

SITE FEASIBILITY STUDY
RIVER HILLS ROAD SCHOOL PROPERTY

Prepared by

PFLUGER ASSOCIATES
ARCHITECTS/PLANNING CONSULTANTS

AND

MARTINEZ & WRIGHT ENGINEERS, INC.

15 December 1995

**Eanes Independent School District
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John A. Phillips, Jr., Ph.D, Superintendent of Schools
Robert N. Jocius, Assistant Superintendent for Business Affairs
Bill Wheelless, Director of Support Services

**Re: Site Feasibility Study
River Hills Road School Property**

Dear Board Members:

On behalf of Pfluger Associates, Architects, and Martinez & Wright Engineers, Inc., I am pleased to submit the following report. This Feasibility Study has been prepared by Pfluger Associates, Architects, and Martinez & Wright Engineers, Inc. for the purpose of reviewing two tracts of land owned by Eanes Independent School District. The properties are located on River Hills Road in Travis County.

The larger of the two tracts has been evaluated to determine the feasibility of constructing a new 8th and 9th Grade Campus for 1500 students with core facilities for expansion of the student capacity to 2000. The study acknowledges that the facility could eventually serve as a high school facility in the future. The smaller of the two tracts has been reviewed to determine the feasibility of constructing a new elementary school for an estimated 850 students. A 30,000 square foot warehouse or bus parking depot for 25 buses were considered as alternative uses for the smaller piece of property.

I want to personally thank Dr. John Phillips, Robert Jocius, Bill Wheelless, Dr. Hope Erickson, and the Members of the Eanes Independent School District 8th and 9th Grade Program Planning Committee for their support and assistance in producing this study. Please let me know if you have any questions relating to our report. Pfluger Associates, Architects, and Martinez & Wright Engineers, Inc. appreciate this opportunity to work for Eanes Independent School District, and we look forward to providing the next phase of services for the 8th and 9th Grade Center project.

Sincerely,

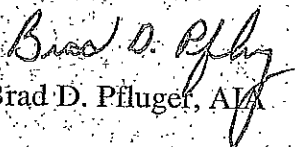

Brad D. Pfluger, AIA

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STUDY PURPOSE AND OBJECTIVES

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1. PURPOSE

Eanes ISD owns two tracts of land on River Hills Road. This study was commissioned for the primary purpose of determining the feasibility of developing a new 8/9 school with all of its required on-site improvements relating to play fields, parking and drives on the largest tract of land located west of River Hills Road. Additional consideration was given to the idea that the facility may eventually be expanded to a high school facility. Additions to the 8/9 school will be required to accommodate additional students, curriculum changes, parking, and other programs specific for a high school facility.

Another aspect of this study was to determine whether or not an elementary school could be located on the smaller tract of land east of River Hills Road. If an elementary school is not located on this site, could a district warehouse or bus parking depot for 25 buses be located on the smaller site?

Ultimately, based on the information contained in this study, the Eanes ISD School Board could decide whether or not it is physically and/or economically feasible to develop the River Hills Road site and if so, how and for what use?

2. OBJECTIVES

FEASIBILITY ANALYSIS OF THE RIVER HILLS ROAD PROPERTY FOR DEVELOPMENT OF A NEW 1500-STUDENT 8/9 SCHOOL (EXPANDABLE TO 2000 STUDENTS) ON THE LARGER TRACT OF LAND AND A NEW 850-STUDENT ELEMENTARY SCHOOL ON THE SMALLER TRACT OF LAND.

Site Program Requirements:

1. Determine the physical size and conceptual configuration of a new 8/9 school sized initially for 1,500 students with core facilities sized for 2,000 students.
2. Identify and provide for site play fields, access and parking as required.
3. Determine the physical size and conceptual configuration of a future 2000-student high school and associated site improvements.
4. Indicate the physical size and conceptual configuration of a new elementary school and related site improvements on the smaller tract of land.

Site Feasibility Requirements:

1. Identify the boundaries, size, and usable area of the property.
2. Identify physical limitations of the site.
3. Determine if the Site Development Program Requirements fit on site.
4. Review site access to determine suitability as a school development.
5. Determine the availability of utilities and identify potential improvements that would be required.
6. Determine the development limitations (requirements) imposed on the site by governmental entities and agencies and identify how these requirements could affect development.
7. Estimate the cost of site development.

