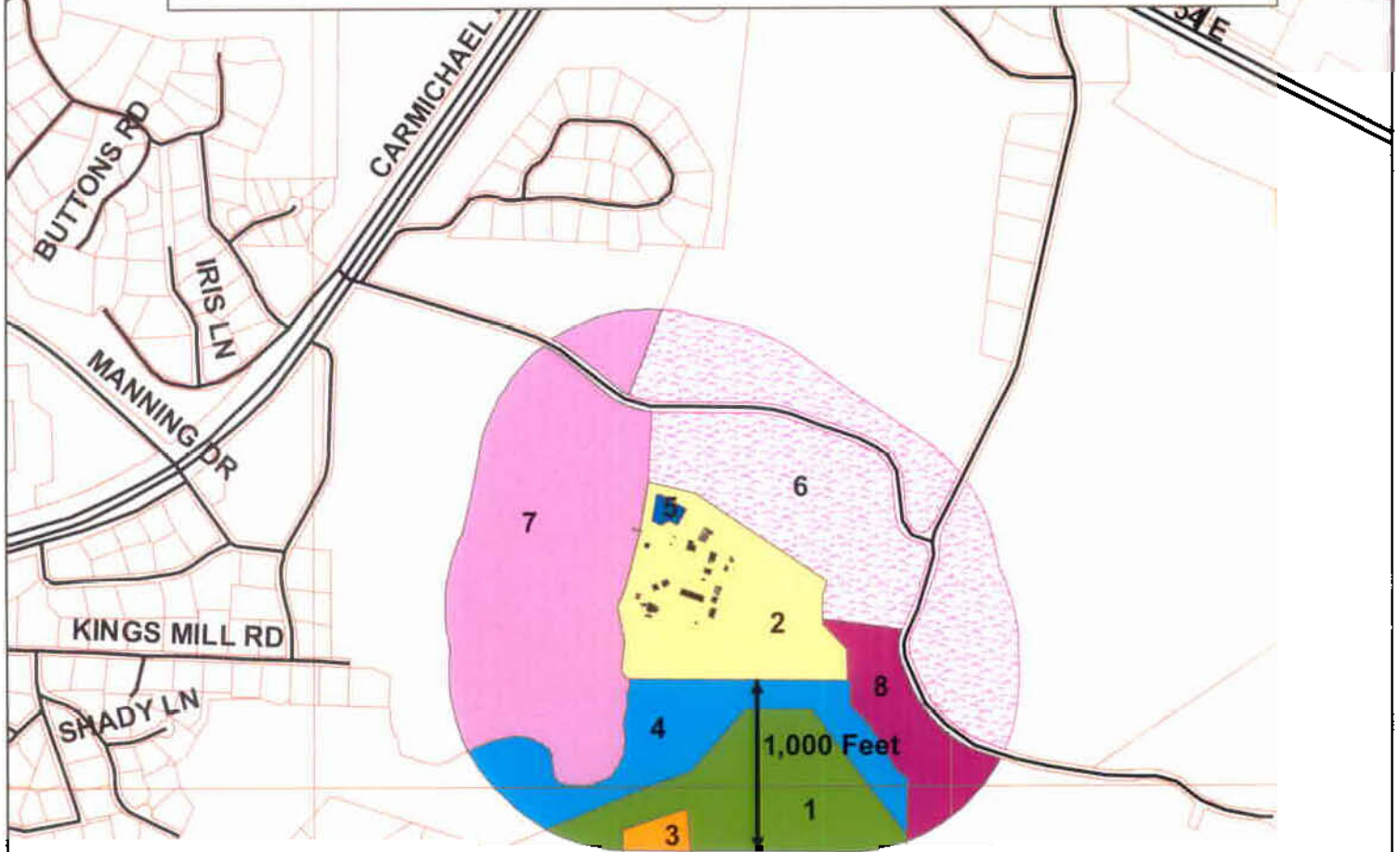


# Aerial Photo within 1,000 Feet ATTACHMENT 6 of the OWASA Mason Farm WWTP Parcel

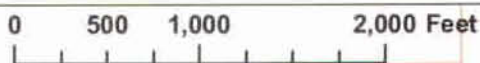


# Property Owners within 1,000 Feet of the