

May 2, 2006

HAND DELIVERED

Mr. W. Calvin Horton, Town Manager
Town of Chapel Hill
405 Martin Luther King, Jr. Blvd.
Chapel Hill, NC 27514

**SUBJECT: REQUEST FOR EXPEDITED REVIEW OF SPECIAL USE PERMIT
MODIFICATION FOR THE MASON FARM WASTEWATER
TREATMENT PLANT RECLAIMED WATER SYSTEM**

Dear Cal,

The Orange Water and Sewer Authority (OWASA) requests an expedited review of the application for a modification to the Special Use Permit (SUP) for the Mason Farm Wastewater Treatment Plant (WWTP) to allow for the construction of pumping and storage facilities for reclaimed water.

As we informed the Chapel Hill Town Council on February 27, 2006, we are developing a new reclaimed water system that will reduce the community's drought risk, help conserve our high quality drinking water supply sources, and enable us to defer or eliminate the need for major and expensive capital improvements, such as expansion of our water plant and development of additional water sources such as Jordan Lake. The system will enable highly treated wastewater from OWASA's WWTP to be used for non-drinking water purposes.

The system will initially serve the chiller facilities on the main campus of the University of North Carolina at Chapel Hill (UNC); however, where practical, the system will be expanded to serve other reclaimed water uses and customers in the future. The reclaimed water system will include a new reclaimed water transmission line from the WWTP to UNC in addition to the proposed pump station, storage tank and related improvements at the WWTP.

We believe this project meets the Town Council's criteria for expedited review because it provides a significant public benefit and the project would be adversely affected by following the timeline of the normal SUP modification application procedures. Specifically, delay in the project will affect our ability to meet the community's water needs in drought conditions or other water shortages.

The reclaimed water system is essential for reducing our community's near-term and long-term vulnerability to droughts and other water supply emergencies, and it is one of our key strategies for meeting our community's long-term water needs in a more sustainable manner. Currently, drinking water use at UNC's chiller facilities accounts for about 6% of the overall water demand by the community, and that use is projected to increase to about 13% within the next 20 years. By substituting reclaimed water for drinking water, we can extend the ability of the Cane Creek Reservoir and University Lake to meet our drinking water needs.

Additionally, OWASA has received State and Federal grants totaling \$2.51 million to help with project design and construction costs. Our \$1.866 million grant from the North Carolina Clean Water Management Trust Fund expires in September 2007. We risk losing an important portion of this critical project funding if we are not able to begin construction of the reclaimed water system in the near future.

Our reclaimed water system contract with UNC sets November 1, 2008 as the date for start-up of the system. To be certain of achieving that date, and to ensure the financial feasibility of the project, construction would need to begin during the first quarter of 2007.

We expect to have our design plans completed in the Fall of 2006 and have already completed our Concept Plan Proposal, which is attached to this letter for your consideration for an expedited review process.

If you have any questions or need additional information, please feel free to call me at 537-4211 or Ms. Alexandra Jones P.E. at 537-4276 who is our project manager for the final design of the reclaimed water system.

Sincerely,



Ed Kerwin
Executive Director

Attachments

cc: Board of Directors

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TOWN OF CHAPEL HILL



Applicant Information

Name: Orange Water and Sewer Authority - Ed Kerwin, Executive Director
Address: 400 Jones Ferry Road
City: Carrboro State: NC Zip: 27510
Phone (Work): _____ FAX: _____ E-Mail: _____

Property Owner Information (included as attachment f more than one owner)

Name: N/A Phone: N/A
Address: N/A
city: N/A State: N/A zip: N/A

Development Information

Name of Development: Mason Farm Wastewater Treatment Plant
Tax Map: 7 Block: 66 Lot(s): 9A Parcel ID #: 9798213071
Address/Location: 100 Old Mason Farm Road
Existing Zoning: I New Zoning District if Rezoning Proposed N/A
Proposed Size of Development (Acres / Square Feet): 23.432 ac / 1,020,697.92 sf
Permitted / Proposed Floor Area (Square Feet): 80,680 sf / 85,985 sf
Minimum # Parking Spaces Required: 0 #Proposed 0
Proposed Number of Dwelling Units: 0 # Units per Acre 0
Existing / Proposed Impervious Surface Area (Square Feet): 368,300 sf / 380,805 sf
Is this Concept Plan subject to additional review by Town Council? Yes

The undersigned applicant hereby certifies that: a) the property owner authorizes the filing of this proposal b) authorizes on-site review by authorized staff; and c) to the best of his/her knowledge and belief, all information supplied with this proposal is true and accurate.

Signature: Ed Kerwin Date: 5/2/06

Please submit **20** sets of all materials, or 35 sets of all materials including reduced (8½" by 11") copies of all plans if the Concept Plan is subject to additional review by the Town Council, no later than the first day of the month. Materials must be collated and folded to fit into a 12" x 15" envelope.