Summary:

1. Can the site be developed?

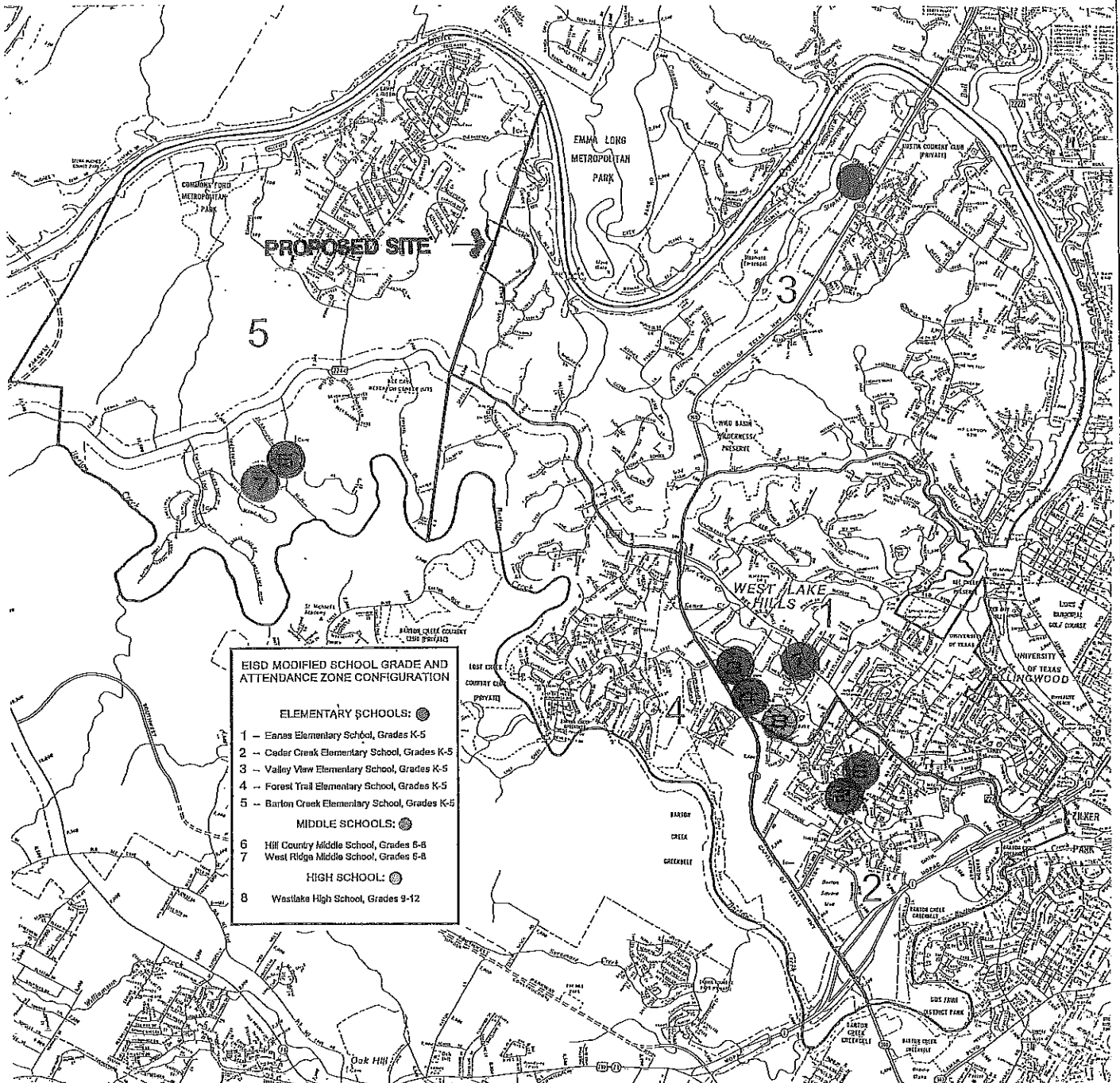
SITE LOCATION & HISTORY

SITE LOCATION AND HISTORY

The two tracts of land are located in Travis County on a section of River Hills Road approximately .75 miles north of Bee Caves Road. The sites are located within Eanes Independent School District boundaries. The location of the sites are near the geographic center of the overall district boundaries.