OWASA Mason Farm WWTP Parcel



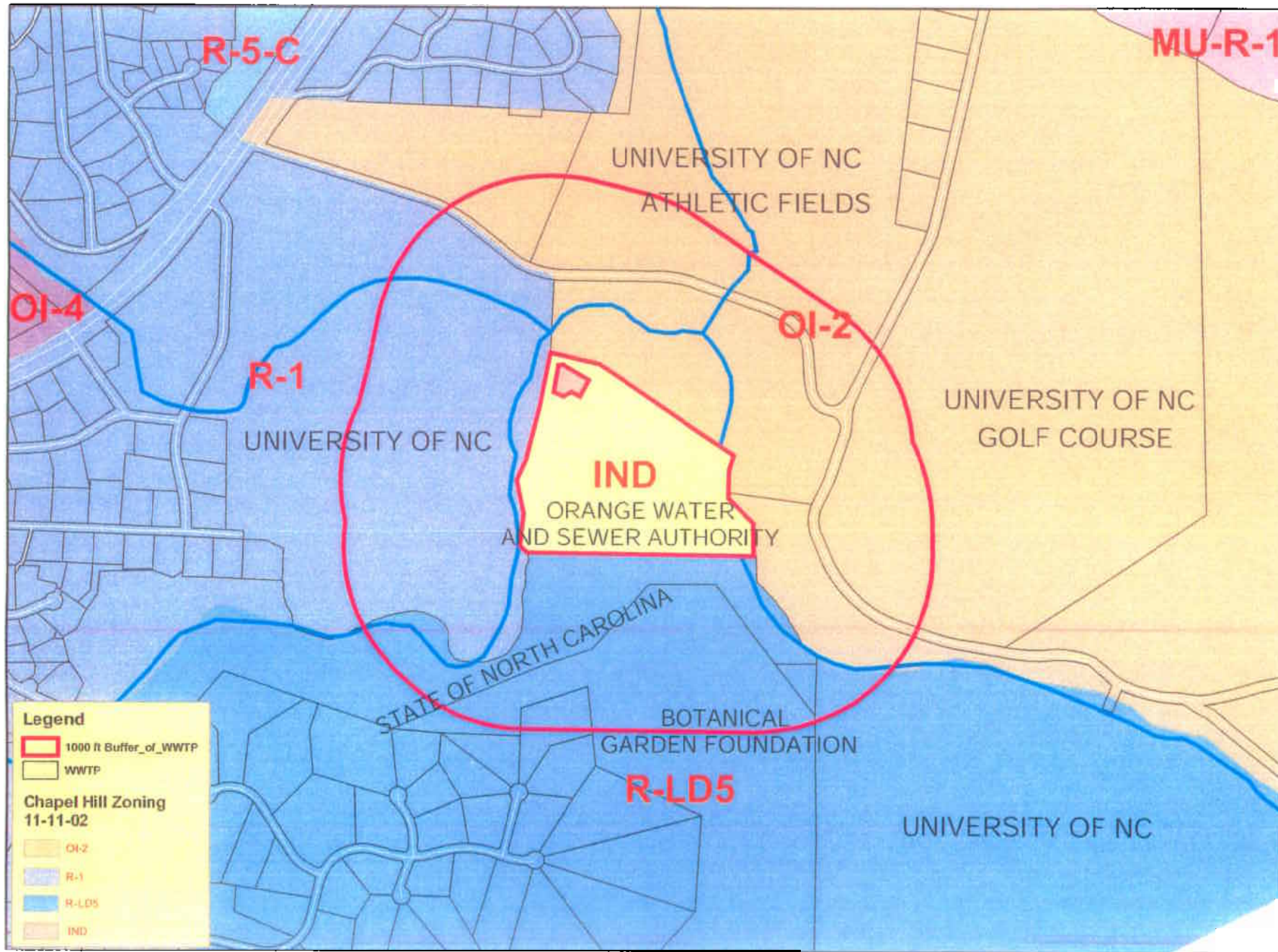
## Legend

| Symbol | Owner, Address  |
|--------|---|
| —      | Street  |
| ■      | 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