The Community Design Commission meets regularly on the third Wednesday of each month. Meetings with the Town Council will be scheduled after the Community Design Commission meeting. For confirmation of meeting dates and the placement of your request on the agenda, please call the Planning Department at (919) 968-2728.

ORANGE WATER AND SEWER AUTHORITY
MASON FARM WASTEWATER TREATMENT PLANT

DEVELOPER'S PROGRAM

The proposed project consists of a reclaimed water (RCW) storage and pumping facility, and associated piping, at OWASA's Mason Farm Road Wastewater Treatment Plant (WWTP). Initially, the RCW system will supply cooling tower demands at chiller facilities on the UNC Campus; however, the facilities are being designed with flexibility to allow other approved water demands to be accommodated by the reclaimed water system in the future. The reclaimed water will be high quality effluent from the Mason Farm WWTP that has been adequately and reliably treated for the approved uses.

The project benefits the community by reducing the wastewater treatment plant effluent discharge into Morgan Creek, as well as reducing the demand for potable water at OWASA's water treatment plant. It is desirable that as additional reclaimed water demands are identified and determined to be feasible to supply with reclaimed water, the proposed storage and pumping facilities will be available for that beneficial use.

The initial phase of the project consists of a single rectangular concrete structure, extending above grade approximately 20 feet. A small masonry building matching the architectural details of the existing facilities will be located on top of the concrete structure. The building will house chemical feed, instrumentation and control equipment. The single structure will serve as the storage tank and pump station for the facility. Facility layouts included in the preliminary engineering document for the facility are arranged to facilitate expansion of this structure in the future should it be determined that the additional storage is necessary for the function of the reclaimed water system.

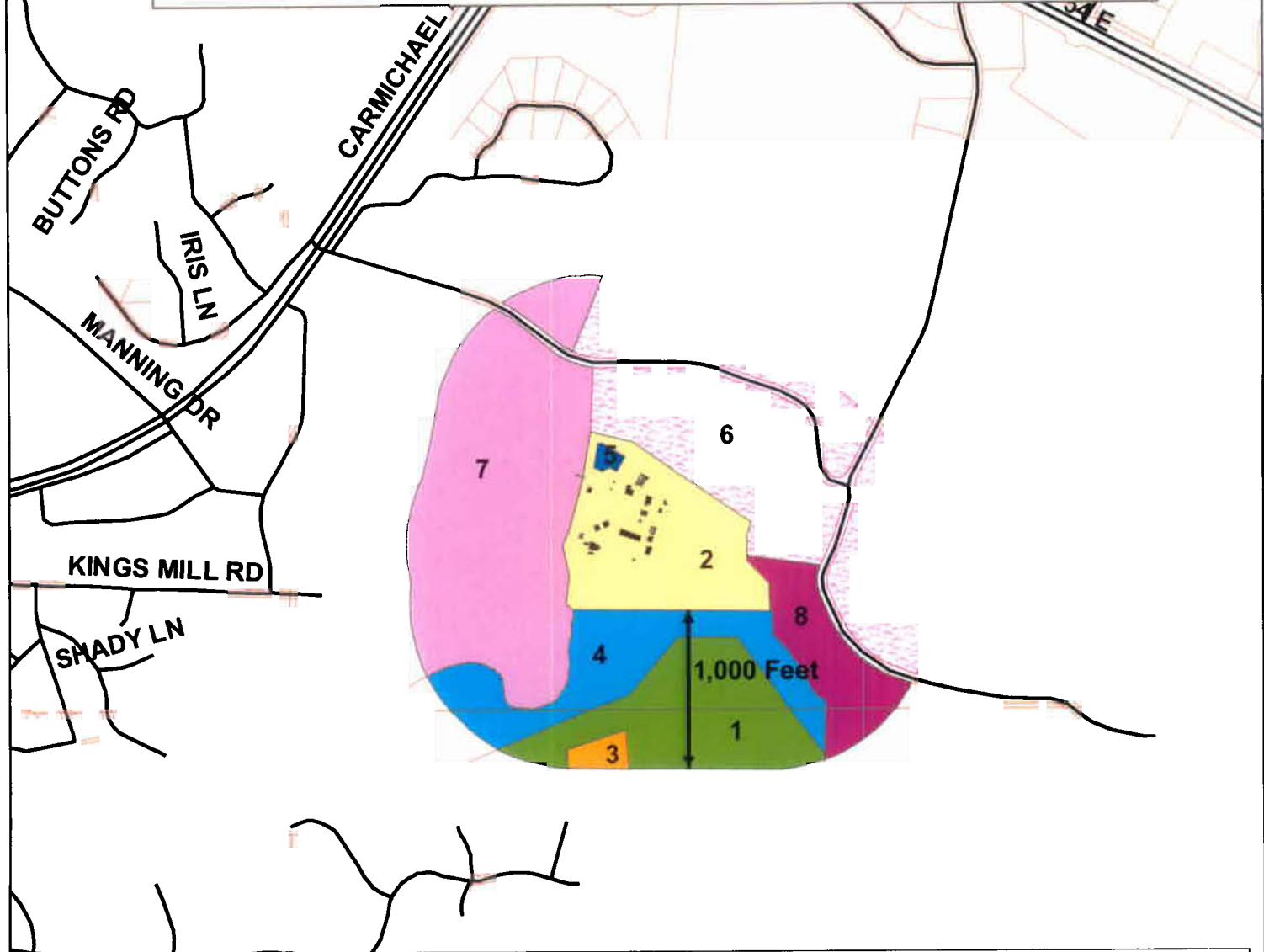
The majority of the land within the property of OWASA's Mason Farm WWTP site is developed and improved as part of previous and ongoing approved development at the site. Much of the area on the site contains process units and structures required for treatment of the wastewater collected within OWASA's service area. There is limited unimproved area on the site, most of which will remain as such after construction of the project.

