. I realize that subdivision of a second lot from this parcel of land shall disqualify me from this review fee exemption. I am furnishing the following deed reference information in support of my fee exemption.

County Recorder of Deeds for _____ County, Pennsylvania

Deed Volume _____ Book Number _____

Page Number _____ Date Recorded _____

R. REVIEW FEE (continued)

Formula:

1. For a new collection system (with or without a Clean Streams Law Permit), a collection system extension, or individual tap-ins to an existing collection system use this formula.

   #41.3 Lots (or EDUs) X $50.00 = $ 2065

   The fee is based upon:

   - The number of lots created or number of EDUs whichever is higher.
   - For community sewer system projects, one EDU is equal to a sewage flow of 400 gallons per day.

2. For a surface or subsurface discharge system, use the appropriate one of these formulae.

   A. A new surface discharge greater than 2000 gpd will use a flat fee:

   $ 1,500 per submittal (non-municipal)
   $ 500 per submittal (municipal)

   B. An increase in an existing surface discharge will use:

   #_____ Lots (or EDUs) X $35.00 = $ _____

   to a maximum of $ 1,500 per submittal (non-municipal) or $ 500 per submittal (municipal)

   The fee is based upon:

   - The number of lots created or number of EDUs whichever is higher.
   - For community sewage system projects one EDU is equal to a sewage flow of 400 gallons per day.
   - For non-single family residential projects, EDUs are calculated using projected population figures

   C. A sub-surface discharge system that requires a permit under The Clean Streams Law will use a flat fee:

   $ 1,500 per submittal (non-municipal)
   $ 500 per submittal (municipal)

alcosan
allegheny county sanitary authority

September 16, 2020

Kelley R. Harrington, EIT
Gateway Engineers
100 McMorris Road
Pittsburgh PA 15205-9401

Re: University of Pittsburgh Chiller Plant – City of Pittsburgh
PA DEP Sewage Facilities Planning Module
ALCOSAN Regulator Structure M-19-00

Dear Ms. Harrington:

We have reviewed the Planning Module Component 3 for the referenced project. The project will generate an estimated flow of 16,525 GPD in the ALCOSAN Monongahela Interceptor and Woods Run Treatment Plant.

The capacity at the M-19 Regulator Structure is approximately 12.1 mgd. The monitored peak dry weather flow is approximately 5.81 mgd. Dry weather capacity exists for this connection. However, the ALCOSAN Monongahela Interceptor and the Woods Run Treatment Plant do not have the capacity for the flows generated during wet weather periods. This limitation will be addressed as ALCOSAN implements the Clean Water Plan. ALCOSAN requests that this letter be made part of the planning module submission. The signed Component 3 Planning Module is attached. The sewers in this project are to be designed as separated sanitary and storm sewers. If you need a pre-treatment permit for industrial waste, please contact Christina Dean at 412-734-8724.

If you have any questions regarding this matter, please contact me at 412-732-8004.

Sincerely,

ALLEGHENY COUNTY SANITARY AUTHORITY

Michael Lichte, P.E.
Manager of Planning

Attachment

cc:
Christina Dean (w/o attachment)
Dan Thornton (w/o attachment)
Shawn McWilliams (w/o attachment)
Barry King, PWSA (w/o attachment)
Tom Flanagan/PaDEP (w/o attachment)
Fred Fields/ACHD (w/o attachment)

EXHIBIT C.

PWSA Water and Sewer Availability Letter

PGH2O

WATER AND SEWER AVAILABILITY LETTER REQUEST

All persons planning to perform construction, demolition, or renovation work that will involve water and/or sewer services are recommended to complete this form and submit to PWSA. PWSA will review the request and reply to indicate if PWSA-owned water and/or sewer utilities are present at the site of the proposed work.

This request form is **required** for all of the following types of development. (Please note that the term "sewer" refers to sanitary sewers, combined sewers, and storm sewers.)

1. New water and/or sewer tap(s) for all approved/recorded subdivisions.
2. Change of Use and/or increase in water and/or sewer flows for residential development(s), commercial, industrial and institutional developments (i.e. total project sanitary flow is greater than 799 gallons per day).
3. New water and/or sewer tap(s) for all residential, commercial, industrial, and institutional developments.

Please email the completed form to: permitinfo@pgh2o.com

Information to be submitted by the Applicant:			
Property Owner Name:	UNIVERSITY OF PITTSBURGH		
Address of Property:	530-570 CHAMPIONS DRIVE, PITTSBURGH PA 15219		
Proposed Use of Site:	UTILITY PLANT & ATHLETIC FIELD		
Closest street intersection to the property:	VERA STREET & CHAMPIONS DRIVE		
Requester Information			
Name:	KALEB A. GATZ	Date of Request:	2020-01-31
Address:	100 McMORRIS ROAD, PITTSBURGH PA 15205		
Phone Number:	412.857.2594		
Email Address:	KGATZ@GATEWAYENGINEERS.COM		
Preferred Method of Delivery:	☒ Email ☐ Mail		

PWSA Use Only:

PWSA Water Service Available ☑ Yes ☐ No Size / Location: 8" Centre Avenue 16" Champions Drive

PWSA Sewer Service Available: ☑ Yes ☐ No Size / Location: 15" Champions Drive 16" Centre Ave.

Applicant must contact separate agency for water and/or sewer service: ☐ Yes ☒ No

Name of separate agency: _____

PWSA Approval:

Signature and Date: Wendy M. Dean 2-6-2020

Name (printed): Wendy M. Dean

Title: Engineering Tech II

Disclaimer: The information provided by PWSA does not guarantee capacity of the PWSA-owned water and/or sewer lines to satisfy the needs of the proposed development. The permit application process required by PWSA evaluates the water demand and sewer flows of the development, as provided by the Applicant, and renders a decision on the capacity of the PWSA facilities.

PGH2O Pittsburgh Water & Sewer Authority

February 6, 2020

Kaleb A. Gatz
100 McMorris Road
Pittsburgh, PA 15205

RE: Water and Sewer Availability
530 – 570 Champions Drive

Dear Mr. Gatz:

In response to your inquiry on 1/31/2020 concerning water and sewer availability for the area referenced above, please be advised that both water and sewers are available near the site, and water and sewer service will be provided in accordance with the policies and procedures of the Pittsburgh Water and Sewer Authority.

We wish to advise you that, if it is your desire to tap our water and sewer mains for service, your plans and Water and Sewer Use Application must be approved by the Authority, complete with detail showing the type of connection, meter, and backflow device before any work is performed.

Please note that the Authority in no way guarantees that the available lines have the capacity or pressure adequate for your project's needs. It is the responsibility of the project developer, design consultant, and/or architects to determine, at their expense, the adequacy of the existing water system to fulfill their needs.

If you plan to make modifications to the water or sewer system, please submit design drawings to The Pittsburgh Water and Sewer Authority for approval.

Refer to the Pittsburgh Water and Sewer Authority (PWSA) website (www.pgh2o.com) for the complete "Procedure Manual for Developers". All tap in plans and applications must be submitted according to the manual.

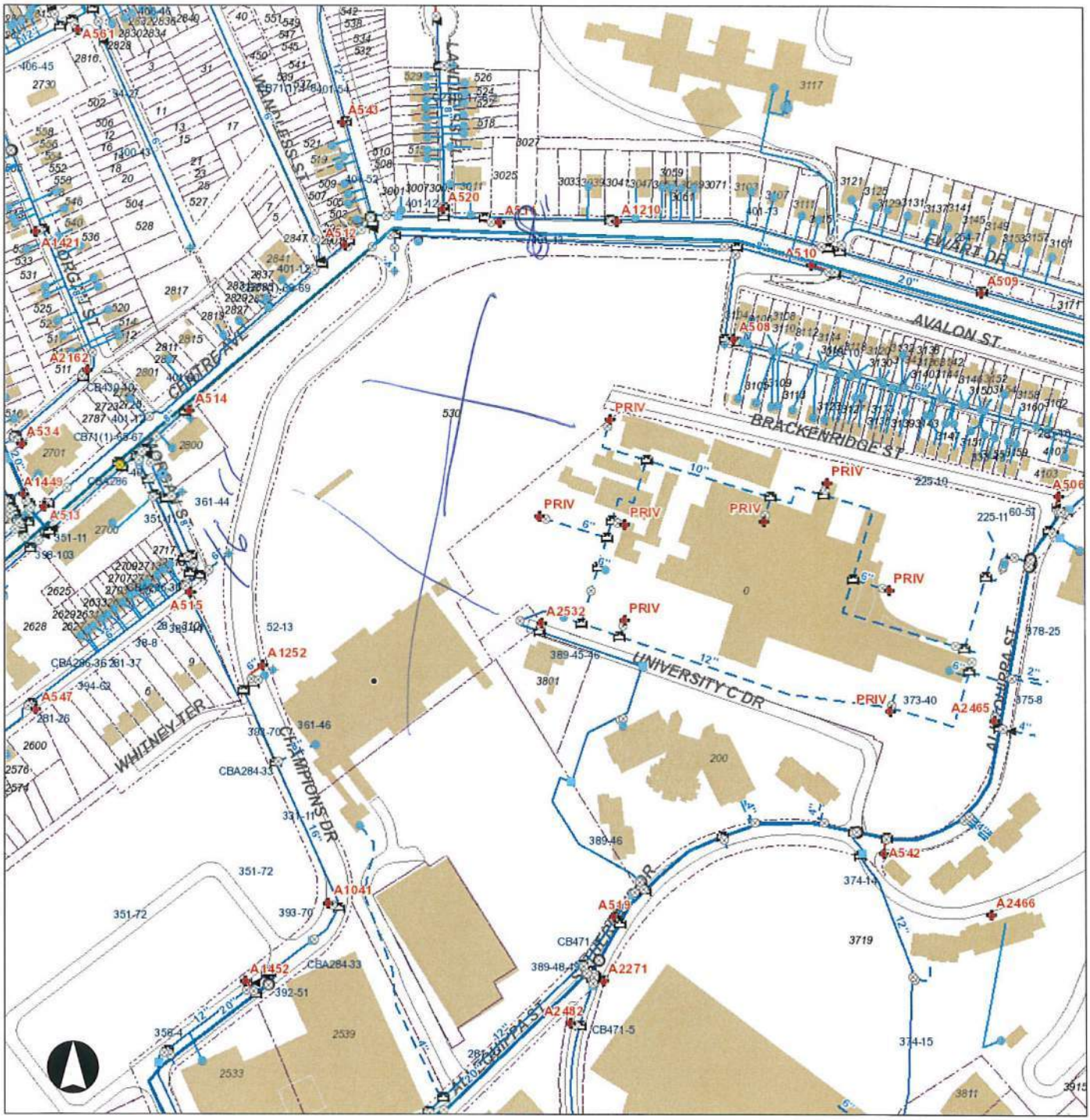
If you have any questions, please feel free to contact me at (412) 255-8800 x 8030. Thank you.

Sincerely,

Wendy M. Dean
Engineering Tech II

cc: PWSA File

530 - 570 Champions Drive - Water



Legend

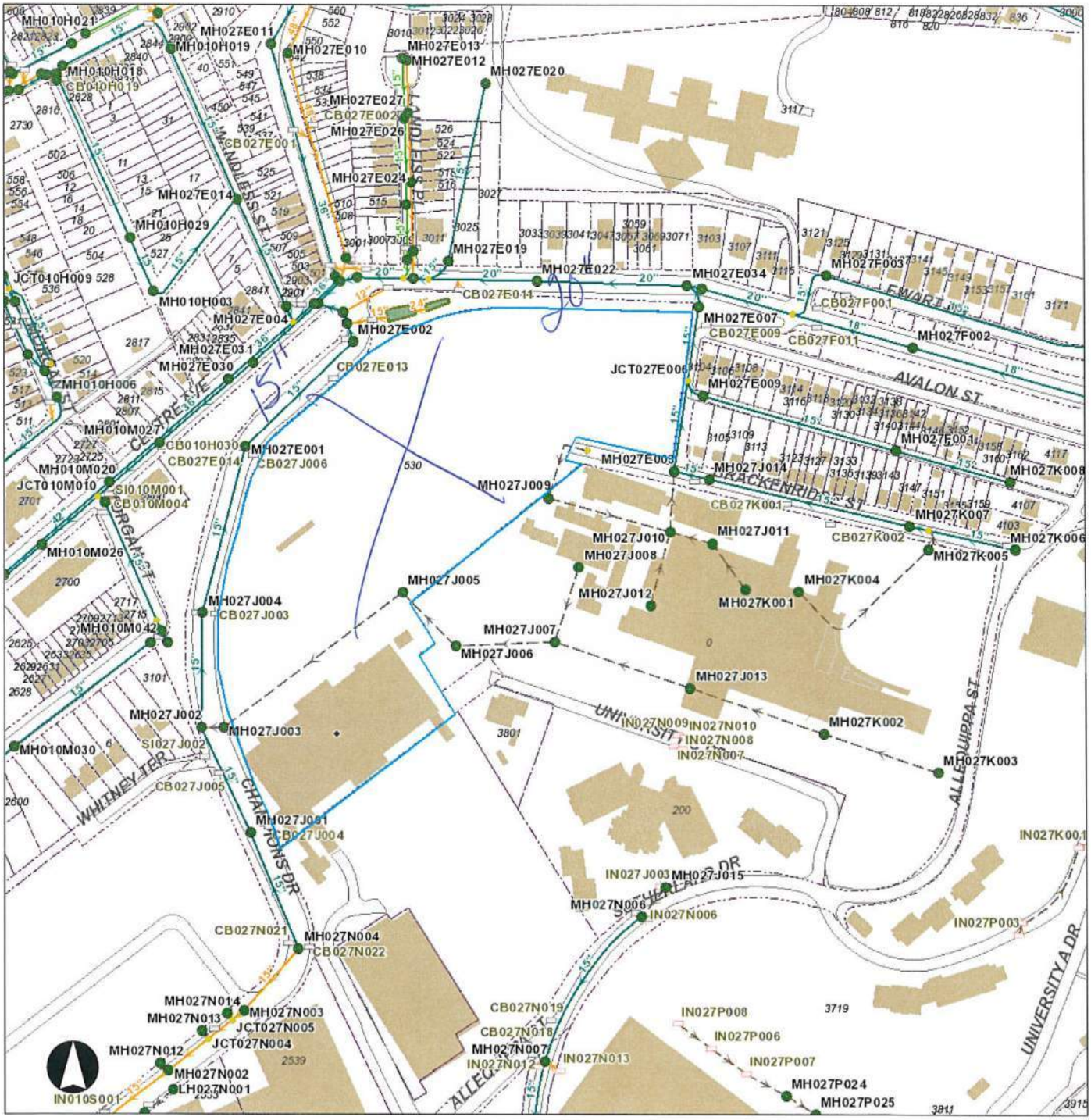
WATER	Pressure Monitoring Station	Outfall
Meter	Water Manhole	End Cap
Curb Box	Rising Main	Sewer Pump Station
Water System Pump	Supply Main	Combined Sewer
Hydrant	Transmission Main	Sanitary Sewer
System Valve	Distribution Main	Storm Sewer
Dividing Pressure Valve	Hydrant Branch	Regulated Combined Sewer
Coupling	Private Main	Overflow Sewer
Tee	**SEWER**	Interceptor
Cross	Manhole	Sewer Force Main
Reducer	Junction	Private Sewer
End Cap	Inlet	Undefined Sewer
Wash Out	Private Inlet	Green Infrastructure Underground Facilities

0 0.0425 0.085 mi

PGH2O

Date: 2/6/2020

530 - 570 Champions Drive - Sewer



Legend

WATER	Pressure Monitoring Station	Outfall
Meter	Water Manhole	End Cap
Curb Box	Rising Main	Sewer Pump Station
Water System Pump	Supply Main	Combined Sewer
Hydrant	Transmission Main	Sanitary Sewer
System Valve	Distribution Main	Storm Sewer
Dividing Pressure Valve	Hydrant Branch	Regulated Combined Sewer
Coupling	Private Main	Overflow Sewer
Tee	**SEWER**	Interceptor
Cross	Manhole	Sewer Force Main
Reducer	Junction	Private Sewer
End Cap	Inlet	Undefined Sewer
Wash Out	Private Inlet	Green Infrastructure Underground Facilities

0 0.0425 0.085 mi

PGH2O

Date: 2/6/2020

EXHIBIT D.