(17)

**Legend**

- 1000 ft Buffer\_of\_WWTP
- WWTP

**Chapel Hill Zoning 11-11-02**

- OI-2
- R-1
- R-LD5
- IND

0 185 370 740 1,110 1,480 Feet



**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.

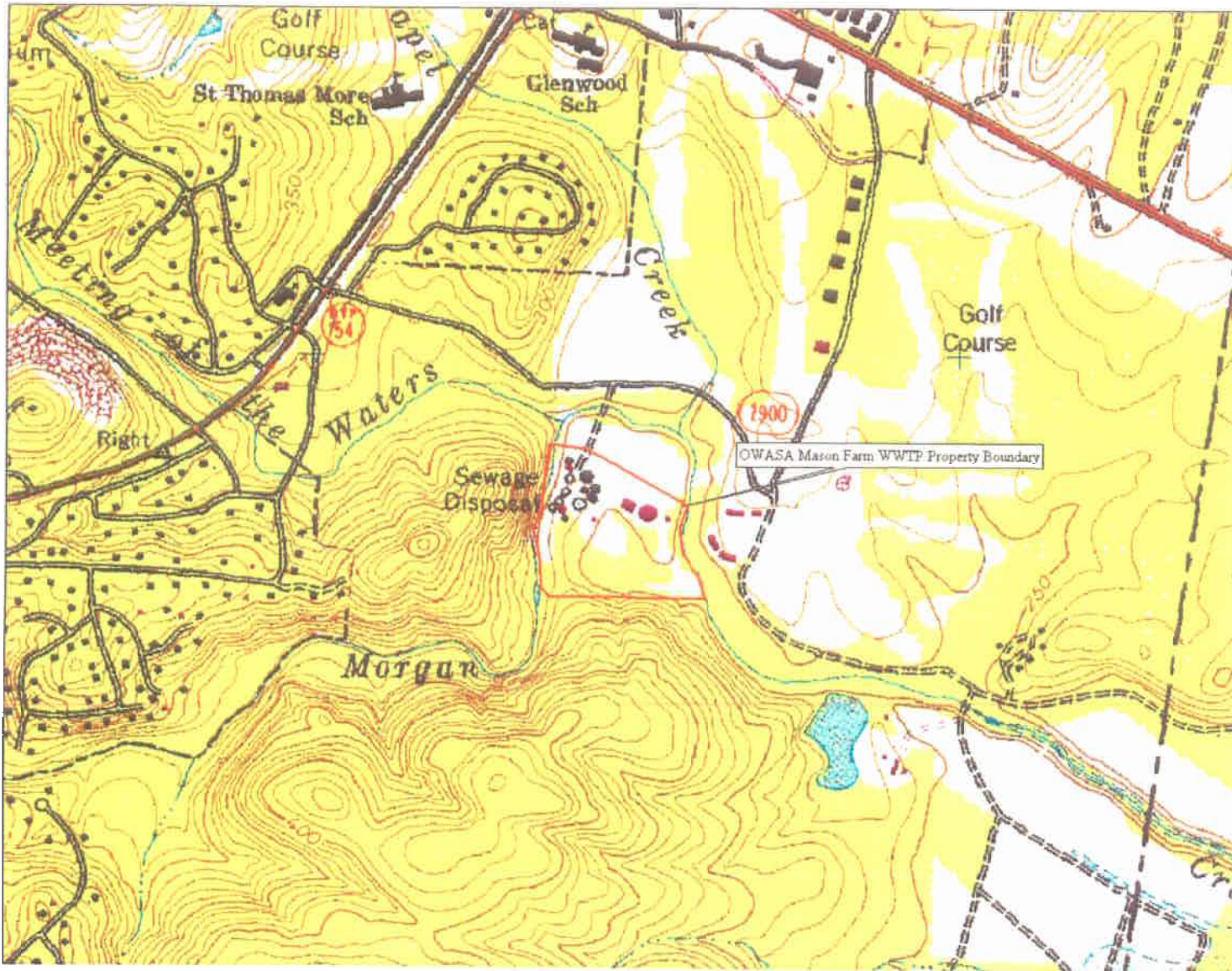
### **Requested Exceptions to Chapel Hill's Land Use Management Ordinance**