Aerial Photo within 1,000 Feet of the OWASA Mason Farm WWTP Parcel



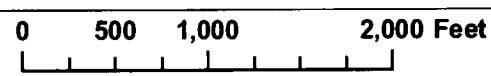
Note: Aerial from 11/2003
Does not reflect the structures currently being
constructed as part of the WWTP expansion.

Property Owners within 1,000 Feet of the OWASA Mason Farm WWTP Parcel



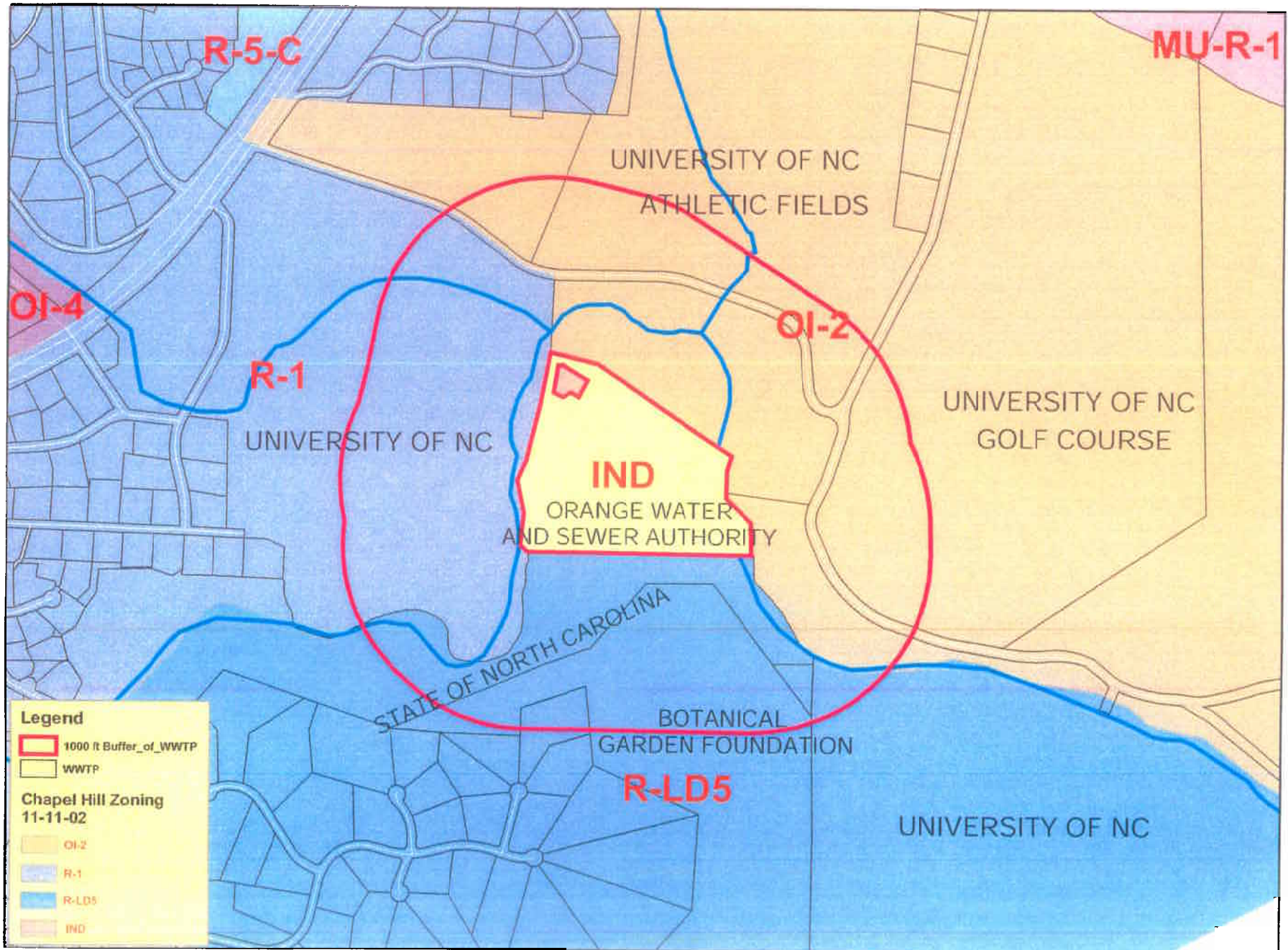
Legend

— Street	Owner, Address
■ Mason Farms WWTP Parcel	1 NC Botanical Garden, UNC CB 3375 Totten Center, Chapel Hill, NC 27599
	2 Orange Water and Sewer Authority, Jones Ferry Rd, Carrboro, NC 27510
	3 Edward D Paradise, 104 Silers Fern Court, Chapel Hill, NC 27517
	4 State of North Carolina, UNC CB 1060, 103 Giles Horney Bld, Chapel Hill, NC 27599
	5 UNC Wastewater Research Center, UNC CB 7431 104 Rosenau Hall, Chapel Hill, NC 27599
	6 Finely Golf Course, P.O. Box 2675, Chapel Hill, NC 27515
	7 UNC Property Office, UNC CB 1060 205 Wilson St, Chapel Hill, NC 27599
	8 UNC, 300 South Bldg 005A, Chapel Hill, NC 27514



Mason Farm - Wastewater Treatment Plant

1000 FOOT BUFFER FROM WWTP BOUNDARY



0 185 370 740 1,110 1,480 Feet

(13)

**ORANGE WATER AND SEWER AUTHORITY
MASON FARM ROAD WASTEWATER TREATMENT PLANT**

SITE ANALYSIS

Existing Conditions and Surroundings

The Mason Farm WWTP is located in a sparsely developed area of southeastern Chapel Hill, and is accessed from Old Mason Farm Road (SR 1900) north of the WWTP. To the west and south of the site is steep forested land owned by UNC and managed as a natural area by the UNC Botanical Garden. The flatter land to the north and east of the WWTP is in recreational use, including UNC's Finley Golf Course to the east and soccer and baseball fields to the north. The University also owns a small parcel of land within the WWTP property. This parcel contains UNC Wastewater Research Center. The only rights-of-way impacting the property are two overhead electrical utilities on the northern portion of the property. One is a Duke Power transmission main and the other is an electric service owned by the University, which supplies power to the golf course.

Based on the Orange County Soil Survey, the predominant soils on the WWTP property are Goldston slaty silt loam on the slopes along the southern edge of the site and Chewacla loam on the floodplain.