Project Narrative

Project Narrative

University of Pittsburgh – Chiller Plant
530-570 Champions Drive, 5th Ward, City of Pittsburgh

The proposed Chiller Plant, owned by University of Pittsburgh, involves the construction of a 15,000 ton chiller plant and a turf athletic field located at 530-570 Champion's Drive. The existing two athletic fields will be removed. The lot to be redeveloped is Lot 202 of Block 27-J in the Allegheny County Assessment Office and the project area is 3.9 acres.

The project site will experience an increase in water consumption and sanitary flow due to the construction of the 15,000 ton chiller plant, where two athletic fields currently exist. A new water service and sanitary line is proposed off of Champions Drive. Previously this site consisted of two athletic fields which had no existing sewage flow/water consumption. The estimated peak sanitary flow is 16,525 GPD or 41.3 EDUs. The estimated peak water consumption is 255,171 GPD or 637.9 EDUs.

All proposed storm and sanitary laterals will be separated on-site. The proposed 8" sanitary lateral will tie directly into the PWSA owned 24" VCP combination sewer located in Champions Drive to allow for the existing wye off the public system to be utilized. This PWSA sewer flows to the Monongahela River Interceptor (M-19) and then to ALCOSAN's treatment plant where it receives final treatment. It should be noted that PWSA's sewer map documents the collection sewer as having a 15" diameter. The CCTV footage of the sewer, which was obtained for this project, documents this line as having a 24" diameter. Since the 24" diameter has been field verified the enclosed analysis uses this as input into the sewer's hydraulic capacity calculation. Additionally,

PWSA identified the most limited capacity sewer to be between MH027E001 and MH027E002. Both manholes were paved over; therefore, the next upstream manhole, MH027J004, was used as the flow monitoring location. Refer to the enclosed emails documenting the flow monitoring location coordination with PWSA.

Flow Calculation Summary

Present Flows -Flow Monitoring

One month of flow monitoring was completed by Drnach Environmental in MH027J004 to determine the existing average and peak flows present in the sewer of interest. Flow monitoring began on 6/6/2020 and ended on 7/5/2020 (monitored for 30 days). **Analysis of the received data reports an existing average flow of 0.133 MGD and an instantaneous peak of 7.539 MGD.**

Design Capacity

The existing sewer's average and peak hydraulic capacity were calculated by determining the existing slope of the sewer of interest using survey shots taken of the flow line elevation within the monitoring manhole (MH027J004) and the next upstream manhole (MH027J002), as well as the horizontal distance between the identified manhole lid locations. The sewer was analyzed under full flow conditions, and a peaking factor of 3.5 (combined sewer) was applied to obtain the peak hydraulic capacity per the PWSA Developer's Manual. **The average hydraulic capacity was calculated to be 9.120 MGD and the peak hydraulic capacity was calculated to be 31.922 MGD.**

5-Year Projected Flow

Using the equations provided in the PWSA Developer's Manual, the project flow, 16,525 GPD, was added to the present average and peak flows to determine the projected flow in 5 years. **The projected average flow is estimated to be 2.267 MGD and the projected peak flow is estimated to be 7.933 MGD.** Since the 5-year projected flows are less than the calculated design capacity of the sewer, the additional flow due to the construction of the University of Pittsburgh Chiller Plant will not overload the sewer.

Kelley R. Harrington, E.I.T.

From: Benjamin Grunauer, E.I.T. <BGrunauer@pgh2o.com>
Sent: Friday, June 5, 2020 10:58 AM
To: Joseph E. Chirumbolo
Cc: Rob Herring, P.E.
Subject: RE: Pitt Chiller

Joe,

There are multiple connection points entering that manhole based on your tap-in plan. If you are confident that there won't be major turbulence that skews your monitoring data I would find it acceptable based on the undesirable field conditions. I did previously make a request to OPS to open the 27E002 manhole to be opened. Did they check that one again when they went out?

Benjamin Grunauer, E.I.T.
Engineer II
Ext: 5543

Pittsburgh Water and Sewer Authority
Pittsburgh, PA 15222

https://pgh2o.com

From: Joseph E. Chirumbolo <jchirumbolo@gatewayengineers.com>
Sent: Friday, June 5, 2020 10:40 AM
To: Benjamin Grunauer, E.I.T. <BGrunauer@pgh2o.com>
Subject: RE: Pitt Chiller

Ben,

Our sub was out this morning to install a flow monitor in MH027E001 and it is paved over as well. Since this manhole is covered as well, they installed the monitor in manhole 027J004 it is the only other manhole with a single pipe in and out. Please let me know if this is ok.

Thank you

Joe

From: Benjamin Grunauer, E.I.T. <BGrunauer@pgh2o.com>
Sent: Monday, June 1, 2020 12:27 PM
To: Joseph E. Chirumbolo <jchirumbolo@gatewayengineers.com>
Subject: RE: Pitt Chiller

Joe,

Move upstream to MH027E001 for your sampling point. I will work to get the other manhole uncovered for the future.

Benjamin Grunauer, E.I.T.
Engineer II
Ext: 5543

Pittsburgh Water and Sewer Authority
Pittsburgh, PA 15222

https://pgh2o.com

From: Joseph E. Chirumbolo <jchirumbolo@gatewayengineers.com>
Sent: Monday, June 1, 2020 11:11 AM
To: Benjamin Grunauer, E.I.T. <BGrunauer@pgh2o.com>
Subject: RE: Pitt Chiller

The next downstream manhole has multiple sewer lines entering the structure.

From: Benjamin Grunauer, E.I.T. <BGrunauer@pgh2o.com>
Sent: Sunday, May 31, 2020 7:23 PM
To: Joseph E. Chirumbolo <jchirumbolo@gatewayengineers.com>;
Developer_Tap_in_Permits.20013.33_Pitt_Chiller_Plant@docs.e-builder.net
Subject: RE: Pitt Chiller

Joe,

Was your sub able to locate the next downstream manhole from there? If so, please sample that one. Let me know if that was also paved over.

Benjamin Grunauer, E.I.T.
Engineer II
Ext: 5543

Pittsburgh Water and Sewer Authority
Pittsburgh, PA 15222

https://pgh2o.com

From: Joseph E. Chirumbolo <jchirumbolo@gatewayengineers.com>
Sent: Friday, May 29, 2020 10:10 AM
To: Developer_Tap_in_Permits.20013.33_Pitt_Chiller_Plant@docs.e-builder.net
Cc: Benjamin Grunauer, E.I.T. <BGrunauer@pgh2o.com>
Subject: Pitt Chiller

Ben,

Our sub that is performing the sewer flow monitoring performed a field investigation yesterday and was unable to location our test manhole. The manhole looks to be paved over. Could you have a crew uncover the manhole? Please give me a call to discuss.

Thank you

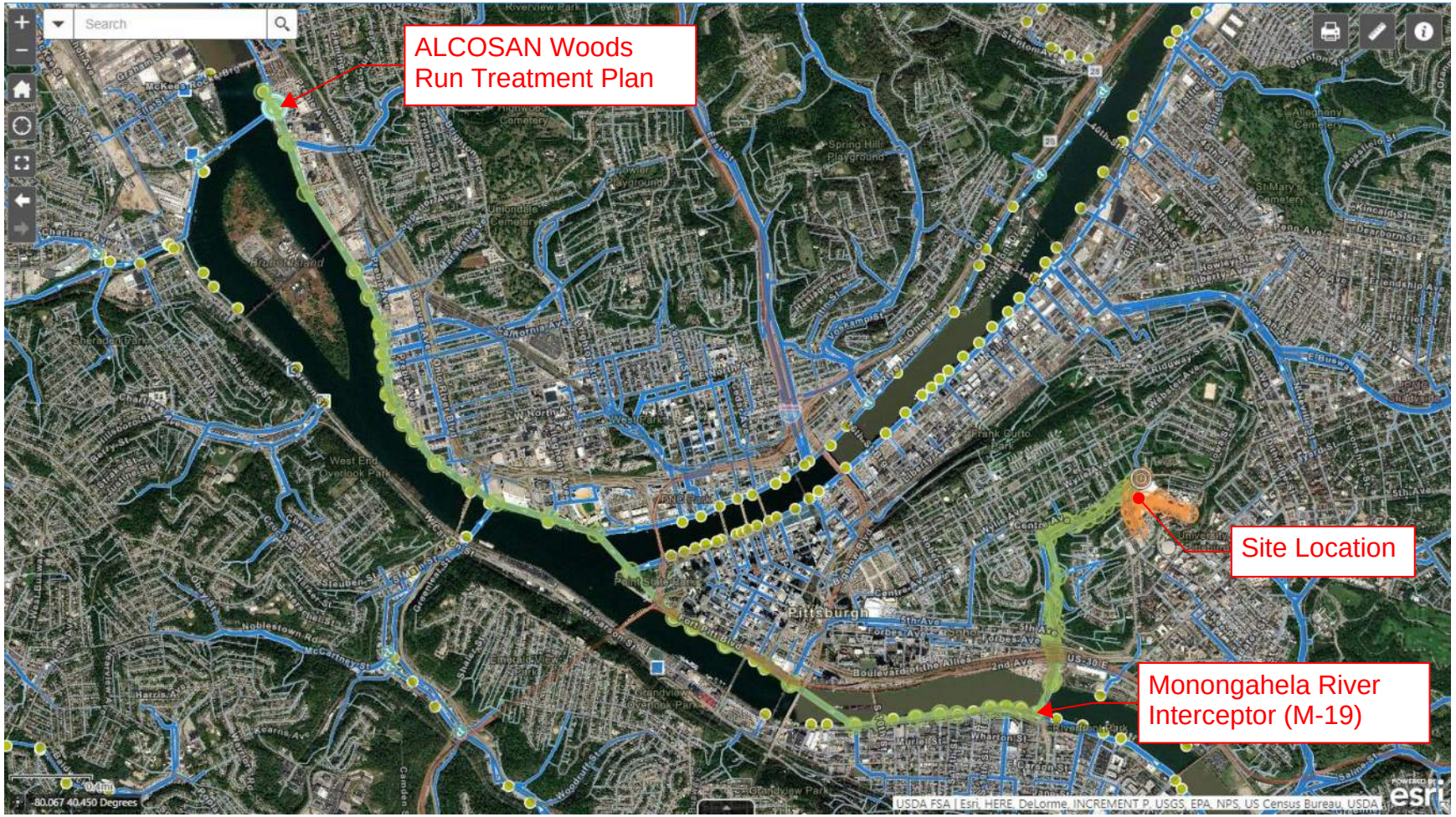
Joseph E. Chirumbolo Utilities Specialist, Safety Tier 2
100 McMorris Road, Pittsburgh PA 15205 **P:** (412) 409-2373 **F:** 412-921-9960
E: jchirumbolo@gatewayengineers.com

The Gateway Engineers, Inc. **On Call. On Time. On Target.** www.gatewayengineers.com

Sewer Mapping

University of Pittsburgh - Chiller Plant

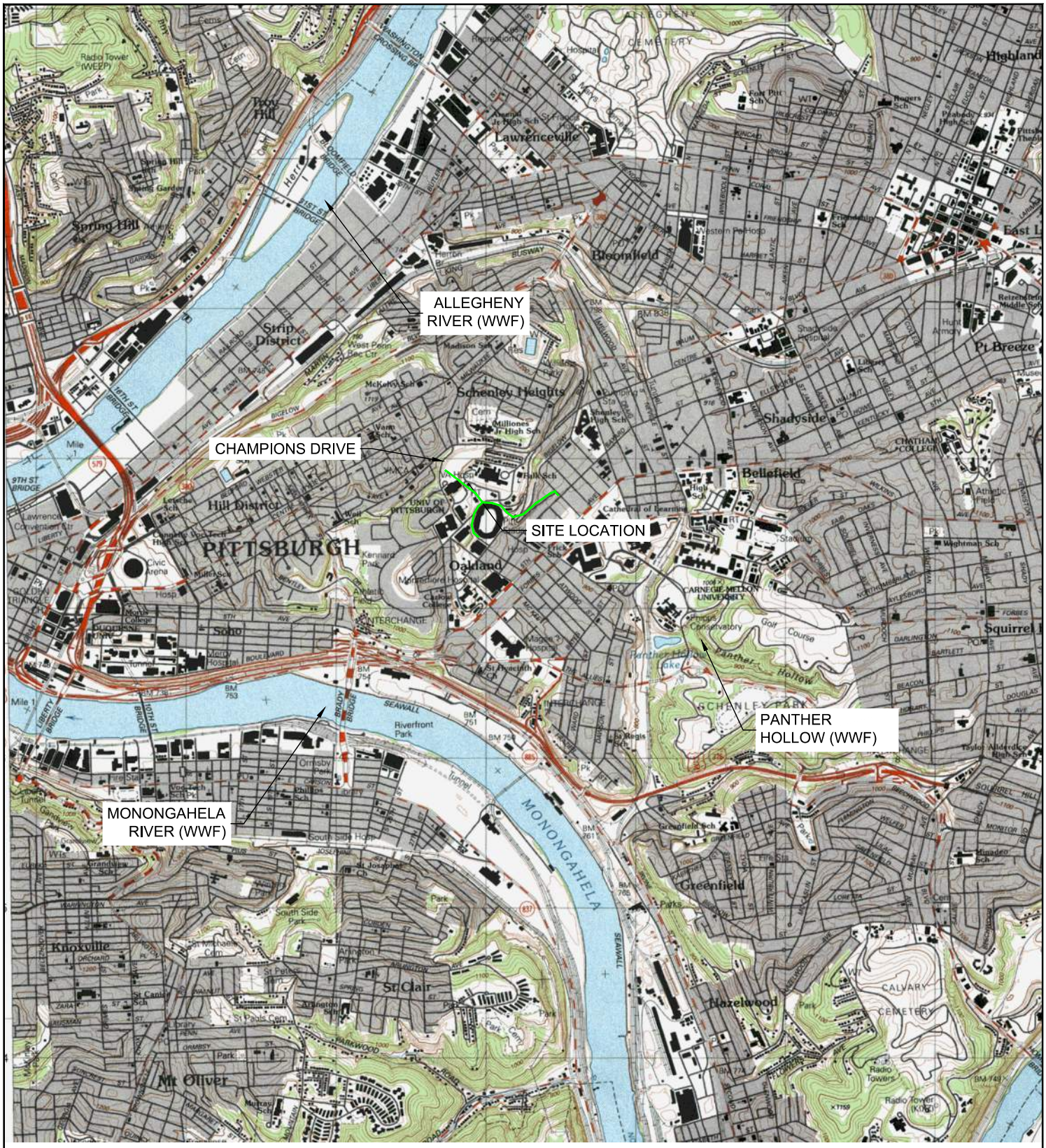
5th Ward, City of Pittsburgh, Allegheny County, PA



Source: 3RWW Sewer Atlas

EXHIBIT E.