The larger tract of land is located on the west side of River Hills Road and is bordered on the north side by Taylor Road. The size of the property is 86.85 acres. The smaller of the two tracts of land is located on the east side of River Hills Road and is across the street from the large tract. The size of the property is 18.15 acres.

The properties were purchased by the Eanes Independent School District in 1985. At that time, the availability of land usable for school district purposes appeared to be diminishing. Subsequent environmental and governmental legislation and regulations have impacted the overall potential of the site.



EISD MODIFIED SCHOOL GRADE AND ATTENDANCE ZONE CONFIGURATION

ELEMENTARY SCHOOLS: ●


- 1 - Eanes Elementary School, Grades K-5
- 2 - Cedar Creek Elementary School, Grades K-5
- 3 - Valley View Elementary School, Grades K-5
- 4 - Forest Trail Elementary School, Grades K-5
- 5 - Barton Creek Elementary School, Grades K-5

MIDDLE SCHOOLS: ●

- 6 - Hill Country Middle School, Grades 6-8
- 7 - West Ridge Middle School, Grades 6-8

HIGH SCHOOL: ●

- 8 - Westlake High School, Grades 9-12

SITE LOCATION AND HISTORY		
PFLUGER ASSOCIATES ARCHITECTS/PLANNING CONSULTANTS <small>COLLEADO CROSSING AUSTIN, TEXAS 78704 215 SOUTH LAMAR 512 / 476-4040</small>		
 MARTINEZ & WRIGHT ENGINEERS, INC.	<small>TWIN TOWERS</small> <small>1106 CLAYTON LANE</small> <small>SUITE 400 W</small> <small>AUSTIN, TEXAS 78723</small>	
EXHIBIT --	SCALE:	DATE 12/11/95

SITE ACCESS

SITE ACCESS

TRAFFIC CONSIDERATIONS

Access to the school sites is obtained by way of River Hills Road, which is maintained by Travis County. The sites are located approximately 0.75 miles from the intersection of River Hills and Bee Caves Roads. The site location is illustrated in Exhibit 3.1, Site Access. River Hills Road is comparatively narrow and averages about 22 feet of usable pavement width. The Right of Way width varies but at some points measures 34 feet. River Hills road is posted for a speed limit of 30 mph. Representatives of Travis County have indicated that they believe River Hills Road will require widening and surface improvements. Additionally certain curves must have their radii increased to permit safe passage and separation of vehicles. The overall Right of Way width for the road would also have to be increased.