Site Summary

The existing site is essentially located on an island of land, which is surrounded by Morgan Creek on the west, north and east and by a side stream, referred to as the bypass channel, on the south. The Morgan Creek bypass channel was created in the late 1960s, prior to the formation of OWASA. Elevations on the WWTP property range from 245 feet above mean sea level along the banks of Morgan Creek to 270 feet on the southwestern portion of the site. The FEMA 100-year flood elevation varies between 265 and 261 feet across the WWTP property, according to the most recently published FEMA Flood Insurance Rate Maps. Most of the WWTP property was in the floodplain prior to original WWTP construction in 1948. Approximately 75% of the plant is contained within an earthen dike, which is constructed above the floodplain. This dike is located along the aeration basins and continues along the entrance road to the north, along Morgan Creek on the west, and along the bypass channel on the south. All structures located outside of this dike are constructed so that flood waters will not inhibit their function. For example, the tops of the secondary clarifiers are located above the floodplain, thus preventing flood waters from spilling over into the tanks. Elevated walkways exist for access during flood events.

There are several visual buffers located on the property. On the north, the plant is screened from the golf course and athletic fields by evergreen trees and bushes planted.

Conceptual Site Plan

As shown on the Conceptual Plan drawing, the existing site consists of an administrative building, which contains staff offices and a laboratory. There are also structures that house process equipment such as intermediate pumping stations and aeration blowers. The remaining structures on site are treatment unit process basins. A unit process is a general term for any device that is used in the treatment of wastewater. Some of the larger unit process basins are the aeration basins, primary clarifiers, secondary clarifiers, sludge fermenter, and sludge digesters.