U.S.G.S. Site Location Map



NORTH

SITE LOCATION MAP
PITTSBURGH EAST QUADRANGLE
SCALE: 1" = 2000'

USGS MAP

Project Number: C-4187-0054
Drawing Scale: 1"=2000'
Date Issued: MARCH 2020
Index Number: --
Drawn By: RRR
Checked By: SMD
Project Manager: SMD

USGS

UPPER CAMPUS CHILLED WATER PLANT
530-570 CHAMPIONS DRIVE
PITTSBURGH, PA 15219

PREPARED FOR:

UNIVERSITY OF PITTSBURGH
3525 FORBES AVENUE
PITTSBURGH, PA 15260

Date	No	REVISION RECORD
-	01	-
-	02	-
-	03	-
-	04	-
-	05	-
-	06	-
-	07	-
-	08	-

GATEWAY®
The Gateway Engineers, Inc.
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Pittsburgh, PA
gatewayengineers.com
855-634-9284

Path & Filename=G:\Projects\4000\4187-0054 Chiller Plant Civil\Dwg\02-Sheet\USGS Map.dwg
Plot Date=10/6/2020 3:37 PM Kelley R. Harrington, E.I.T.
Save Date=10/6/2020 3:36 PM

EXHIBIT F.

Sewage Flow Calculations

Sewage Flow Calculations

University of Pittsburgh – Chiller Plant
530-570 Champions Drive, 5th Ward, City of Pittsburgh, Allegheny County

The University of Pittsburgh is proposing the construction of a 15,000 ton chiller plant and turf athletic field along Champion's Drive in the City of Pittsburgh, Allegheny County, Pennsylvania. A 21,550 sq. ft. facility is proposed to house the chiller plant.

Existing Peak Sewage Flow

Existing Peak Flow = 0 GPD

Proposed Building Details

1 Office Employee
(Count based off University of Pittsburgh estimated staffing count)

Proposed Peak Chiller Plant Makeup (Water Demand) = 282,685 GPD
(See attached calculations from Burns McDonnell)

Proposed Peak Chiller Plant Blowdown (Sewage Flow) = 44,039 GPD
(See attached calculations from Burns McDonnell)

Project Peak Flow

Office:

Flow per PWSA Developers Manual Table 1 of Section 3
Office = 10 GPD/Employee
Sewage Flow/Water Consumption
(1 office employee) x (10 GPD per employee) = 10 GPD

Chiller Plant:

Sewage Flow
MEP calculations reflect a re-use of 62.5% of the proposed blowdown within the system.
(See attached memo from Burns McDonnell)
Re-use: (44,039 GPD) x 0.625 = 27,524 GPD
Sewage Flow = (44,039 GPD) x 0.375 = 16,515 GPD
Water Consumption
Water Demand = Makeup – Re-use = 282,685 GPD – 27,524 GPD = 255,161 GPD

Total Peak Sewage Flow = 16,515 GPD + 10 GPD = 16,525 GPD
Total Peak Water Demand = 255,161 GPD + 10 GPD = 255,171 GPD

Peak Sewage Flow = 16,525 GPD
16,525 GPD / 400 = **41.3 EDUs**

Peak Water Demand = 255,171 GPD
255,171 GPD / 400 = **637.9 EDUs**

Kaleb A. Gatz

From: Meeker, Nicholas <nmeeker@burnsmcd.com>
Sent: Tuesday, March 10, 2020 3:14 PM
To: Kaleb A. Gatz; Harris, Jim
Cc: Mark W. Reidenbach, P.E., P.L.S., S.E.O.; Sean M. Donnelly, P.E.
Subject: RE: Emailing: Memo - Cooling Tower Blowdown Calculations.pdf, Memo - Cooling Tower Makeup Calculations.pdf

Sean,

Below is taken from our hourly dispatch model with York chillers.

	BLOWDOWN GPD	MAKEUP GPD
MAX	44,039	282,685
MIN	6,469	42,187
AVG	21,499	138,979

Nick Meeker, PE* \ Burns & McDonnell
Mechanical Engineer \ *On*Site Energy & Power
919-900-1869
nmeeker@burnsmcd.com \ burnsmcd.com
5511 Capital Center Drive, Suite 450 \ Raleigh, NC 27606

From: Kaleb A. Gatz <kgatz@gatewayengineers.com>
Sent: Tuesday, March 10, 2020 2:59 PM
To: Harris, Jim <jwharris@burnsmcd.com>
Cc: Mark W. Reidenbach, P.E., P.L.S., S.E.O. <mreidenbach@gatewayengineers.com>; Meeker, Nicholas <nmeeker@burnsmcd.com>; Sean M. Donnelly, P.E. <sdonnelly@gatewayengineers.com>
Subject: RE: Emailing: Memo - Cooling Tower Blowdown Calculations.pdf, Memo - Cooling Tower Makeup Calculations.pdf

That is correct

Grace and Peace,

Kaleb A. Gatz

From: Sean M. Donnelly, P.E. <sdonnelly@gatewayengineers.com>
Sent: Tuesday, March 10, 2020 2:58 PM
To: Harris, Jim <jwharris@burnsmcd.com>; Meeker, Nicholas <nmeeker@burnsmcd.com>
Cc: Mark W. Reidenbach, P.E., P.L.S., S.E.O. <mreidenbach@gatewayengineers.com>; Kaleb A. Gatz

<kgatz@gatewayengineers.com>
Subject: RE: Emailing: Memo - Cooling Tower Blowdown Calculations.pdf, Memo - Cooling Tower Makeup Calculations.pdf

I believe to but I'll pass this along to Mark and Kaleb...not 100% sure.

Sean

From: Harris, Jim <jwharris@burnsmcd.com>
Sent: Tuesday, March 10, 2020 2:51 PM
To: Sean M. Donnelly, P.E. <sdonnelly@gatewayengineers.com>; Meeker, Nicholas <nmeeker@burnsmcd.com>
Subject: RE: Emailing: Memo - Cooling Tower Blowdown Calculations.pdf, Memo - Cooling Tower Makeup Calculations.pdf

Sean,
You are looking for Peak Gallons per DAY, for both Blowdown and Makeup, right?

Jim Harris
O 919-900-1862 \ M 919-210-6863

From: Sean M. Donnelly, P.E. <sdonnelly@gatewayengineers.com>
Sent: Tuesday, March 10, 2020 2:43 PM
To: Harris, Jim <jwharris@burnsmcd.com>; Meeker, Nicholas <nmeeker@burnsmcd.com>
Subject: FW: Emailing: Memo - Cooling Tower Blowdown Calculations.pdf, Memo - Cooling Tower Makeup Calculations.pdf

Jim/Nick,
Any update on these additional peak numbers we need for sewage planning?
Thanks
Sean

> **From:** Harris, Jim <jwharris@burnsmcd.com>
> **Sent:** Friday, March 6, 2020 3:47 PM
> **To:** Sean M. Donnelly, P.E. <sdonnelly@gatewayengineers.com>; Meeker, Nicholas <nmeeker@burnsmcd.com>
> **Cc:** Ryan R. Richard, E.I.T. <rrichard@gatewayengineers.com>; Kaleb A. Gatz <kgatz@gatewayengineers.com>
> **Subject:** RE: Emailing: Memo - Cooling Tower Blowdown Calculations.pdf, Memo - Cooling Tower Makeup Calculations.pdf
>
> Sean,
> These are continuous processes. Both blowdown and makeup will happen continuously throughout the day at varying rates, but the values Nick provided are the calculated peak flows for each.
>
> Thanks,
>
> Jim Harris
> O 919-900-1862 \ M 919-210-6863

From: Sean M. Donnelly, P.E. <sdonnelly@gatewayengineers.com>
Sent: Friday, March 6, 2020 2:23 PM
To: Harris, Jim <jwharris@burnsmcd.com>; Meeker, Nicholas <nmeeker@burnsmcd.com>
Cc: Ryan R. Richard, E.I.T. <rrichard@gatewayengineers.com>; Kaleb A. Gatz <kgatz@gatewayengineers.com>
Subject: FW: Emailing: Memo - Cooling Tower Blowdown Calculations.pdf, Memo - Cooling Tower Makeup Calculations.pdf

Nick,
Next round of items needed from you for our sewage planning...please see below. Thanks
Sean

From: Kaleb A. Gatz <kgatz@gatewayengineers.com>
Sent: Friday, March 6, 2020 1:46 PM
To: Sean M. Donnelly, P.E. <sdonnelly@gatewayengineers.com>; Kelley R. Harrington, E.I.T. <kharrington@gatewayengineers.com>; Joseph E. Chirumbolo <jchirumbolo@gatewayengineers.com>
Cc: Mark W. Reidenbach, P.E., P.L.S., S.E.O. <mreidenbach@gatewayengineers.com>
Subject: RE: Emailing: Memo - Cooling Tower Blowdown Calculations.pdf, Memo - Cooling Tower Makeup Calculations.pdf

Sean,

Can we get a confirmation on the following information:

1. Duration and number of cycles for the Blowdown PER DAY
2. Duration and number of cycles for the Makeup PER DAY

Grace and Peace,

Kaleb A. Gatz

From: Sean M. Donnelly, P.E. <sdonnelly@gatewayengineers.com>
Sent: Monday, February 24, 2020 3:33 PM
To: Kelley R. Harrington, E.I.T. <kharrington@gatewayengineers.com>; Kaleb A. Gatz <kgatz@gatewayengineers.com>; Joseph E. Chirumbolo <jchirumbolo@gatewayengineers.com>
Subject: Fwd: Emailing: Memo - Cooling Tower Blowdown Calculations.pdf, Memo - Cooling Tower Makeup Calculations.pdf

Let me know if this works and we can pass along to PWSA.

Thanks!

Sean Donnelly
412-889-6984 (c)

Sent from my iPhone

Begin forwarded message:

From: "Meeker, Nicholas" <nmeeker@burnsmcd.com>
Date: February 24, 2020 at 2:58:14 PM EST
To: "Sean M. Donnelly, P.E." <sdonnelly@gatewayengineers.com>, "Ryan R. Richard, E.I.T." <rrichard@gatewayengineers.com>
Cc: "Harris, Jim" <jwharris@burnsmcd.com>
Subject: Emailing: Memo - Cooling Tower Blowdown Calculations.pdf, Memo - Cooling Tower Makeup Calculations.pdf

Sean,

Attached are the sealed calculations for makeup and blowdown for your PWSA meeting. Let me know if you need anything else.

Thanks,
Nick

Sean M. Donnelly, P.E. Project Manager, Safety Tier 3
100 McMorris Road, Pittsburgh PA 15205 **P:** (412) 409-2288 **F:** 412-921-9960
E: sdonnelly@gatewayengineers.com

The Gateway Engineers, Inc. **On Call. On Time. On Target.** www.gatewayengineers.com

Memorandum

BURNS McDONNELL

Date: July 9th, 2020
Subject: Memo of Cooling Tower Blowdown Calculations

The data provided within this memo is to show the design blowdown for the cooling towers at the new Upper Campus Chilled Water Plant designed for the University of Pittsburgh. The plant is being designed to support 15,000 tons of chilled water generation. The condenser water for the chillers will be generated by cooling towers. This condenser water system requires a blowdown process to remove solids in the water that accumulate during the evaporation process which is normally sent to drain. However, the plant will incorporate blowdown treatment to recover an estimated 62.5% for to supplement makeup water. The remaining 37.5% will be sent to drain.

Calculations below are completed per cooling tower manufacturer guidelines, as referenced below.

$$C = \frac{E + D + B}{D + B}$$

Where: C = Cycles of concentration
E = Rate of evaporation; approximated as total water flow rate in gpm times the total cooling range (°F) times 0.0008
D = Rate of drift loss; approximated as total water flow in gpm times 0.0002
B = Rate of blowdown in gpm

From Marley/SPX 2009 Cooling Tower Fundamentals

Assumptions

- Quantity of tower cells = 6
- Condenser water flow per cell = 7500gpm
- Tower cooling range = 10°F
- Cycles of concentration = 6
- Blowdown recovery = 62.5%

$$E = (7{,}500gpm) \times 6 \times 10°F \times 0.0008 = 360gpm$$

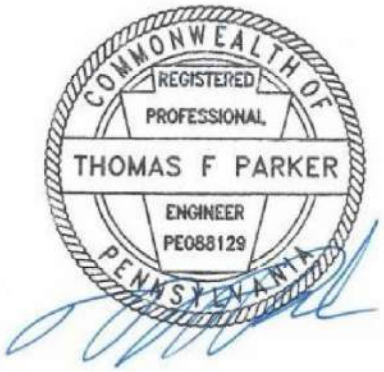
$$D = (7{,}500gpm) \times 6 \times 0.0002 = 9gpm$$

$$B = \frac{360gpm - [(6-1) \times 9gpm]}{(6-1)} = 63gpm$$

$$Blodown\ to\ Drain = 63gpm \times 62.5\% = 39.4gpm$$

Signed,

Tom Parker, PE



Jul 14 2020 1:01 PM

EXHIBIT G.