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

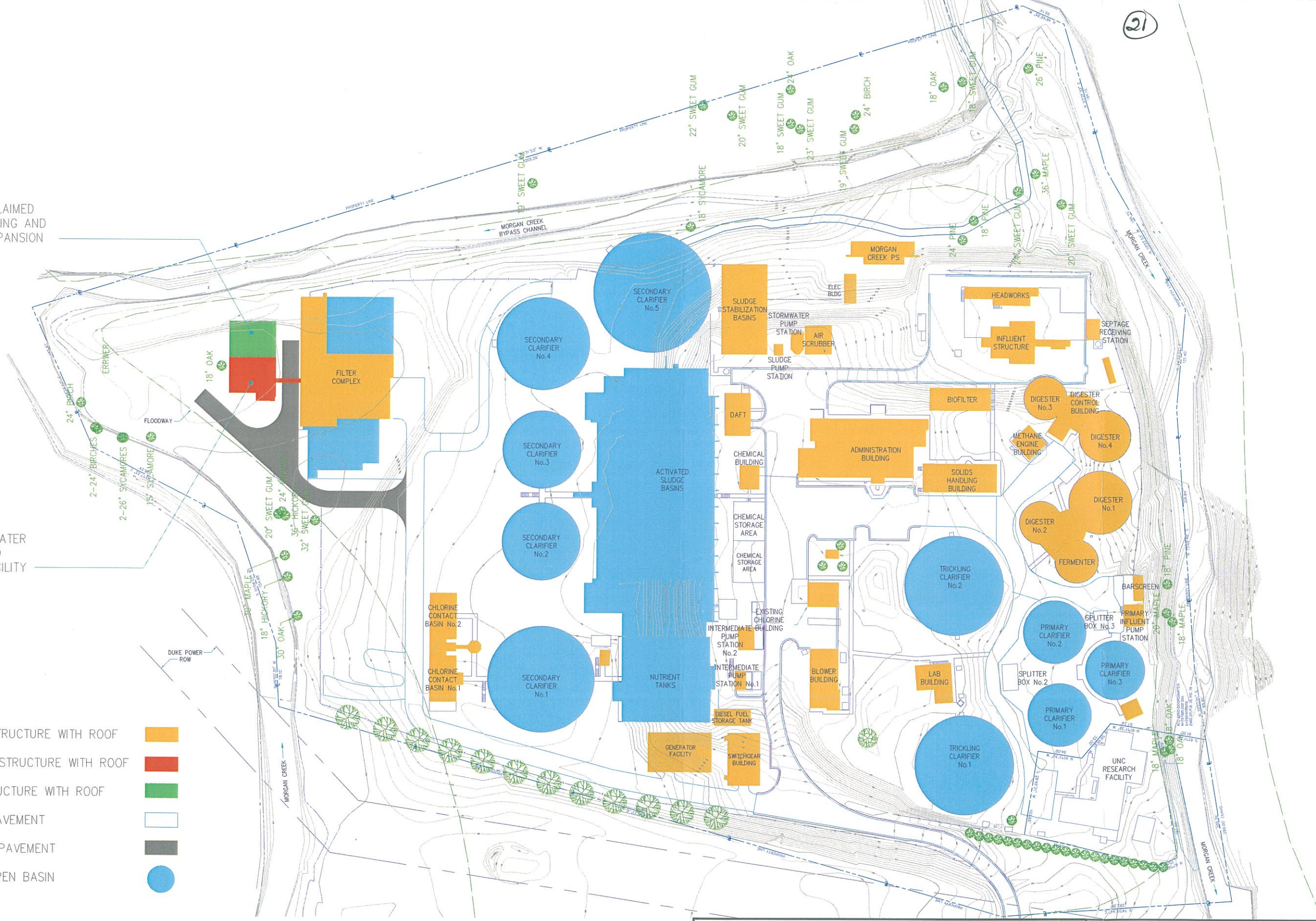
1. PIN 9797295671  
North Carolina Botanical Garden  
UNC  
Campus Box 3375  
Totten Center  
Chapel Hill, NC 27599
2. PIN 9798213071, Orange Water and Sewer Authority
3. PIN 9798210526  
UNC Wastewater Research Center  
Environmental Sciences & Engineering  
UNC  
Campus Box 7431  
Room 104 Rosenau Hall  
Chapel Hill, NC 27599
4. PIN 9798326854  
UNC Finley Golf Course  
P.O. Box 2675  
Chapel Hill, NC 27515
5. PIN 9797199631  
Edward D. Paradise  
104 Silers Fern Ct  
Chapel Hill, NC 27517-8380
6. PIN 9797082499  
State of North Carolina  
UNC  
Campus Box 1060  
103 Giles Horney Bldg.  
Chapel Hill, NC 27599
7. PIN 9788545304  
UNC Property Office  
Campus Box 1060  
205 Wilson Street  
Chapel Hill, NC 27599
8. PIN 9798518134  
University of North Carolina  
300 South Bldg 005A  
Chapel Hill, NC 27514