The Conceptual Plan also shows the planned location of the proposed structure. The proposed project consists of a reclaimed water (RCW) storage and pumping facility, and associated piping, at OWASA's Mason Farm Road Wastewater Treatment Plant (WWTP). Initially, the RCW system will supply cooling tower demands at chiller facilities on the UNC Campus; however, the facilities are being designed with flexibility to allow other approved water demands to be accommodated by the reclaimed water system in the future. Although some limited clearing will be necessary to construct the new RCW facility, most of the existing vegetation will remain in place.

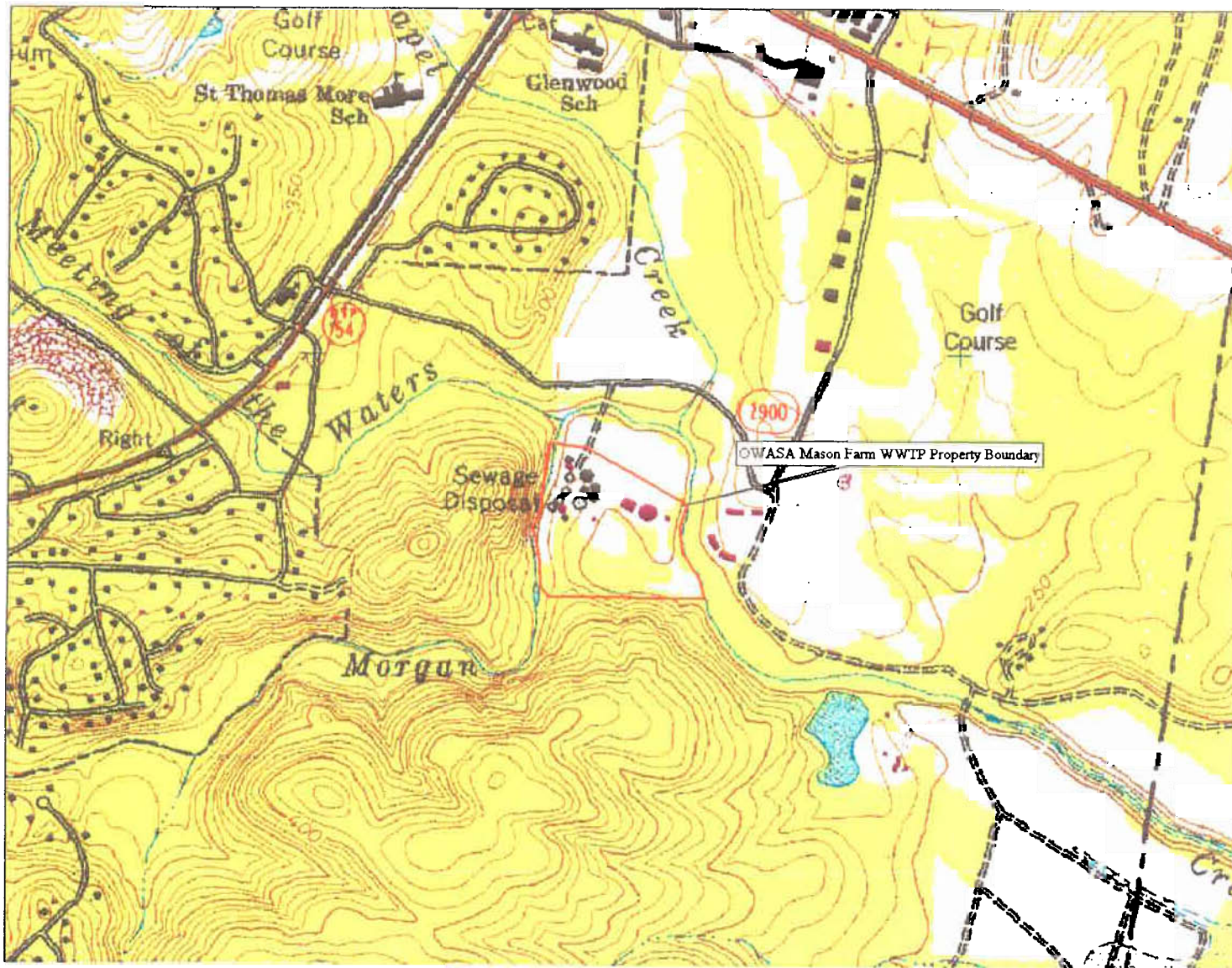
Requested Exceptions to Chapel Hill's Land Use Management Ordinance

We respectfully request exemption from the Resource Conservation District (RCD) and from the Watershed Protection District (WPD) rules. The entire plant property is located within the RCD, so there is no feasible alternative to construct the RCW facility without constructing within the RCD. In April 2003, a flood plain study of the area around the plant was conducted to ensure that the ongoing plant upgrades would not effect the floodplain elevations in the area. Given the small size of the proposed facility, floodplain elevations are not expected to be affected by the project. Additional modeling will be completed to confirm and document this.