PWSA Water and Sewer Use Approval

PGH2O Pittsburgh Water & Sewer Authority

August 11, 2020

Kelley Harrington, E.I.T.
The Gateway Engineers, Inc.
100 McMorris Road
Pittsburgh, PA 15205

Subject: Water and Sewer (W/S) Use Approval
Project Name: 20013.33 Pitt Chiller Plant
PWSA Project No.: 20013.33

Dear Ms. Harrington:

Pursuant to your request, we have reviewed the W/S Use Application (Application) for the aforementioned Project. This letter shall serve as confirmation that the Application has been approved. Please see below for the approved flows:

Type of Flow	Sanitary, gpd	Water, gpd	Storm, cfs
Project Flow	16,525	255,171	22.01
Existing Flow	0	0	21.97
Net Flow	16,525	255,171	

Please be advised that the need for sewage planning shall be determined by the Department of Environmental Protection (DEP). After issuance of this letter, the PWSA shall email the Preliminary Determination on the Need for Sewage Planning Letter to the DEP. Typically, the DEP will respond via email with the Final Determination on the Need for Sewage Planning. Sewage planning is likely required, we have enclosed for your use the location of the most limited capacity sewer.

Our review was based on information provided by the Applicant under the assumption that this information was accurate and complete. Should you have any questions, please do not hesitate to contact me directly at 412-255-8800 x5543 or BGrunauer@pgh2o.com.

Sincerely,

Ben Grunauer

Benjamin Grunauer, E.I.T.
Engineer II

Enclosure(s)
cc: Barry King, P.E. – PWSA (via email)
Kate Mechler, P.E. – PWSA (via email)
Robert Herring, P.E. – PWSA (via email)
eBuilder – Filing System (via email)

Water and Sewer (W/S) Use Application Form

Instructions The complete W/S Use Application shall be uploaded via e-builder. To obtain an e-builder project folder, please make a request on our website at www.pgh2o.com/permits. In addition, please refer to the Developer's Manual for detailed information on application requirements.

Requirements

- [x] Application Fee
- [x] Application Form
- [x] Narrative
- [x] Flow Calculations
- [x] Site Plan
- [x] Floor Plan

Project Info

Project Name: University of Pittsburgh Chiller Plant

Address: 530-570 Champions Drive
Pittsburgh, PA 15219

Is the Project located on a lot created prior to May 15, 1972? [x] YES [ ] NO

Owner/Developer

Name: University of Pittsburgh

Address: 3400 Forbes Ave #5
Pittsburgh, PA 15213

Email: mikesinack@pitt.edu

Phone Number: 412-624-9545

Consultant

Firm Name: The Gateway Engineers, Inc.

Address: 100 McMorris Road
Pittsburgh, PA 15205

Contact Name: Kelley R. Harrington

Email: kharrington@gatewayengineers.com

Phone Number: 412-409-2302

Flow Data

Type of Flow	Sanitary, gpd	Water, gpd	Storm, cfs
Project Flow	16,525	255,171	22.01
Existing Flow	0	0	21.97
Net Flow	16,525	255,171	Not Required

Signature By signing below, I hereby certify, to the best of my knowledge, that the information provided within the Water and Sewer Use Application is true, complete and accurate.

Name, printed: Kelley R. Harrington

Signature: Kelley R. Harrington

Date: 07/28/2020

MLCS Map

Sampling Manhole

Most Limited Capacity Sewer

Project Location

Legend

WATER

- Meter
- Curb Box
- Water System Pump
- Hydrant
- System Valve
- Dividing Pressure Valve
- Coupling
- Tee
- Cross
- Reducer
- End Cap
- Wash Out
- Pressure Monitoring Station
- Water Manhole
- Rising Main
- Supply Main
- Transmission Main
- Distribution Main
- Hydrant Branch
- Private Main
- Water Service Line

SEWER

- Manhole
- Junction
- Inlet
- Private Inlet
- Outfall
- End Cap
- Sewer Pump Station
- Combined Sewer
- Sanitary Sewer
- Storm Sewer
- Regulated Combined Sewer
- Overflow Sewer
- Interceptor
- Sewer Force Main
- Private Sewer
- Undefined Sewer
- Green Infrastructure Underground Facilities

0 0.0275 0.055 mi

Date: 4/30/2020

Most Limited Capacity Sewer (MLCS) Spreadsheet

PROJECT NAME:	20013.33 Pitt Chiller Plant
PWSA PROJECT NUMBER:	20013.33
PWSA REVIEWER:	Benjamin Grunauer
DATE:	April 30, 2020

LEGEND:

Output Data
Input Data
Questionable Data
Hydraulically Limited Sewer

Upstream MH	Downstream MH	Upstream Invert	Downstream Invert	Length, ft	Diam., in.	Material	n	Area, sf	Wetted P, ft	Slope	Flow, gpd
MH027E001	MH027E002	1025.00	1005.00	279.94	15	VCP	0.015	1.23	3.927	7.14%	9,697,653
MH027E002	MH027E006	1005.00	997.19	74.41	15	VCP	0.015	1.23	3.927	10.50%	11,755,015
MH027E006	MH027E005	1004.29	1003.00	56.34	24	VCP	0.015	3.14	6.283	2.29%	19,225,553
MH027E005	MH027E031	1002.74	994.96	181.05	54	RCP	0.013	15.90	14.137	4.30%	264,176,700
MH027E031	MH010M027	994.99	986.50	254.79	54	RCP	0.013	15.90	14.137	3.33%	232,628,953
MH010M027	JCT010M010	986.55	981.11	166.97	54	RCP	0.013	15.90	14.137	3.26%	230,093,024
JCT010M010	MH010M026	981.11	976.13	152.55	54	RCP	0.013	15.90	14.137	3.26%	230,190,603
MH010M026	MH010M025	976.35	967.06	361.68	54	RCP	0.013	15.90	14.137	2.57%	204,243,541
MH010M025	MH010M024	967.15	959.40	325.97	54	RCP	0.013	15.90	14.137	2.38%	196,501,761
MH010M024	MH010M001	959.23	953.51	267.97	54	RCP	0.013	15.90	14.137	2.13%	186,189,869
MH010M001	MH010R021	953.85	946.01	310.47	54	RCP	0.013	15.90	14.137	2.53%	202,514,188
MH010R021	MH010L026	945.69	940.92	281.05	54	RCP	0.013	15.90	14.137	1.70%	166,023,288
MH010L026	JCT010L012	940.33	936.84	53.30	54	RCP	0.013	15.90	14.137	6.55%	326,111,031
JCT010L012	MH010R033	937.35	936.10	62.33	93	RCP	0.013	47.17	24.347	2.01%	769,090,412
MH010R033	MH010R026	936.09	934.56	150.57	93	RCP	0.013	47.17	24.347	1.02%	547,453,036
MH010R026	MH010R007	934.49	931.65	333.69	93	RCP	0.013	47.17	24.347	0.85%	501,026,271
MH010R007	MH010R034	931.65	931.54	15.80	93	RCP	0.013	47.17	24.347	0.70%	453,209,005
MH010R034	MH010R032	931.54	930.38	166.06	93	RCP	0.013	47.17	24.347	0.70%	453,908,112
MH010R032	JCT011C005	930.38	913.44	977.86	93	RCP	0.013	47.17	24.347	1.73%	714,815,730
JCT011C005	MH011G027	913.44	899.58	523.07	78	RCP	0.013	33.18	20.420	2.65%	553,064,730
MH011G027	JCT011G007	899.58	897.88	40.68	78	RCP	0.013	33.18	20.420	4.18%	694,555,887
JCT011G007	JCT011G001	897.88	882.49	193.21	66	RCP	0.013	23.76	17.279	7.97%	614,196,964
JCT011G001	JCT011G005	882.49	859.25	125.23	66	RCP	0.013	23.76	17.279	18.56%	937,502,225
JCT011G005	MH011G011	859.25	854.30	128.23	66	RCP	0.013	23.76	17.279	3.86%	427,574,957
MH011G011	MH011L009	853.93	818.16	326.77	66	RCP	0.013	23.76	17.279	10.95%	720,021,388
MH011L009	MH011L017	818.00	796.74	138.57	66	RCP	0.013	23.76	17.279	15.34%	852,327,516
MH011L017	JCT011L014	796.74	779.84	147.07	66	RCP	0.013	23.76	17.279	11.49%	737,808,689
JCT011L014	JCT011L002	779.84	760.65	197.41	60	Brick	0.016	19.63	15.708	9.72%	427,561,896
JCT011L002	JCT011L003	760.65	755.16	9.17	60	Brick	0.016	19.63	15.708	59.84%	1,060,814,265
JCT011L003	JCT011L015	755.16	739.53	136.18	60	Brick	0.016	19.63	15.708	11.48%	464,593,813
JCT011L015	JCT011L012	739.53	726.62	191.80	60	Brick	0.016	19.63	15.708	6.73%	355,728,634
JCT011L012	MH011L014	726.62	716.16	117.54	60	Brick	0.016	19.63	15.708	8.90%	409,175,812
MH011L014	ADC011RM19	716.06	710.66	498.61	96	Brick	0.016	50.27	25.133	1.08%	499,785,771

EXHIBIT H.

PWSA Tap Allocation Letter

Pittsburgh Water & Sewer Authority

August 11, 2020

Mr. Thomas Flanagan
PA Department of Environmental Protection
Clean Water Program
400 Waterfront Drive
Pittsburgh, PA 15222

Subject: Tap Allocation Authorization Letter

Dear Mr. Flanagan:

Please be advised that the Pittsburgh Water and Sewer Authority (PWSA) authorizes the tap allocations associated with the following Project:

Project Name:	20013.33 Pitt Chiller Plant
Project Address:	530 Champion's Drive Pittsburgh, PA 15219
Net Flow, gpd:	16,525
EDU's, 400gpd/EDU:	41.31

Our review is based on information provided by others under the assumption that this information was accurate and complete. Should you have any questions, please do not hesitate to contact me directly at x5543 or BGrunauer@pgh2o.com.

Sincerely,

Ben Grunauer

Benjamin Grunauer, E.I.T.
Engineer II

cc: Barry King, P.E. – PWSA (via email)
Kate Mechler, P.E. – PWSA (via email)
Robert Herring, P.E. – PWSA (via email)
The Gateway Engineers, Inc. – Applicant (via email)
Regis Ryan – DEP (via email)
eBuilder – Filing System (via email)

EXHIBIT I.

Existing Sewer Flow Calculations

PGH2O Pittsburgh Water & Sewer Authority

August 28, 2020

Kelley Harrington, E.I.T.
The Gateway Engineers, Inc.
100 McMorris Road
Pittsburgh, PA 15205

Subject: Sewage Facilities Planning Module (SFPM)
Approval for Collection System Flows
Project Name: 20013.33 Pitt Chiller Plant (Project)
PWSA Project No.: 20013.33

Dear Ms. Harrington:

Pursuant to your request, we have reviewed the SFPM and determined that the Project will not create a dry-weather hydraulic overload within the next five (5) years for any collection facility owned by the Pittsburgh Water and Sewer Authority (PWSA). We have enclosed for your use the electronically signed "Section J – Chapter 94 Consistency Determination". Please be advised that this approval is limited to the collection system portion of the SFPM.

Our review was based on information provided by others under the assumption that this information was accurate and complete. Should you have any questions, please do not hesitate to contact me directly at x5543 or Bgrunauer@pgh2o.com.

Sincerely,

Ben Grunauer

Benjamin Grunauer, E.I.T.
Engineer II

Enclosures
cc: Barry King, P.E. – PWSA (via email)
Kate Mechler, P.E. – PWSA (via email)
Robert Herring, P.E. – PWSA (via email)
Thomas Flanagan – DEP (via email)
eBuilder – Filing System (via email)

PGH2O Pittsburgh Water & Sewer Authority

MEMO

To: Barry King, P.E. - Director of Engineering and Construction

From: Benjamin Grunauer, E.I.T.

Date: August 28, 2020

Subject: Department of Environmental Protection (DEP) - Sewage Facilities Planning Module (SFPM)

Chapter 94 Consistency Determination

Project Name: 20013.33 Pitt Chiller Plant (Project)

Project Address: 570 Champions Drive

PWSA Project Number: 20013.33

Dear Barry,

The Pittsburgh Water and Sewer Authority (PWSA) received a SFPM application for the aforementioned Project. In accordance with Title 25 of the Pennsylvania Code, the PWSA is required to prepare an annual Wasteload Management Report on the collection and conveyance of wastewater relative to available capacity. Our review of the SFPM was conducted to understand how the Project will impact available dry-weather capacity and whether the proposed flows will contribute to a dry-weather hydraulic overload within the next five (5) years. Please note that a dry-weather hydraulic overload shall require both the denial of the SFPM and the submission of a Corrective Action Plan to the DEP.

We have determined that the Project will not contribute to a dry-weather hydraulic overload within the next five years. Please refer to the enclosed hydraulic calculations for additional information. Upon your approval, please sign and return the enclosed "Section J - Chapter 94 Consistency Determination" page from the SFPM.

Our review was based on information provided by others under the assumption that this information was accurate and complete. Should you have any questions, please do not hesitate to contact me directly.