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FUTURE RECLAIMED WATER PUMPING AND STORAGE EXPANSION

PROPOSED RECLAIMED WATER PUMPING AND STORAGE FACILITY

- EXISTING STRUCTURE WITH ROOF
- PROPOSED STRUCTURE WITH ROOF
- FUTURE STRUCTURE WITH ROOF
- EXISTING PAVEMENT
- PROPOSED PAVEMENT
- EXISTING OPEN BASIN



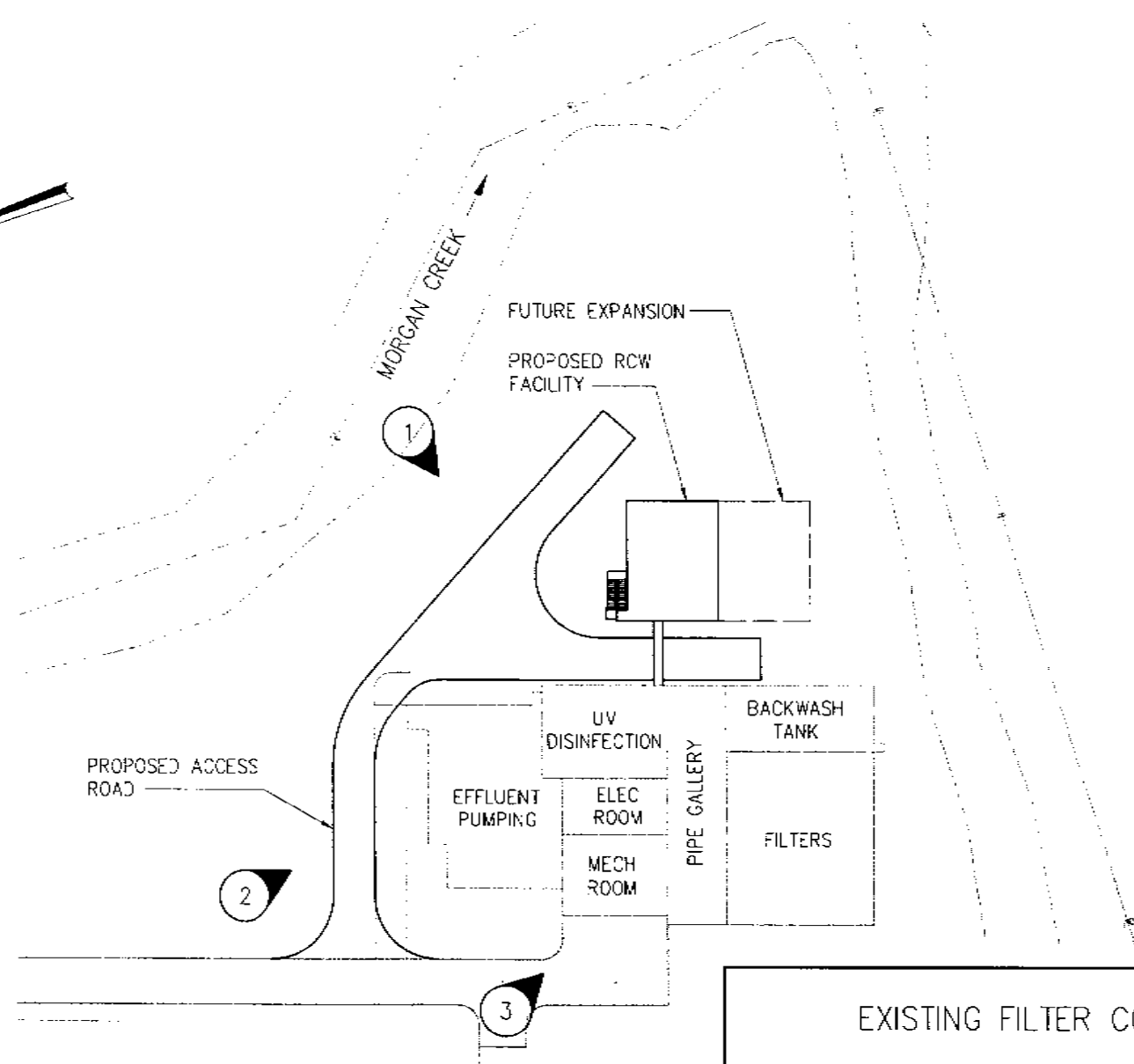
OVERALL SITE PLAN  
1" = 120'

RECLAIM WATER FACILITY  
ORANGE WATER AND SEWER AUTHORITY

MASON FARM WWTW  
TOWN OF CHAPEL HILL  
CONCEPT PLAN

20060501 1:59P H:\30853-005\GEN\Concept Plan.dwg By: J.FARMER Last Saved By: THE TRICK