Portions of the property are locating within the WPD stream buffer. The existing Special Use Permit for existing and development at the property site identifies an impervious area of 380,805 square feet. The additional proposed impervious surface area following construction of the RCW facility will be 12,405 square feet.

Mason Farm – Wastewater Treatment Plant

USGS Topographic Map of Plant Vicinity



Scale: 1-inch = 1,200-feet

Map Reference: Chapel Hill, North Carolina

List of Property Owners and Addresses
within

1,000 feet of the Orange Water and Sewer Authority Mason Farm WWTP Parcel

PIN 9797295671
North Carolina Botanical Garden
UNC
Campus Box 3375
Totten Center
Chapel Hill, NC 27599

PIN 9798213071, Orange Water and Sewer Authority

PIN 9798210526
UNC Wastewater Research Center
Environmental Sciences & Engineering
UNC
Campus Box 7431
Room 104 Rosenau Hall
Chapel Hill, NC 27599

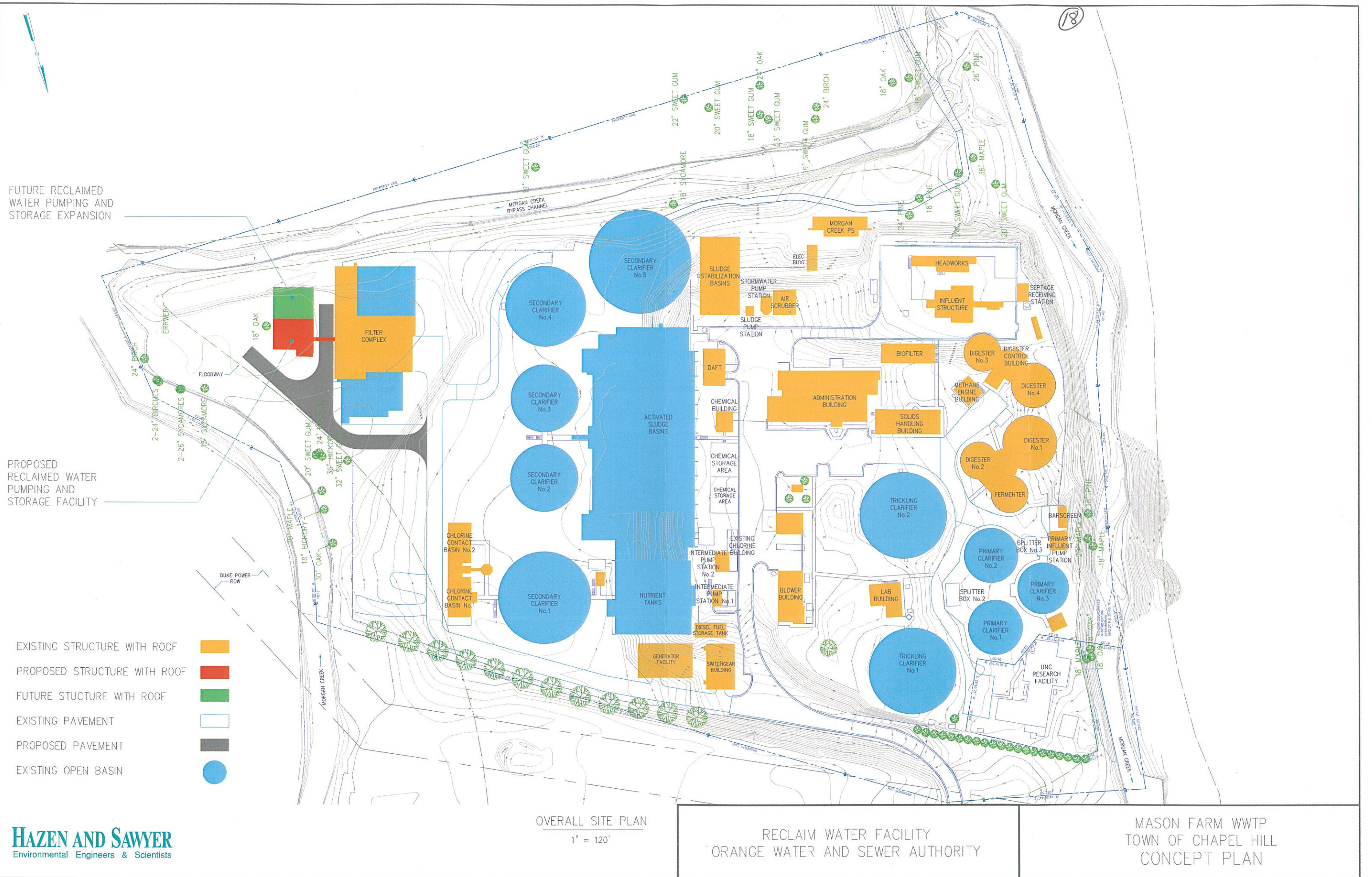
PIN 9798326854
UNC Finley Golf Course
P.O. Box 2675
Chapel Hill, NC 27515