Yours truly,

Ben Grunauer

Benjamin Grunauer, E.I.T.
Engineer II

Enclosures
cc: Robert Herring, P.E. - PWSA
e-Builder – Filing System

Penn Liberty Plaza I
1200 Penn Avenue
Pittsburgh PA 15222

info@pgh2o.com
T 412.255.2423
F 412.255.2475

www.pgh2o.com
@pgh2o

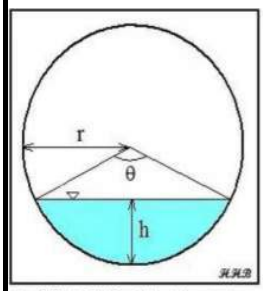
Customer Service /
Emergencies:
412.255.2423

Sewage Facilities Planning Module
Chapter 94 Consistency Determination
Hydraulic Calculations Spreadsheet for Flow Monitoring Measurements

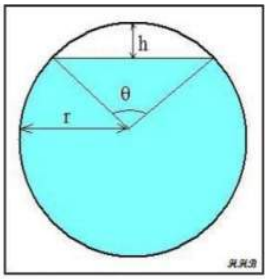
PROJECT NAME:	20013.33 Pitt Chiller Plant
PWSA PROJECT NUMBER:	20013.33
PWSA REVIEWER:	Benjamin Grunauer, E.I.T.
DATE:	August 17, 2020

LEGEND: Input Data | Output Data

Section A: Manning Equation for Partially Filled Pipes



Partially Full Pipe Flow Parameters (Less Than Half Full)



Partially Full Pipe Flow Parameters (More Than Half Full)

Variable	*Units*	*Description*
Q	ft^3	Volumetric flowrate
n	Unitless	Manning Roughness Coeff.
A	ft^2	Cross-Sectional Area of Flow
R	ft	Hydraulic Radius
S	ft/ft	Slope of Hydraulic Grade Line
P	ft	Wetted Perimeter of "A"
r	ft	Radius
h	ft	Depth of Flow or Headspace
Θ	radians	Central Angle

$$Q = \left(\frac{1.49}{n}\right) \times A \times R^{2/3} \times S^{1/2} \qquad R = \frac{A}{P} \qquad \Theta = 2 \times \cos^{-1}\left(\frac{r-h}{r}\right)$$

$$A_{<50\%\ Full} = \frac{r^2(\Theta - \sin\Theta)}{2} \qquad P_{<50\%\ Full} = r \times \Theta$$

OR

$$A_{>50\%\ Full} = \pi \times r^2 \times \frac{r^2(\Theta - \sin\Theta)}{2} \qquad P_{>50\%\ Full} = (2 \times \pi \times r) - (r \times \Theta)$$

Section B: Data for Calculations

Peaking Factor, P.F.	
Sanitary Sewers	3
Combined Sewers	3.5

Proposed Project Flows		
Variable	Value	Units
Q_p	16,525	gpd

Variable	*Value*	*Units*
Material	VCP	
n	0.015	unitless
S	0.064	ft/ft
h	2.000	ft
D	2.00	ft
P.F.	3.5	unitless

Section C: Calculations for Design and/or Permitted Capacities

Variable	Description	Definition
$Q_{d, avg}$	Design Capacity, Average	= full pipe flow conditions / peaking factor
$Q_{d, peak}$	Design Capacity, Peak	full pipe flow conditions

Design Capacity, Average		
Variable	Value	Unit
$Q_{d, avg}$	9,147,924	gpd

Design Capacity, Peak		
Variable	Value	Unit
D	2.000	ft
r	1.000	ft
A	3.142	ft^2
P	6.283	ft
R	0.500	ft
$Q_{d, peak}$	50	cfs
$Q_{d, peak}$	32,017,733	gpd

Section D: Calculations for Present Flows

Variable	Description	Definition
$Q_{ex, avg}$	Present Flows, Average	determined via flow monitoring data
$Q_{ex, peak}$	Present Flows, Peak	determined via flow monitoring data

Present Flows, Average		
Variable	Value	Unit
$Q_{ex, avg}$	133,000	gpd

Present Flows, Peak		
Variable	Value	Unit
$Q_{ex, peak}$	7,539,000	gpd

Section E: Calculations for Projected Flows in Five (5) Years

Variable	Description	Definition
$Q_{proj, avg}$	Projected Flows in Five (5) Years, Average	= $Q_{proj, peak}$ ÷ P.F.
$Q_{proj, peak}$	Projected Flows in Five (5) Years, Peak	= ($Q_{ex, peak}$ + Q_p) x 1.05

Projected Flow Calculations		
Variable	Value	Unit
$Q_{proj, avg}$	2,266,658	gpd
$Q_{proj, peak}$	7,933,301	gpd

Section F: Compare Results with Applicant's Submission

Variable	PWSA, gpd	Applicant, gpd	Difference, gpd	Difference, %
$Q_{d, avg}$	9,147,924	9,120,456	27,468	0%
$Q_{d, peak}$	32,017,733	31,921,597	96,136	0%
$Q_{ex, avg}$	133,000	133,000	0	0%
$Q_{ex, peak}$	7,539,000	7,539,000	0	0%
$Q_{proj, avg}$	2,266,658	2,266,658	-1	0%
$Q_{proj, peak}$	7,933,301	7,933,301	0	0%

University of Pittsburgh Chiller Plant		
Sewage Capacity Calculations		
Pipe Diameter (per CCTV report) =	24	in
Upstream Invert Elevation (by record) =	1076.89	
Downstream Invert Elevation (by survey) =	1061.97	
Pipe Length (per survey) =	235	ft
Slope =	6.35	%
Mannings n =	0.015	(VCP)
Design Capacity		
Sewer Type (Combined/Separate)	Combined	
Peaking Factor	3.5	
Peak Hydraulic Capacity (Using Mannings Equation full-flow)	49.39	cfs
	31,921,597	GPD
Average Hydraulic Capacity (Peak Capacity divided by Peaking Factor)	9,120,456	GPD
Present Flows - MH027J004		
Present Average Flows (Flow data, refer to "Data Analysis" spreadsheet)	0.133	MGD
	133,000	GPD
Present Peak Flows (Flow data, refer to "Data Analysis" spreadsheet)	7.539	MGD
	7,539,000	GPD
Project Flow		
Project Flow	16,525	GPD
Projected Flows		
Projected Peak [(Present Peak Flow + Project Flow) x 1.05]	7,933,301	*GPD
Projected Average (Projected Peak Flow divided by Peaking Factor)	2,266,658	*GPD

*Projected Flows are less than the Design Capacity

	Input
	Output

ATTACHMENT 1 - CCTV SUMMARY

ITpipes
4921 Alexander Blvd
Albuquerque, NM
505-341-0109

Project Summary

Project Name:	CHAMPIONS DRIVE CCTV 6-22-20 TV09

US MH	DS MH	Pipe ID	Date	Street	Material	Size	Total	Insp
JCT027N003	MH010S022	JCT027N003/MH010S022	6/22/2020	ROBINSON ST	Vitrified Clay Pipe	15	179.9	179.9
JCT027N004	MH027N002	JCT027N004/MH027N002	6/22/2020	ROBINSON ST	Vitrified Clay Pipe	15	97.4	97.4
JCT027N005	JCT027N004	JCT027N005/JCT027N004	6/22/2020	ROBINSON ST	Vitrified Clay Pipe	15	48.5	48.5
MH027J001	MH027J002	MH027J001/MH027J002	6/22/2020	ROBINSON ST	Vitrified Clay Pipe	15	12.9	12.9
MH027N003	JCT027N005	MH027N003/JCT027N005	6/22/2020	ROBINSON ST	Vitrified Clay Pipe	15	49.5	49.5
MH027N003	MH027N004	MH027N003/MH027N004	6/22/2020	ROBINSON ST	Vitrified Clay Pipe	15	29.1	29.1
MH027N004	MH027J001	MH027N004/MH027J001	6/22/2020	ROBINSON ST	Vitrified Clay Pipe	15	49	49

Pipe Size: 15 **Total Ln.:** 466.3 **Inspected Ln.:** 466.3

US MH	DS MH	Pipe ID	Date	Street	Material	Size	Total	Insp
MH027J005	MH027J003	MH027J005/MH027J003	6/23/2020	ROBINSON ST	Vitrified Clay Pipe	20	54	54

Pipe Size: 20 **Total Ln.:** 54 **Inspected Ln.:** 54

US MH	DS MH	Pipe ID	Date	Street	Material	Size	Total	Insp
MH027E002	MH027E006	MH027E002/MH027E006	6/23/2020	ROBINSON ST	Vitrified Clay Pipe	24	6.2	6.2
MH027E006	UNKNOWN DSMH	MH027E006/UNKNOWN DSMH	6/23/2020	ROBINSON ST	Vitrified Clay Pipe	24	14.3	14.3
MH027J002	MH027J004	MH027J002/MH027J004	6/23/2020	ROBINSON ST	Vitrified Clay Pipe	24	11.7	11.7
MH027J004	MH027E001	MH027J004/MH027E001	6/23/2020	ROBINSON ST	Vitrified Clay Pipe	24	179.9	344.5

Pipe Size: 24 **Total Ln.:** 212.1 **Inspected Ln.:** 376.7

Project Total Ln.: 732.4 **Project Inspected Ln.:** 897.0

ATTACHMENT 2 - SEWER INVERT ELEVATIONS

CHAMPIONS DRIVE
(VARIABLE WIDTH)

R=655.00'
A=458.58'
Δ=40°06'50"

RIGHT OF WAY LINE

MH027J004

MH027J002

METAL GUIDE RAIL
CHAIN LINK FENCE
CONCRETE PAVING
LS (PDPW) #SL01059
6" CONC. CURB (TYP.)
CONCRETE WALK
15" CPP
CONCRETE GUTTER
BITUMINOUS PAVEMENT
ABANDONED 10"HP GAS (EGCO)
INLET TOP 1071.18 SILTED
MH. TOP 1071.97 FL 1061.97
22" TREE
INLET TOP 1091.51 FL 1086.89
12"PVC
8"PVC
METAL PLATE
15"CMP
1 STORY BRICK BUILDING
TRENCH DRAIN
GOAL POST
LS (PDPW) #SL15355
ELEC. VAULT 1076.33
INLET TOP 1071.45 FL 1066.95 w/ STENCH PLATE
18" CMP
15" CMP
CO
GP
GATE
15" TREE
8"CMP
ST MH. TOP 1092.10 FL (A)1084.40 FL (B)1085.10 FL (C)1084.50 FL (D)1086.90 FL (E)1085.10 FL (F)1087.85
INLET TOP 1091.43 FL 1084.09
CHAIN LINK FENCE
GUIDE RAIL
10 STALLS
17" TREE
24" VCP
20" TREE
HEDGE ROW
LS (PDPW) #SL04243
CONCRETE
8" CONC. CURB
6" TREE
CONCRETE PAVING
SIGN "PERMIT PARKING"
HC
8"TREE
7"LOCUST
GRASS
MH. (BY RECORD) TOP 1090.59 FL 1076.89
SIGN "LEASE PARK"
SIGN "EVENT PARK"
MH. IN CONC. VAULT (WATER METER) 1093.29
INLET TOP 1091.92 (FILLED)
SIGN "NO PARK"
ATHLETIC FIELD (ASTRO-TURF)
4" WATER LINE
15" PRIVATE SEWER

ATTACHMENT 3 - CAPACITY CALCULATIONS

Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. Wednesday, Aug 12 2020

Sewer Design Capacity - MH027J002 / MH027J004

Circular

Diameter (ft)	= 2.00
Invert Elev (ft)	= 1076.89
Slope (%)	= 6.35
N-Value	= 0.015

Calculations

Compute by:	Known Depth
Known Depth (ft)	= 2.00 ← FULL FLOW

Highlighted

Depth (ft)	= 2.00
Q (cfs)	= 49.39
Area (sqft)	= 3.14
Velocity (ft/s)	= 15.72
Wetted Perim (ft)	= 6.28
Crit Depth, Yc (ft)	= 1.98
Top Width (ft)	= 0.00
EGL (ft)	= 5.84

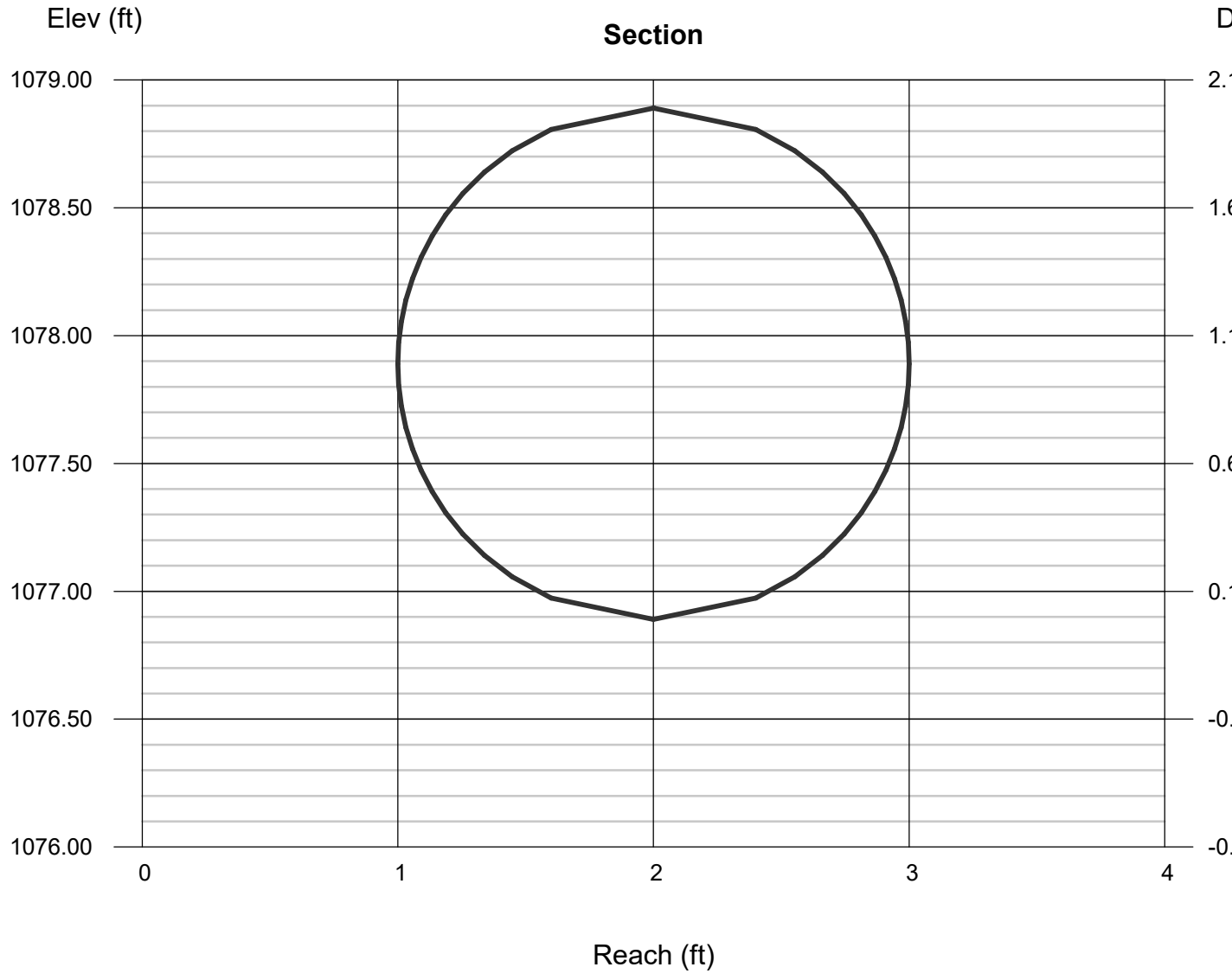


EXHIBIT J.

Alternatives Analysis

Alternatives Analysis

University of Pittsburgh – Chiller Plant
530-570 Champions Drive, 5th Ward, City of Pittsburgh

The proposed short-term and long-term ultimate method of sanitary sewage conveyance and treatment of the total 16,525 GPD or 41.3 EDU peak flow from the proposed Chiller Plant will involve the use of adequately design storm and sanitary sewer laterals, owned and maintained by the property owner, connecting into the PWSA owned 24" VCP combination sewer system located in Champions Drive. This public sewer connects into ALCOSAN's Monongahela River Interceptor (M-19) and sewage flows via gravity to the ALCOSAN Treatment Plant at Woods Run.

The project site is surrounded by institutional buildings and athletic fields/facilities owned by the University of Pittsburgh and residential properties. All adjacent properties utilize the existing public sewer system as their ultimate sewage disposal conveyance system and the ALCOSAN Treatment Plant as their ultimate sewage treatment method.