EXISTING FILTER COMPLEX

PHOTO MAP  
CONCEPT PLAN

**HAZEN AND SAWYER**  
Environmental Engineers & Scientists

PHOTO 1



25

PHOTO 2



28

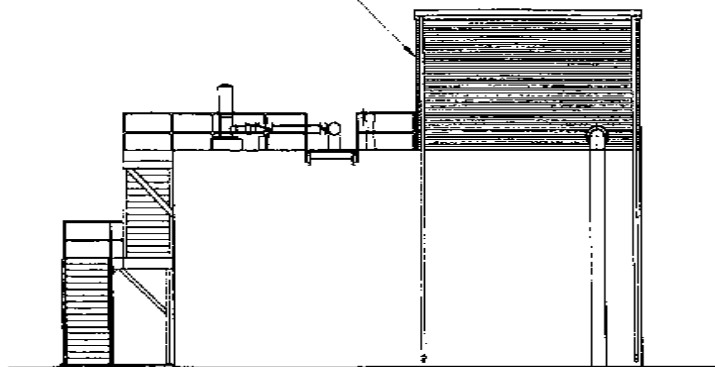
PHOTO 3



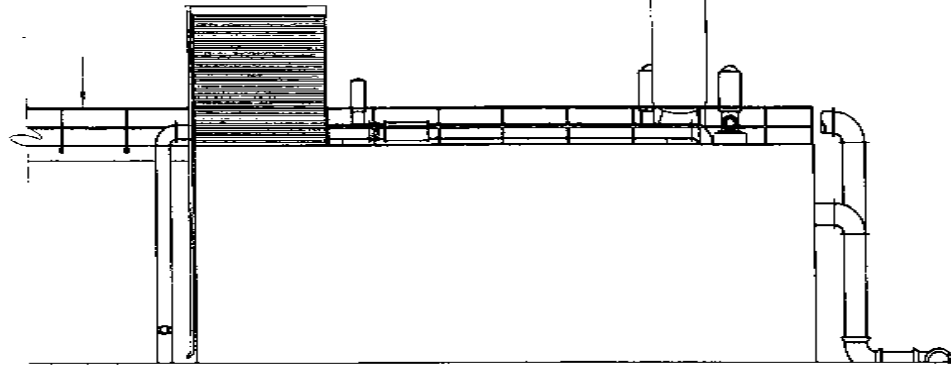
BRICK VENEER  
CHEMICAL BUILDING

WALKWAY TO  
EXISTING FILTER  
STRUCTURE

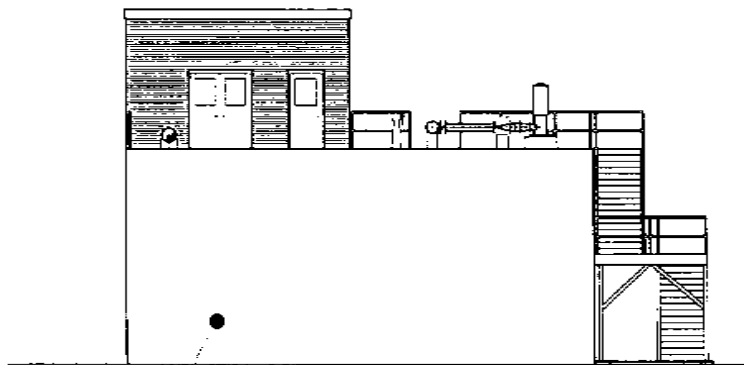