PIN 9797199631
Edward D. Paradise
104 Silers Fern Ct
Chapel Hill, NC 27517-8380

PIN 9797082499
State of North Carolina
UNC
Campus Box 1060
103 Giles Homey Bldg.
Chapel Hill, NC 27599

PIN 9788545304
UNC Property Office
Campus Box 1060
205 Wilson Street
Chapel Hill, NC 27599

PIN 9798518134
University of North Carolina
300 South Bldg 005A
Chapel Hill, NC 27514



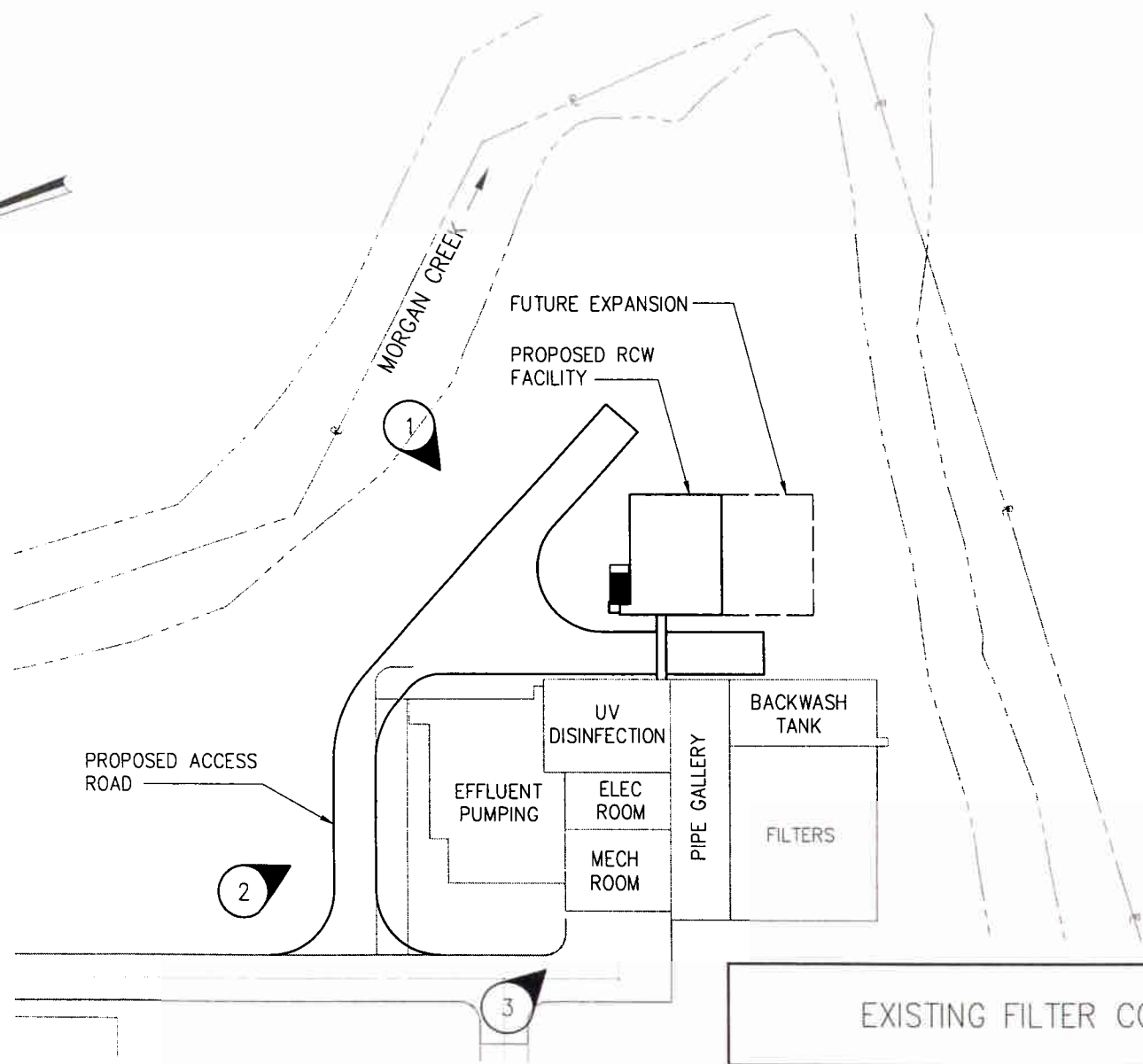


PHOTO 1



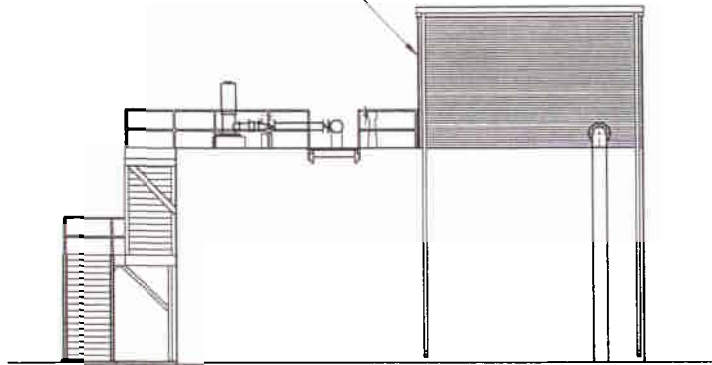
PHOTO 2