There are no feasible sewage facilities alternatives because access to the public sewer system is available and the proposed building and turf field occupy the majority of the property. If public sewers were not available, sewage could be temporarily stored using on-site holding tanks and trucked to an off-site facility or designated location; however, the alternative options would not be permitted since there are available public sewers, and the alternative on-lot treatment options pose a potential health risk to the surrounding area.

EXHIBIT K.

Sewage Facilities Planning Module – Component 4A – Municipal Planning Agency Review

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

DEP Code #:

SEWAGE FACILITIES PLANNING MODULE
COMPONENT 4A - MUNICIPAL PLANNING AGENCY REVIEW

Note to Project Sponsor: To expedite the review of your proposal, one copy of your completed planning module package and one copy of this *Planning Agency Review Component* should be sent to the local municipal planning agency for their comments.

SECTION A. PROJECT NAME (See Section A of instructions)

Project Name
University of Pittsburgh Chiller Plant

SECTION B. REVIEW SCHEDULE (See Section B of instructions)

1. Date plan received by municipal planning agency September 23, 2020
2. Date review completed by agency September 23, 2020

SECTION C. AGENCY REVIEW (See Section C of instructions)

Yes	No		
☐	☒	1.	Is there a municipal comprehensive plan adopted under the Municipalities Planning Code (53 P.S. 10101, *et seq*.)?
☐ N/A	☐	2.	Is this proposal consistent with the comprehensive plan for land use? If no, describe the inconsistencies
☒	☐	3.	Is this proposal consistent with the use, development, and protection of water resources? If no, describe the inconsistencies
☒	☐	4.	Is this proposal consistent with municipal land use planning relative to Prime Agricultural Land Preservation?
☐	☒	5.	Does this project propose encroachments, obstructions, or dams that will affect wetlands? If yes, describe impacts
☐	☒	6.	Will any known historical or archaeological resources be impacted by this project? If yes, describe impacts
☐	☒	7.	Will any known endangered or threatened species of plant or animal be impacted by this project? If yes, describe impacts
☒	☐	8.	Is there a municipal zoning ordinance?
☒	☐	9.	Is this proposal consistent with the ordinance? If no, describe the inconsistencies
☐	☒	10.	Does the proposal require a change or variance to an existing comprehensive plan or zoning ordinance?
☒	☐	11.	Have all applicable zoning approvals been obtained?
☒	☐	12.	Is there a municipal subdivision and land development ordinance?

SECTION C. AGENCY REVIEW (continued)

Yes	No		
☒	☐	13.	Is this proposal consistent with the ordinance? If no, describe the inconsistencies _____
☒	☐	14.	Is this plan consistent with the municipal Official Sewage Facilities Plan? If no, describe the inconsistencies _____
☐	☒	15.	Are there any wastewater disposal needs in the area adjacent to this proposal that should be considered by the municipality? If yes, describe _____
☐	☒	16.	Has a waiver of the sewage facilities planning requirements been requested for the residual tract of this subdivision?
☐	☐		If yes, is the proposed waiver consistent with applicable ordinances? If no, describe the inconsistencies

17. Name, title and signature of planning agency staff member completing this section:

Name: Martina Battistone

Title: Senior Environmental Planner

Signature: Martina Wolf Battistone

Date: September 23, 2020

Name of Municipal Planning Agency: City of Pittsburgh Department of City Planning

Address 200 Ross Street 4th Floor Pittsburgh, PA 15219

Telephone Number: (412) 255-2516

SECTION D. ADDITIONAL COMMENTS (See Section D of instructions)

This component does not limit municipal planning agencies from making additional comments concerning the relevancy of the proposed plan to other plans or ordinances. If additional comments are needed, attach additional sheets.

The planning agency must complete this component within 60 days.

This component and any additional comments are to be returned to the applicant.

EXHIBIT L.

Sewage Facilities Planning Module – Component 4C County of Joint Health Department Review

3850-FM-BCW0362C 6/2016

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

DEP Code #:

SEWAGE FACILITIES PLANNING MODULE
COMPONENT 4C - COUNTY OR JOINT HEALTH DEPARTMENT REVIEW

Note to Project Sponsor: To expedite the review of your proposal, one copy of your completed planning module package and one copy of this *Planning Agency Review Component* should be sent to the county or joint county health department for their comments.

SECTION A. PROJECT NAME (See Section A of instructions)

Project Name

University of Pittsburgh Chiller Plant

SECTION B. REVIEW SCHEDULE (See Section B of instructions)

1. Date plan received by county or joint county health department September 23, 2020

   Agency name Allegheny County Health Department (ACHD)

2. Date review completed by agency September 24, 2020

SECTION C. AGENCY REVIEW (See Section C of instructions)

Yes	No		
☒	☐	1.	Is the proposed plan consistent with the municipality's Official Sewage Facilities Plan?
			If no, what are the inconsistencies?
☐	☒	2.	Are there any wastewater disposal needs in the area adjacent to this proposal that should be considered by the municipality?
			If yes, describe
☐	☒	3.	Is there any known groundwater degradation in the area of this proposal?
			If yes, describe
☒	☐	4.	The county or joint county health department recommendation concerning this proposed plan is as follows: ACHD recommends approval. See attached letter.
		5.	Name, title and signature of person completing this section:

Name: Freddie Fields

Title: Environmental Health Engineer III

Signature: Freddie Fields

Date: September 24, 2020

Name of County Health Department: ACHD

Address: 3901 Penn Avenue, Building #5, Pittsburgh, PA 15224-1318

Telephone Number: 412-578-8046

SECTION D. ADDITIONAL COMMENTS (See Section D of instructions)

This component does not limit county planning agencies from making additional comments concerning the relevancy of the proposed plan to other plans or ordinances. If additional comments are needed, attach additional sheets.

The county planning agency must complete this component within 60 days.
This component and any additional comments are to be returned to the applicant.

COUNTY OF ALLEGHENY

RICH FITZGERALD
COUNTY EXECUTIVE

September 24, 2020

Kelley R. Harrington, E.I.T.
The Gateway Engineers, Inc.
100 McMorris Road
Pittsburgh, PA 15205

RE: SEWAGE FACILITIES PLANNING MODULE; ALLEGHENY COUNTY
University of Pittsburgh Chiller Plant, City of Pittsburgh

Dear Ms. Harrington:

Enclosed is a signed copy of Component 4C, County or Joint County Health Department Review, for the above-referenced development. This Planning Module Component was received on September 23, 2020. The project proposes the following:

Project Description:	University of Pittsburgh Chiller Plant. Proposing to remove two existing athletic fields, redevelop lot 202 of Block 27-J and construct a 15,000-ton chiller plant and a turf athletic field located at 530-570 Champions Drive in the City of Pittsburgh, Allegheny County.
Sewage Flow:	16,525 GPD
Conveyance:	The flow from this site will be conveyed to the Pittsburgh Water and Sewer Authority (PWSA) collection system to ALCOSAN POC M-19 to the Monongahela interceptor and then to the ALCOSAN Treatment Plant at Woods Run.
Sewer's Owner:	PWSA (collection) and ALCOSAN (interceptor)
Name of Sewage Treatment Plant:	ALCOSAN

Please be advised that a permit must be obtained from the Allegheny County Health Department's (ACHD) Plumbing Section prior to commencing any plumbing work for the proposed project. Plumbing work for which an ACHD Plumbing Permit must be obtained includes any plumbing work done on the site and any sewers, which will not be owned and operated by a municipality or a sewer authority.

In addition, it should be noted that the approval of this sewage facilities planning module does not include approval of pipe size and/or type. Approval for pipe size and/or type must be obtained by filing a specific plumbing plan with the ACHD's Plumbing Section. If you should have any questions relative to ACHD's plumbing requirements, you can contact Ivo Miller, Plumbing Program Manager at 412-578-8393.

The ACHD has no objection to the approval of this project. If you have any questions, please call me at 412-578-8046.

Sincerely,

Freddie Fields

Freddie Fields, M.B.A.
Environmental Health Engineer III
Water Pollution Control & Solid Waste Management

FF/cb
Enclosure

cc: Thomas Flanagan, PA Department of Environmental Protection w/attachment (electronically)
Ivo Miller, ACHD w/attachment (electronically)

EXHIBIT M.

Plot Plan

REVISIONS			
No	By	Date	Description
A	RRR	10/4/19	SCHEMATIC DESIGN
B	RRR	3/13/20	DESIGN DEVELOPMENT
C	RRR	6/12/20	50% CONSTRUCTION DOCUMENTS
D	RRR	7/24/20	ADDED SCREENING STRUCTURES AND UPDATED CW LINE LAYOUTS
E	RRR	7/31/20	UPDATED SCREENING STRUCTURES AND UPDATED CW LINE LAYOUTS

PROPOSED SANITARY TAP-IN REFER TO APPROVED PWSA PLANS FOR DETAILS

PROPOSED 8" SANITARY CONNECTION. REFER TO PLUMBING PLANS FOR CONTINUATION. LOCATION OF TRAPS, AND FRESH AIR VENTS

PROPOSED UNDERGROUND STORMWATER RATE CONTROL REFER TO C700-703 FOR DETAILS

V-101 PART OF ALTERNATIVE #1

PROPOSED GAS SERVICE LINE

PROPOSED GAS LINE CURB BOX

PROPOSED GAS LINE METER

PROPOSED 6" DOMESTIC WATER LINE CONNECTION. REFER TO PLUMBING PLAN FOR CONTIUATION

PROPOSED 8" FIRE LINE CONNECTION. REFER TO PLUMBING PLAN FOR CONTINUATION

CISTERN A
PLANS BY OTHERS

ALL ROOF DRAINS FOR PROPOSED CHILLER PLANT TO TIE IN TO CISTERN A

GREY WATER FORCEMAIN PART OF ALTERNATIVE #1

ALTERNATIVE #1

PROPOSED PNGC MAINLINE EXTENSION

V-100 PART OF ALTERNATIVE #1

CISTERN B
PLANS BY OTHERS

GRIT & SCREENING STRUCTURE. REFER TO SHEET C604 FOR INFORMATION

PROPOSED MANHOLE FOR DLCO 23kV FEEDERS REFER TO ELECTRICAL PLANS FOR INFORMATION

INSTALL 15"x15"x15" WYE

PROPOSED 5kV DUCTBANK REFER TO ELECTRICAL PLANS FOR INFORMATION

12" GRAVITY GREY WATER LINE. REFER TO PROFILES ON SHEET C502 FOR INFORMATION

OIL & WATER SEPARATOR. REFER TO SHEET C604 FOR INFORMATION AND ACCESS

V-99 PART OF ALTERNATIVE #1

PROPOSED 16" WATERLINE TAP REFER TO APPROVED PWSA PLANS FOR DETAILS

PROPOSED 20'X8' PWSA METER VAULT REFER TO APPROVED PWSA PLANS FOR DETAILS

PROPOSED ELECTRICAL 12'X12'X8' MH REFER TO ELECTRICAL PLANS FOR INFORMATION

18" GREY WATER LINE FROM TREES HALL. REFER TO SHEET C502 FOR INFORMATION. INSTALL CLEANOUTS AS REQUIRED BY ACHD

DISCONNECT STORM FROM COST CENTER AND CONNECT TO GREY WATER LINE

INLET TO BE RELOCATED

ALTERNATIVE #1

MH 3
TOP 1094.03
FL IN 1089.41 (15" SLCPP)
FL OUT 1089.30 (15" SLCPP)
FL OUT 1089.41 (15" SLCPP)

CLEANOUT 3
TOP 1093.16
FL OUT 1088.19 (15" SLCPP)

156.51 LF OF 15" SLCPP @ 2.60%

64.86 LF OF 12" SLCPP @ 1.39%

INLET 10
TOP 1092.38
FL IN 1088.41 (12" SLCPP)
FL OUT 1088.31 (12" SLCPP)

68.75 LF OF 12" SLCPP @ 1.79%

273.71 LF OF 15" SLCPP @ 4.00%

OS-1
TOP 1094.00
FL IN 1084.12 (15" SLCPP)
FL OUT 1084.02 (15" SLCPP)

4.68 LF OF 15" SLCPP @ 1.00%

20.06 LF OF 15" SLCPP @ 1.00%

MH 1
TOP 1088.06
FL IN 1083.82 (15" SLCPP)
FL OUT 1083.72 (15" SLCPP)

12" ROOF LEADER

ACCESS HATCHES

MH 4
TOP 1093.76
FL IN 1085.95 (12" SLCPP)
FL IN 1086.32 (12" SLCPP)
FL OUT 1089.55 (15" SLCPP)
FL OUT 1085.85 (15" SLCPP)

CLEANOUT 4
TOP 1093.40
FL IN 1086.27 (15" SLCPP)
FL OUT 1086.30 (15" SLCPP)

86.71 LF OF 12" SLCPP @ 1.08%

CLEANOUT 5
TOP 1091.54
FL OUT 1088.00 (6" SLCPP)

35.06 LF OF 6" SLCPP @ 1.63%

25.46 LF OF 15" SLCPP @ 3.07%

INLET 11
TOP 1092.75
FL OUT 1090.00 (6" SLCPP)

MH 5
TOP 1093.00
FL IN 1090.10 (15" SLCPP)
FL OUT 1090.00 (15" SLCPP)

31.04 LF OF 15" SLCPP @ 1.00%

INLET 12
TOP 1092.75
FL OUT 1090.41 (15" SLCPP)

59.23 LF OF 15" SLCPP @ 1.00%

RELOCATE WATERLINE AS NEEDED

OIL & WATER SEPARATOR. REFER TO SHEET C604 FOR INFORMATION AND ACCESS

INLET 9
TOP 1093.57
FL IN 1089.41 (12" SLCPP)
FL OUT 1089.31 (12" SLCPP)

58.88 LF OF 12" SLCPP @ 1.00%

INLET 8
TOP 1092.75
FL OUT 1090.00 (12" SLCPP)

*TEMPORARY
243.66 LF OF 15" SLCPP @ 1.19%

INLET 7
TOP 1091.75
FL IN 1087.02 (12" SLCPP)
FL OUT 1087.02 (12" SLCPP)

GRIT & SCREENING STRUCTURE. REFER TO SHEET C604 FOR INFORMATION AND ACCESS

34.68 LF OF 15" SLCPP @ 1.06%

15.91 LF OF 15" SLCPP @ 4.08%

8.13 LF OF 15" SLCPP @ 2.60%

10.98 LF OF 15" SLCPP @ 30.03%

157.32 LF OF 15" SLCPP @ 1.02%

INLET 5
TOP 1091.75
FL IN 1087.35 (12" SLCPP)
FL OUT 1087.25 (12" SLCPP)

REFER TO SHEET C801 FOR ATHLETIC FIELD DRAINAGE LAYOUT

TEST PIT PROPOSED FIELD GOAL POST LOCATION. LOCATE THE WATER LINE AND RE-LOCATE AS NECESSARY

93.27 LF OF 12" SLCPP @ 2.00%

26.39 LF OF 15" SLCPP @ 2.13%

INV. 1081.55

MH 2
TOP 1094.00
FL IN 1084.72 (15" SLCPP)
FL IN 1082.11 (15" SLCPP)
FL OUT 1082.11 (15" SLCPP)

CLEANOUT 2
TOP 1094.90
FL IN 1089.22 (12" SLCPP)
FL OUT 1089.22 (12" SLCPP)

73.68 LF OF 12" SLCPP @ 1.40%

99.24 LF OF 12" SLCPP @ 1.16%

INLET 3
TOP 1094.75
FL IN 1090.35 (12" SLCPP)
FL OUT 1090.25 (12" SLCPP)

12" GRAVITY GREY WATER LINE. REFER TO PROFILES ON SHEET C502 FOR INFORMATION

INLET 2
TOP 1093.19
FL OUT 1091.50 (12" SLCPP)

REFER TO C800 SERIES PLANS FOR TURF FIELD LIGHTING INFORMATION

REFER TO DISTRIBUTION PLANS FOR MORE INFORMATION

GREY WATER MH 2

GREY WATER MH 3

8 STORY BUILDING
PARKING GARAGE (FLOOR 1 -7)
"CHARLES COST SPORTS COMPLEX" (FLOOR 8)

1 STORY BRICK BUILDING

1-STORY GARAGE

CHAMPIONS DRIVE (MARABLE WIDTH)

WHITNEY TERRACE

MATCHLINE C301

ELECTRIC SERVICE (DUQUESNE LIGHT COMPANY):

REFER TO ELECTRICAL PLANS FOR MORE INFORMATION.