SURGE TANK



WEST ELEVATION

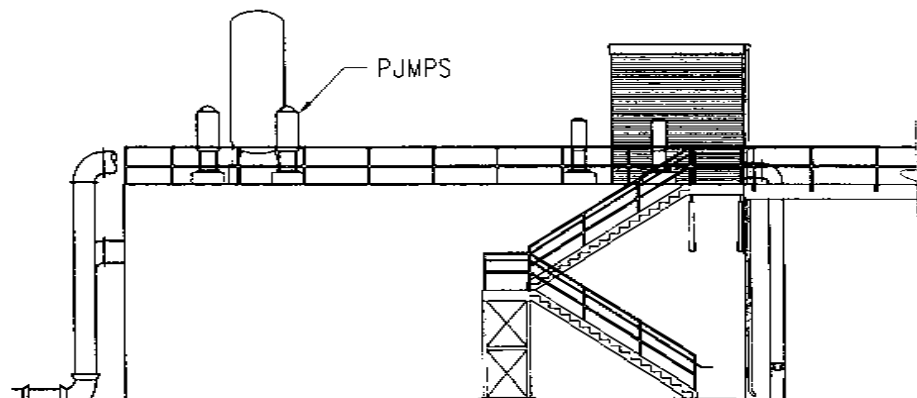


SOUTH ELEVATION



EAST ELEVATION

CONCRETE  
STORAGE TANK



NORTH ELEVATION

PUMPS

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OWASA RECLAIMED WATER PUMPING AND  
STORAGE FACILITY

ARCHITECTURAL ELEVATIONS  
CONCEPT PLAN

**HAZEN AND SAWYER**  
Environmental Engineers & Scientists