PHOTO 3



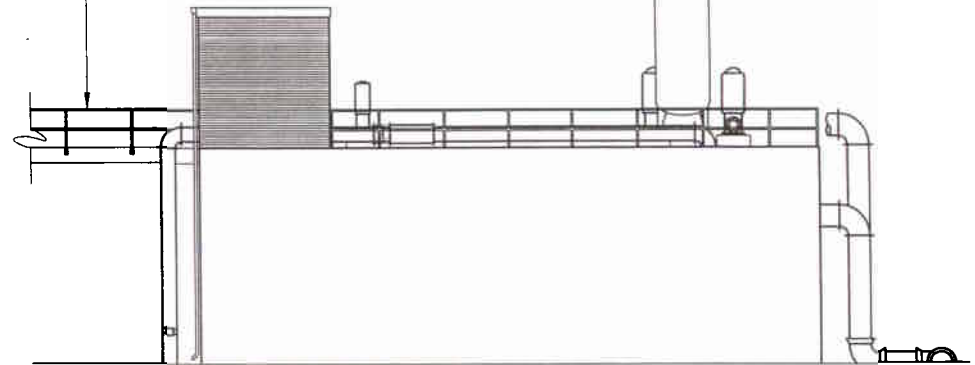
BRICK VENEER
CHEMICAL BUILDING



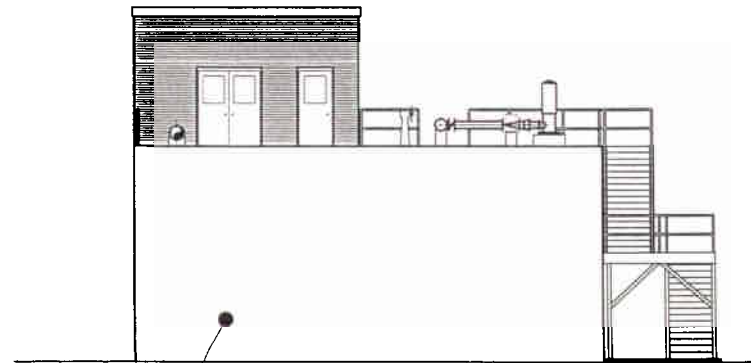
WEST ELEVATION

WALKWAY TO
EXISTING FILTER
STRUCTURE

SURGE TANK



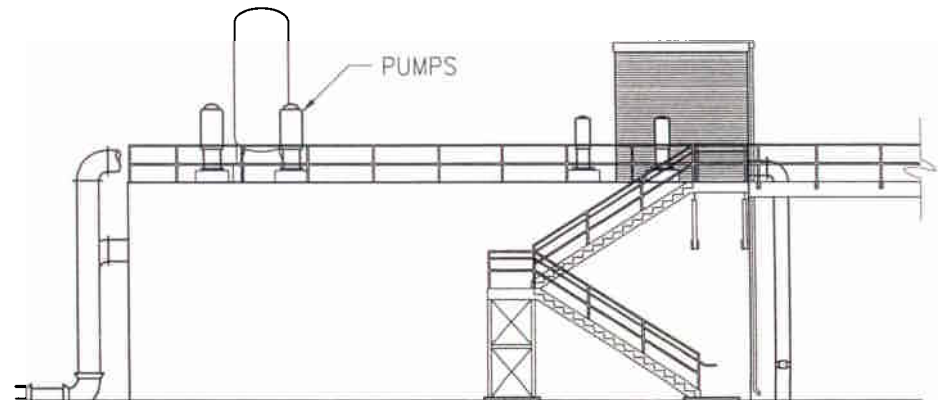
SOUTH ELEVATION



CONCRETE
STORAGE TANK

EAST ELEVATION

PUMPS



NORTH ELEVATION

OWASA RECLAIMED WATER PUMPING AND
STORAGE FACILITY

ARCHITECTURAL ELEVATIONS
CONCEPT PLAN

HAZEN AND SAWYER
Environmental Engineers & Scientists