GAS SERVICE (PEOPLES NATURAL GAS):

GAS COMPANY WILL PROVIDE AND INSTALL THE GAS METERS AND INSTALL THE 12" MAIN LINE EXTENSION. THE SERVICE LATERALS SHALL BE INSTALLED BY THE CONTRACTOR FROM THE CURB BOX VALVE TO THE METERS. THE GAS METER MUST BE INSTALLED EXTERNAL TO THE BUILDING. THE GAS LINE SHALL BE INSTALLED IN A SEPARATE TRENCH FROM ALL UTILITIES AND A MINIMUM OF TWO FEET (2') FROM ALL OTHER UTILITIES. THE CONTRACTOR SHALL PERFORM ALL TRENCHING AND BACKFILLING FOR THE INSTALLATION OF THIS SERVICE.

STORM SEWER SERVICE (PITTSBURGH WATER AND SEWER AUTHORITY - PWSA):

PRIOR TO CONSTRUCTION AND PRIOR TO ORDERING MATERIALS, THE CONTRACTOR SHALL FIELD VERIFY THE DEPTH OF THE EXISTING PWSA STORM SEWER LINE AND ADJUST THE SLOPE AND INVERT OF THE STORM SEWER LATERALS, MAIN COLLECTOR LINE, AND STRUCTURES ACCORDINGLY. THE SLOPE OF THE LATERAL SHALL BE A MINIMUM OF 2%, UNLESS OTHERWISE NOTED. CONTRACTOR SHALL INSTALL AND CONSTRUCT THE LATERALS AND PRIVATE CONNECTOR LINES TO THE PROPOSED WYES AND MAKE THE CONNECTIONS TO THE MAINLINE. THE CONTRACTOR SHALL ALSO CONTACT THE ALLEGHENY COUNTY HEALTH DEPARTMENT AND PWSA FOR INSPECTION PRIOR TO CONNECTION AND BACKFILLING. CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF CONNECTOR LINES AND SERVICE LATERALS FROM EXISTING MAINLINE TO WITHIN 5' OF THE BUILDING. THE STORM SEWER LATERALS AND SERVICE LINES SHALL BE INSTALLED WITH A MINIMUM OF ONE FOOT (1') HORIZONTAL AND VERTICAL SEPARATION FROM ALL OTHER UTILITIES.

SANITARY SEWER SERVICE (PWSA):

PRIOR TO CONSTRUCTION AND PRIOR TO ORDERING MATERIALS, THE CONTRACTOR SHALL FIELD VERIFY THE DEPTH OF THE EXISTING SANITARY SEWER MAIN LINE AND ADJUST THE SLOPE AND INVERT OF THE SANITARY SEWER LATERAL AND CLEANOUTS ACCORDINGLY. THE SLOPE OF THE LATERAL SHALL BE A MINIMUM OF 2%, UNLESS OTHERWISE NOTED. CONTRACTOR SHALL INSTALL AND CONSTRUCT THE LATERALS AND PRIVATE CONNECTOR LINES TO THE PROPOSED WYES AND MAKE THE CONNECTIONS TO THE MAINLINE. THE CONTRACTOR SHALL ALSO CONTACT AUTHORITY FOR INSPECTION PRIOR TO CONNECTION AND BACKFILLING. CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF CONNECTOR LINES AND SERVICE LATERALS FROM EXISTING MAINLINE TO WITHIN 5' OF THE BUILDING. THE SANITARY SEWER LATERALS AND SERVICE LINES SHALL BE INSTALLED WITH A MINIMUM OF ONE FOOT (1') HORIZONTAL AND VERTICAL SEPARATION FROM ALL OTHER UTILITIES.

WATER SERVICE (PWSA):

CONTRACTOR SHALL COORDINATE WITH PWSA ON THE INSTALLATION AND CONSTRUCTION OF THE TWO (2) FIRE/DOMESTIC SPLITS WATER TAPS (6" DOMESTIC AND 8" FIRE). PWSA WILL TAP THE MAIN, INSTALL VALVE AT THE PROPERTY LINE, AND PROVIDE THE METER. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF METER, VAULT/ CROCK, ALL VALVING, AND SERVICE LATERALS TO THE BUILDING AS WELL AS THE FIRE HYDRANT. THE CONTRACTOR SHALL COORDINATE WITH PWSA FOR INSPECTION PRIOR TO CONNECTION TO THE MAINLINE AND BACKFILLING. THERE SHALL BE A MINIMUM OF THREE FOOT HORIZONTAL SEPARATION BETWEEN THE WATERLINE AND ALL OTHER UTILITIES. CONTRACTOR TO PROVIDE SADDLE TAP, BUT PWSA WILL MAKE THE ACTUAL TAP.

UTILITY PLAN NOTES:

1. THE CONTRACTOR SHALL COMPLY AT ALL TIMES WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, PROVISIONS, AND POLICIES GOVERNING SAFETY AND HEALTH, INCLUDING THE FEDERAL CONSTRUCTION SAFETY ACT (PUBLIC, LAW 91-54), FEDERAL REGISTER, CHAPTER XVII, PART 1926 OF TITLE 29 REGULATIONS, OCCUPATIONAL SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION, AND SUBSEQUENT PUBLICATIONS UPDATING THESE REGULATIONS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EXAMINING THE AREAS AND CONDITIONS UNDER WHICH THE PROJECT IS TO BE CONSTRUCTED PRIOR TO THE SUBMISSION OF A BID. SUBMISSION OF A BID SHALL BE CONSTRUED TO MEAN THE CONTRACTOR HAS REVIEWED THE SITE AND IS FAMILIAR WITH CONDITIONS AND CONSTRAINTS OF THE SITE.
3. BEFORE EXCAVATION, ALL UNDERGROUND UTILITIES SHALL BE LOCATED IN THE FIELD BY THE PROPER AUTHORITIES. THE CONTRACTOR SHALL CONTACT PENNSYLVANIA ONE CALL SYSTEMS, INC. AT 8-1-1. THE LOCATION OF UTILITIES AND UNDERGROUND STRUCTURES ARE APPROXIMATE AND MAY NOT ALL BE SHOWN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXISTENCE AND EXACT LOCATION OF ALL UTILITIES AND UNDERGROUND STRUCTURES.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BID AND PERFORM ALL UTILITY WORK IN COMPLIANCE TO APPLICABLE LOCAL AND STATE CODES AND REGULATIONS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FEES ASSOCIATED WITH THE INSTALLATION, INSPECTING, TESTING AND FINAL ACCEPTANCE OF PROPOSED UTILITIES CONSTRUCTION.
6. UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE SPECIFICATIONS OF THE RESPECTIVE UTILITY COMPANY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE UTILITIES ARE INSTALLED CORRECTLY TO MEET PROJECT REQUIREMENTS WHETHER PERFORMED BY THE CONTRACTOR OR NOT.
7. ALL CABLE, ELECTRIC, GAS, STORM AND SANITARY SEWER, TELEPHONE AND WATER SERVICE LINE TRENCHES LOCATED UNDER PROPOSED PAVEMENT AREAS SHALL BE BACKFILLED WITH 100% STONE MATERIAL TO THE PROPOSED PAVING SECTION IN ACCORDANCE WITH THE DETAIL SHOWN ON THE CONSTRUCTION DETAIL SHEETS.
8. THERE SHALL BE NO CONSTRUCTION OF ELECTRIC TRANSFORMERS, TELEPHONE OR CABLE JUNCTION BOXES, GAS METERS OR SIMILAR DEVICES PLACED OVER ANY OTHER UNDERGROUND UTILITY.
9. CONTRACTOR TO PROVIDE SHOP DRAWINGS ON ALL STORM SEWER MANHOLES AND INLETS.
10. AN AS-BUILT DRAWING OF NEW UTILITY SERVICES SHALL BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO THE OWNER UPON COMPLETION OF THE PROJECT.
11. ALL STORM PIPE SHALL BE HDPE, SMOOTH INTERIOR, CORRUGATED POLYETHYLENE PIPE UNLESS OTHERWISE NOTED. ALL STORM SEWER CONSTRUCTION MATERIALS AND METHODS SHALL BE IN ACCORDANCE WITH PENNDOT SPECIFICATIONS, ALL JOINTS SHALL BE WATERTIGHT.
12. THE CONTRACTOR SHALL ASSURE THAT THERE IS POSITIVE DRAINAGE TO THE EXISTING INLETS UPON PLACEMENT OF NEW PAVEMENT.
13. CONTRACTOR TO COORDINATE WITH THE BUILDING PLUMBING AND SITE ELECTRICAL PLANS TO ASSURE ACCURACY OF THE UTILITY CONNECTIONS TO THE BUILDING.
14. CONDUIT LOCATIONS TO SITE LIGHT POLES TO BE COORDINATED WITH THE SITE ELECTRICAL PLAN.
15. THE ALLEGHENY COUNTY HEALTH DEPARTMENT SHALL BE CONTACTED FOR INSPECTION OF ALL PRIVATE SANITARY SEWERS, WATER LINES, AND STORM SEWER LINES WHERE THEY CONNECT TO A PUBLIC SEWER SYSTEM. ALL WATER AND SEWER LINES MUST BE INSTALLED BY A REGISTERED PLUMBER.
16. THE ROOF COLLECTOR SYSTEM SHALL BE TRAPPED PRIOR TO CONNECTING TO THE SITE STORM SEWER SYSTEM.
17. THE WATERLINE SHALL HAVE A MINIMUM OF 48" OF COVER AND BE AT LEAST 1 FOOT ABOVE THE SANITARY SEWER IF WITHIN 10 FEET OF THE HORIZONTAL DISTANCE OF THE SEWER.
18. CONTRACTOR TO PROVIDE GIS DATA OF ALL NEW PIPES (CHILLED, STEAM, CONDENSATE, GREY, STORM, SANITARY, CITY WATER, ELECTRIC), INCLUDING MANHOLES, STORM INLETS, GREY WATER STORAGE TANK EXTENTS, ETC. CONTRACTOR TO COORDINATE LAYERING AND NAMING WITH UNIVERSITY.

* TEMPORARY LINE TO BE INSTALLED FIRST TO AVOID DISRUPTING EXISTING STORMWATER DRAINAGE. ONCE CISTERNS ARE INSTALLED AND THE LINE FROM MH 5 TO THE CISTERN IS COMPLETE, THE TEMPORARY LINE CAN BE REMOVED. THIS WILL THEN ALLOW FOR CONSTRUCTION ON INLET 8 AND ITS PROPOSED PIPE AT THE PROPOSED ELEVATIONS WITHOUT INTERFERENCE.

UTILITY LEGEND

SAN	PROPOSED SANITARY LINE
FM	PROPOSED FORCE MAIN LINE
	PROPOSED STORM LINE
WL	PROPOSED WATER LINE
ELE	PROPOSED ELECTRIC LINE
GAS	PROPOSED GAS LINE
	PROPOSED LIGHT POLE
	PROPOSED CURB BOX
	PROPOSED GAS METER
	PROPOSED CLEANOUT
	PROPOSED 2'x2' INLET
	PROPOSED ELECTRICAL VAULT
	PROPOSED WATER VAULT
	PROPOSED STORMWATER TANK

UTILITY ABBREVIATIONS

STM	STORM
SAN	SANITARY
MH	MANHOLE
OS	OUTLET STRUCTURE
CO	CLEANOUT
RD	ROOF DRAIN
HW	HEADWALL
EW	ENDWALL

Know what's below. Call before you dig.
Serial No. 20190910003
20190910353
20190970297
20190970298
20190970370
20190970371
20190970372

GRAPHIC SCALE
0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

NORTH

KEY PLAN

BURNS McDONNELL
5511 CAPITAL CENTER DRIVE, STE. 450
RALEIGH, NC 27606
919-859-5951
LICENSEE NO. C-1435

date	detailed
06/12/20	RRR
designed	checked
RRR	SMD

University of Pittsburgh
Facilities Management

Professional Stamp

PRELIMINARY - NOT FOR CONSTRUCTION

Project Name	Job No.
UNIVERSITY OF PITTSBURGH UPPER CAMPUS CHILLED WATER PLANT	X6582
	Issue Date

Drawing Description
CHILLER PLANT UTILITY PLAN 1

CAD File Name	Drawn By
C-4187-0054 PR	RRR
Drawing Number 11041 C300	Set Order ____ of ____

ELECTRIC SERVICE (DUQUESNE LIGHT COMPANY):

REFER TO ELECTRICAL PLANS FOR MORE INFORMATION.

GAS SERVICE (PEOPLES NATURAL GAS):

GAS COMPANY WILL PROVIDE AND INSTALL THE GAS METERS AND INSTALL THE 12" MAIN LINE EXTENSION. THE SERVICE LATERALS SHALL BE INSTALLED BY THE CONTRACTOR FROM THE CURB BOX VALVE TO THE METERS. THE GAS METER MUST BE INSTALLED EXTERNAL TO THE BUILDING. THE GAS LINE SHALL BE INSTALLED IN A SEPARATE TRENCH FROM ALL UTILITIES AND A MINIMUM OF TWO FEET (2') FROM ALL OTHER UTILITIES. THE CONTRACTOR SHALL PERFORM ALL TRENCHING AND BACKFILLING FOR THE INSTALLATION OF THIS SERVICE.

STORM SEWER SERVICE (PITTSBURGH WATER AND SEWER AUTHORITY - PWSA):

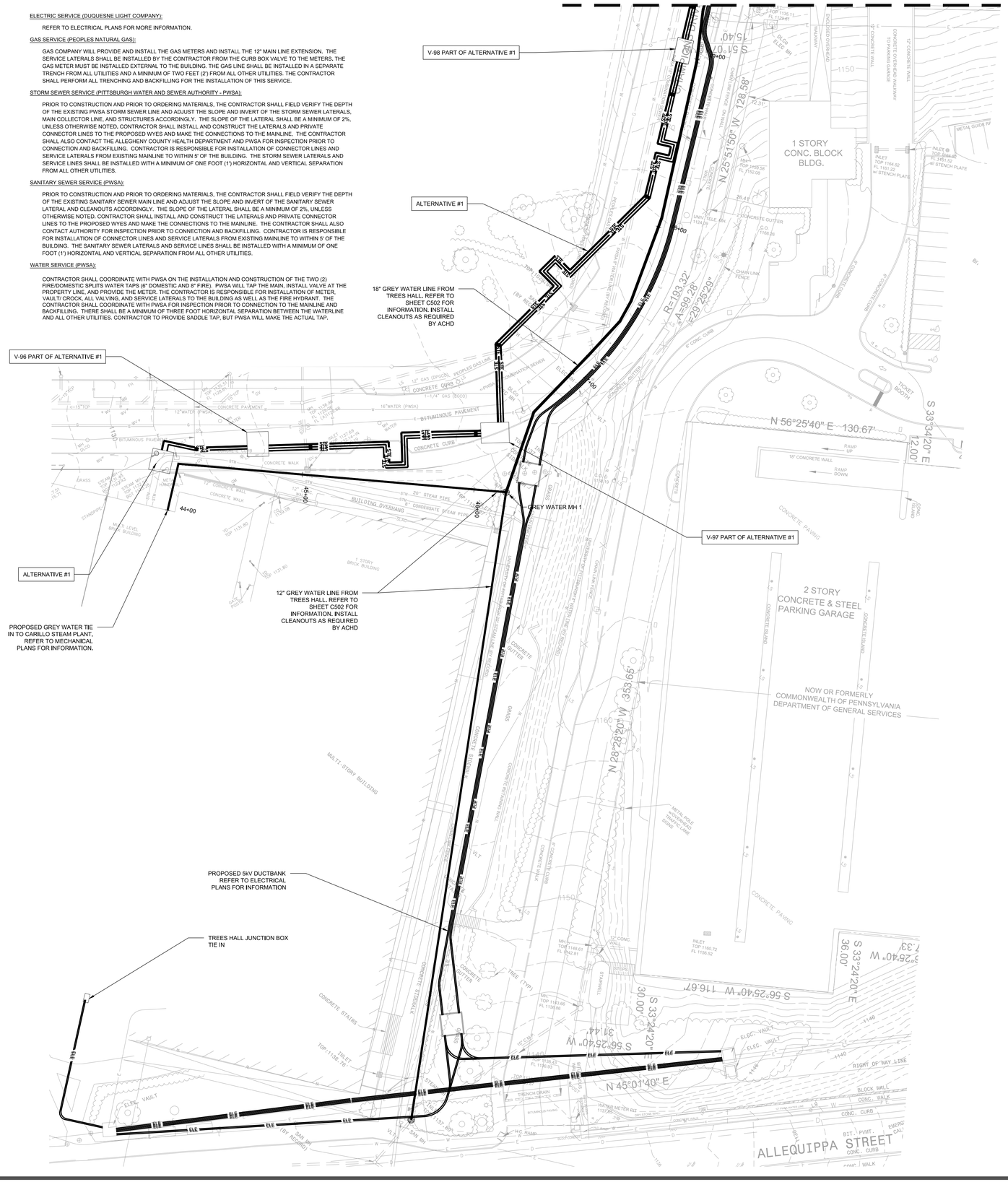
PRIOR TO CONSTRUCTION AND PRIOR TO ORDERING MATERIALS, THE CONTRACTOR SHALL FIELD VERIFY THE DEPTH OF THE EXISTING PWSA STORM SEWER LINE AND ADJUST THE SLOPE AND INVERT OF THE STORM SEWER LATERALS, MAIN COLLECTOR LINE, AND STRUCTURES ACCORDINGLY. THE SLOPE OF THE LATERAL SHALL BE A MINIMUM OF 2%, UNLESS OTHERWISE NOTED. CONTRACTOR SHALL INSTALL AND CONSTRUCT THE LATERALS AND PRIVATE CONNECTOR LINES TO THE PROPOSED WYES AND MAKE THE CONNECTIONS TO THE MAINLINE. THE CONTRACTOR SHALL ALSO CONTACT THE ALLEGHENY COUNTY HEALTH DEPARTMENT AND PWSA FOR INSPECTION PRIOR TO CONNECTION AND BACKFILLING. CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF CONNECTOR LINES AND SERVICE LATERALS FROM EXISTING MAINLINE TO WITHIN 5' OF THE BUILDING. THE STORM SEWER LATERALS AND SERVICE LINES SHALL BE INSTALLED WITH A MINIMUM OF ONE FOOT (1') HORIZONTAL AND VERTICAL SEPARATION FROM ALL OTHER UTILITIES.

SANITARY SEWER SERVICE (PWSA):

PRIOR TO CONSTRUCTION AND PRIOR TO ORDERING MATERIALS, THE CONTRACTOR SHALL FIELD VERIFY THE DEPTH OF THE EXISTING SANITARY SEWER MAIN LINE AND ADJUST THE SLOPE AND INVERT OF THE SANITARY SEWER LATERAL AND CLEANOUTS ACCORDINGLY. THE SLOPE OF THE LATERAL SHALL BE A MINIMUM OF 2%, UNLESS OTHERWISE NOTED. CONTRACTOR SHALL INSTALL AND CONSTRUCT THE LATERALS AND PRIVATE CONNECTOR LINES TO THE PROPOSED WYES AND MAKE THE CONNECTIONS TO THE MAINLINE. THE CONTRACTOR SHALL ALSO CONTACT AUTHORITY FOR INSPECTION PRIOR TO CONNECTION AND BACKFILLING. CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF CONNECTOR LINES AND SERVICE LATERALS FROM EXISTING MAINLINE TO WITHIN 5' OF THE BUILDING. THE SANITARY SEWER LATERALS AND SERVICE LINES SHALL BE INSTALLED WITH A MINIMUM OF ONE FOOT (1') HORIZONTAL AND VERTICAL SEPARATION FROM ALL OTHER UTILITIES.

WATER SERVICE (PWSA):

CONTRACTOR SHALL COORDINATE WITH PWSA ON THE INSTALLATION AND CONSTRUCTION OF THE TWO (2) FIREDOMESTIC SPLITS WATER TAPS (6" DOMESTIC AND 8" FIRE). PWSA WILL TAP THE MAIN, INSTALL VALVE AT THE PROPERTY LINE, AND PROVIDE THE METER. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF METER, VAULT/ DECK, ALL VALVING, AND SERVICE LATERALS TO THE BUILDING AS WELL AS THE FIRE HYDRANT. THE CONTRACTOR SHALL COORDINATE WITH PWSA FOR INSPECTION PRIOR TO CONNECTION TO THE MAINLINE AND BACKFILLING. THERE SHALL BE A MINIMUM OF THREE FOOT HORIZONTAL SEPARATION BETWEEN THE WATERLINE AND ALL OTHER UTILITIES. CONTRACTOR TO PROVIDE SADDLE TAP, BUT PWSA WILL MAKE THE ACTUAL TAP.



UTILITY PLAN NOTES:

1. THE CONTRACTOR SHALL COMPLY AT ALL TIMES WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, PROVISIONS, AND POLICIES GOVERNING SAFETY AND HEALTH, INCLUDING THE FEDERAL CONSTRUCTION SAFETY ACT (PUBLIC, LAW 91-54), FEDERAL REGISTER, CHAPTER XVII, PART 1926 OF TITLE 29 REGULATIONS, OCCUPATIONAL SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION, AND SUBSEQUENT PUBLICATIONS UPDATING THESE REGULATIONS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EXAMINING THE AREAS AND CONDITIONS UNDER WHICH THE PROJECT IS TO BE CONSTRUCTED PRIOR TO THE SUBMISSION OF A BID. SUBMISSION OF A BID SHALL BE CONSTRUED TO MEAN THE CONTRACTOR HAS REVIEWED THE SITE AND IS FAMILIAR WITH CONDITIONS AND CONSTRAINTS OF THE SITE.
3. BEFORE EXCAVATION, ALL UNDERGROUND UTILITIES SHALL BE LOCATED IN THE FIELD BY THE PROPER AUTHORITIES. THE CONTRACTOR SHALL CONTACT PENNSYLVANIA ONE CALL SYSTEMS, INC. AT 8-1-1. THE LOCATION OF UTILITIES AND UNDERGROUND STRUCTURES ARE APPROXIMATE AND MAY NOT ALL BE SHOWN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXISTENCE AND EXACT LOCATION OF ALL UTILITIES AND UNDERGROUND STRUCTURES.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BID AND PERFORM ALL UTILITY WORK IN COMPLIANCE TO APPLICABLE LOCAL AND STATE CODES AND REGULATIONS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FEES ASSOCIATED WITH THE INSTALLATION, INSPECTING, TESTING AND FINAL ACCEPTANCE OF PROPOSED UTILITIES CONSTRUCTION.
6. UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE SPECIFICATIONS OF THE RESPECTIVE UTILITY COMPANY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE UTILITIES ARE INSTALLED CORRECTLY TO MEET PROJECT REQUIREMENTS WHETHER PERFORMED BY THE CONTRACTOR OR NOT.
7. ALL CABLE, ELECTRIC, GAS, STORM AND SANITARY SEWER, TELEPHONE AND WATER SERVICE LINE TRENCHES LOCATED UNDER PROPOSED PAVEMENT AREAS SHALL BE BACKFILLED WITH 100% STONE MATERIAL TO THE PROPOSED PAVING SECTION IN ACCORDANCE WITH THE DETAIL SHOWN ON THE CONSTRUCTION DETAIL SHEETS.
8. THERE SHALL BE NO CONSTRUCTION OF ELECTRIC TRANSFORMERS, TELEPHONE OR CABLE JUNCTION BOXES, GAS METERS OR SIMILAR DEVICES PLACED OVER ANY OTHER UNDERGROUND UTILITY.
9. CONTRACTOR TO PROVIDE SHOP DRAWINGS ON ALL STORM SEWER MANHOLES AND INLETS.
10. AN AS-BUILT DRAWING OF NEW UTILITY SERVICES SHALL BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO THE OWNER UPON COMPLETION OF THE PROJECT.
11. ALL STORM PIPE SHALL BE HDPE, SMOOTH INTERIOR, CORRUGATED POLYETHYLENE PIPE UNLESS OTHERWISE NOTED. ALL STORM SEWER CONSTRUCTION MATERIALS AND METHODS SHALL BE IN ACCORDANCE WITH PENNDOT SPECIFICATIONS, ALL JOINTS SHALL BE WATERTIGHT.
12. THE CONTRACTOR SHALL ASSURE THAT THERE IS POSITIVE DRAINAGE TO THE EXISTING INLETS UPON PLACEMENT OF NEW PAVEMENT.
13. CONTRACTOR TO COORDINATE WITH THE BUILDING PLUMBING AND SITE ELECTRICAL PLANS TO ASSURE ACCURACY OF THE UTILITY CONNECTIONS TO THE BUILDING.
14. CONDUIT LOCATIONS TO SITE LIGHT POLES TO BE COORDINATED WITH THE SITE ELECTRICAL PLAN.
15. THE ALLEGHENY COUNTY HEALTH DEPARTMENT SHALL BE CONTACTED FOR INSPECTION OF ALL PRIVATE SANITARY SEWERS, WATER LINES, AND STORM SEWER LINES WHERE THEY CONNECT TO A PUBLIC SEWER SYSTEM. ALL WATER AND SEWER LINES MUST BE INSTALLED BY A REGISTERED PLUMBER.
16. THE ROOF COLLECTOR SYSTEM SHALL BE TRAPPED PRIOR TO CONNECTING TO THE SITE STORM SEWER SYSTEM.
17. THE WATERLINE SHALL HAVE A MINIMUM OF 48" OF COVER AND BE AT LEAST 1 FOOT ABOVE THE SANITARY SEWER IF WITHIN 10 FEET OF THE HORIZONTAL DISTANCE OF THE SEWER.
18. CONTRACTOR TO PROVIDE GIS DATA OF ALL NEW PIPES (CHILLED, STEAM, CONDENSATE, GREY, STORM, SANITARY, CITY WATER, ELECTRIC), INCLUDING MANHOLES, STORM INLETS, GREY WATER STORAGE TANK EXTENTS, ETC. CONTRACTOR TO COORDINATE LAYERING AND NAMING WITH UNIVERSITY.

UTILITY LEGEND

SAN	PROPOSED SANITARY LINE
FM	PROPOSED FORCE MAIN LINE
	PROPOSED STORM LINE
WL	PROPOSED WATER LINE
ELE	PROPOSED ELECTRIC LINE
GAS	PROPOSED GAS LINE
	PROPOSED LIGHT POLE
	PROPOSED CURB BOX
	PROPOSED GAS METER
	PROPOSED CLEANOUT
	PROPOSED 2'x2' INLET
	PROPOSED ELECTRICAL VAULT
	PROPOSED WATER VAULT
	PROPOSED STORMWATER TANK

UTILITY ABBREVIATIONS

STM	STORM
SAN	SANITARY
MH	MANHOLE
OS	OUTLET STRUCTURE
CO	CLEANOUT
RD	ROOF DRAIN
HW	HEADWALL
EW	ENDWALL

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NORTH

GRAPHIC SCALE

0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

REVISIONS			
No	By	Date	Description
A	RRR	3/13/20	DESIGN DEVELOPMENT
B	RRR	6/12/20	50% CONSTRUCTION DOCUMENTS

BURNS McDONNELL
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LICENSEE NO. C-1435

date 06/12/20	detailed RRR
designed RRR	checked SMD

University of Pittsburgh
Facilities Management

Professional Stamp

PRELIMINARY - NOT FOR CONSTRUCTION

Project Name: UNIVERSITY OF PITTSBURGH UPPER CAMPUS CHILLED WATER PLANT	Job No. X6582
	Issue Date

Drawing Description:
CHILLER PLANT
UTILITY PLAN 2

CAD File Name: C-4187-0054 PR	Drawn By: RRR
Drawing Number: 11041 C301	Set Order: ____ of ____