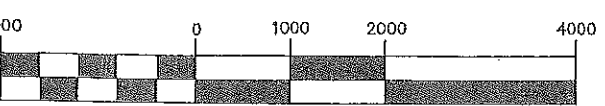
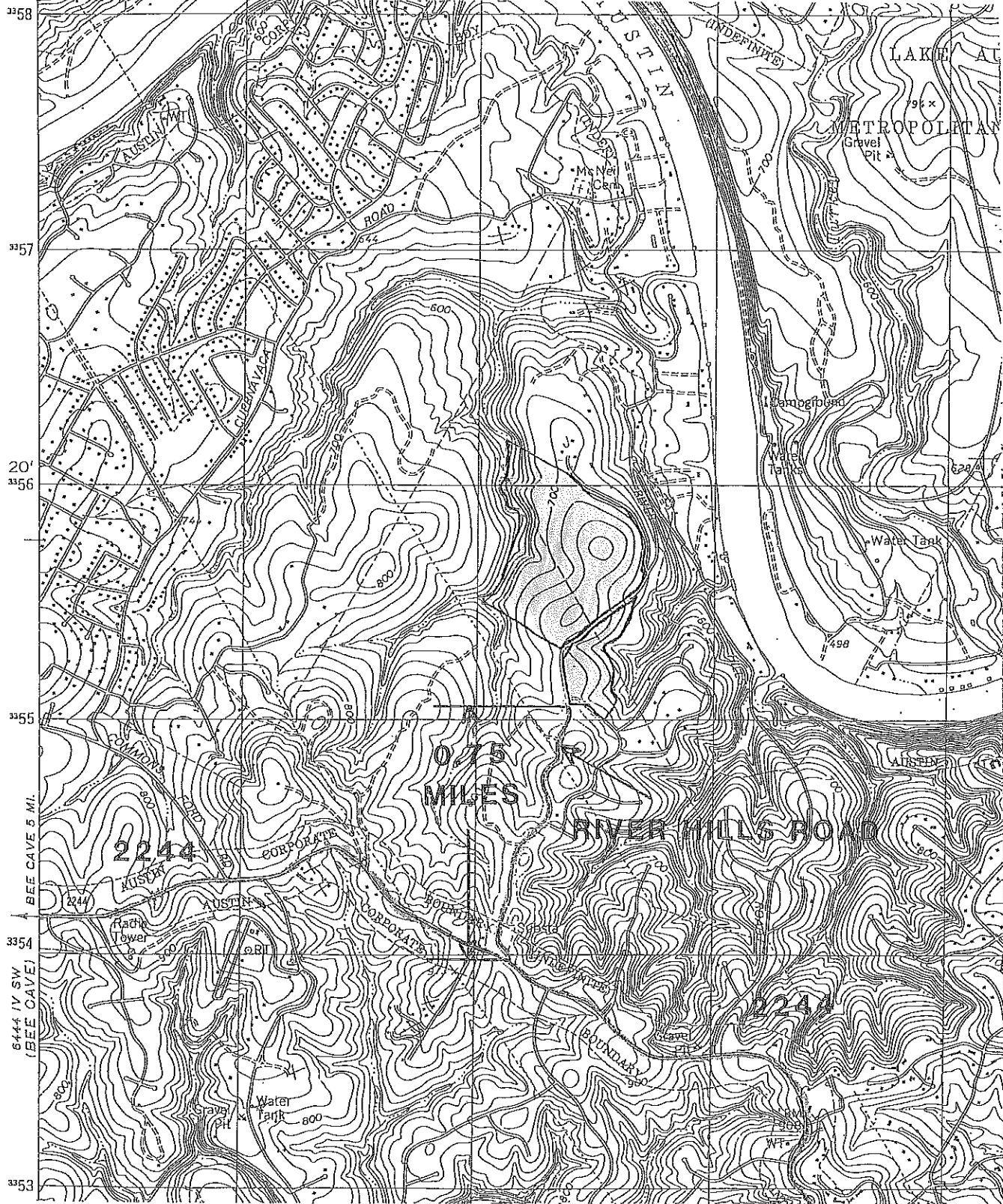
Taylor Road is adjacent to the secondary school property and would provide bus access into the school tract. Taylor Road is narrow and would require pavement widening and increased Right of Way width for a length of approximately 0.20 miles.

The installation of the two schools would require major reconstruction of the immediate access to the property, both along River Hills and Taylor Roads. River Hills Road would be widened to four lanes in front of the schools, providing for a left turn lane into the secondary school property and an acceleration lane for exiting traffic. A caution light would also be needed at the point of access. With a 2,000 student facility there would be a peak hourly rate of approximately 700 cars per hour entering the school facility on the west side. The anticipated traffic will have a peak half hour rate of 1,400 vehicles per hour which will require a free access into the property on a continuous basis if backup on River Hills Road is to be avoided. Therefore it is necessary that drop off traffic be turned and exited clear of the entrance. Bus traffic would utilize the rear entrance and exit for loading and unloading. Fortunately there is little existing local southbound traffic to interfere with the left turning movement into the school facility. Exiting traffic will not

be a problem since practically all traffic will be southbound with no back up of River Hills Road anticipated.


RIVER HILLS ROAD IMPROVEMENTS

It should be noted that Travis County cannot assure that improvements to the 0.75 mile River Hills Road, consisting of widening and ROW acquisition, can be made on a timely basis to coincide with the opening of any facility. However increased usage of River Hills is an essential component of the development of the proposed schools. Consequently the legalities and liabilities associated with opening the new schools without improving River Hills Road back to Bee Caves Road must be carefully considered. Travis County expects that roadway improvements could cost at least \$1,000,000.



(IN FEET)
1 inch = 2000ft.



SITE ACCESS	
PFUGER ASSOCIATES ARCHITECTS/PLANNING CONSULTANTS	
-- COLORADO CROSSING AUSTIN, TEXAS 78704	218 SOUTH LAMAR 512 / 478-4048
 MARTINEZ & WRIGHT ENGINEERS, INC.	
EXHIBIT 2.1	SCALE: 1"=2000' DATE: 12/11/95

TWIN TOWERS
1106 CLAYTON LANE
SUITE 400 W
AUSTIN, TEXAS 78723

SITE DESCRIPTION

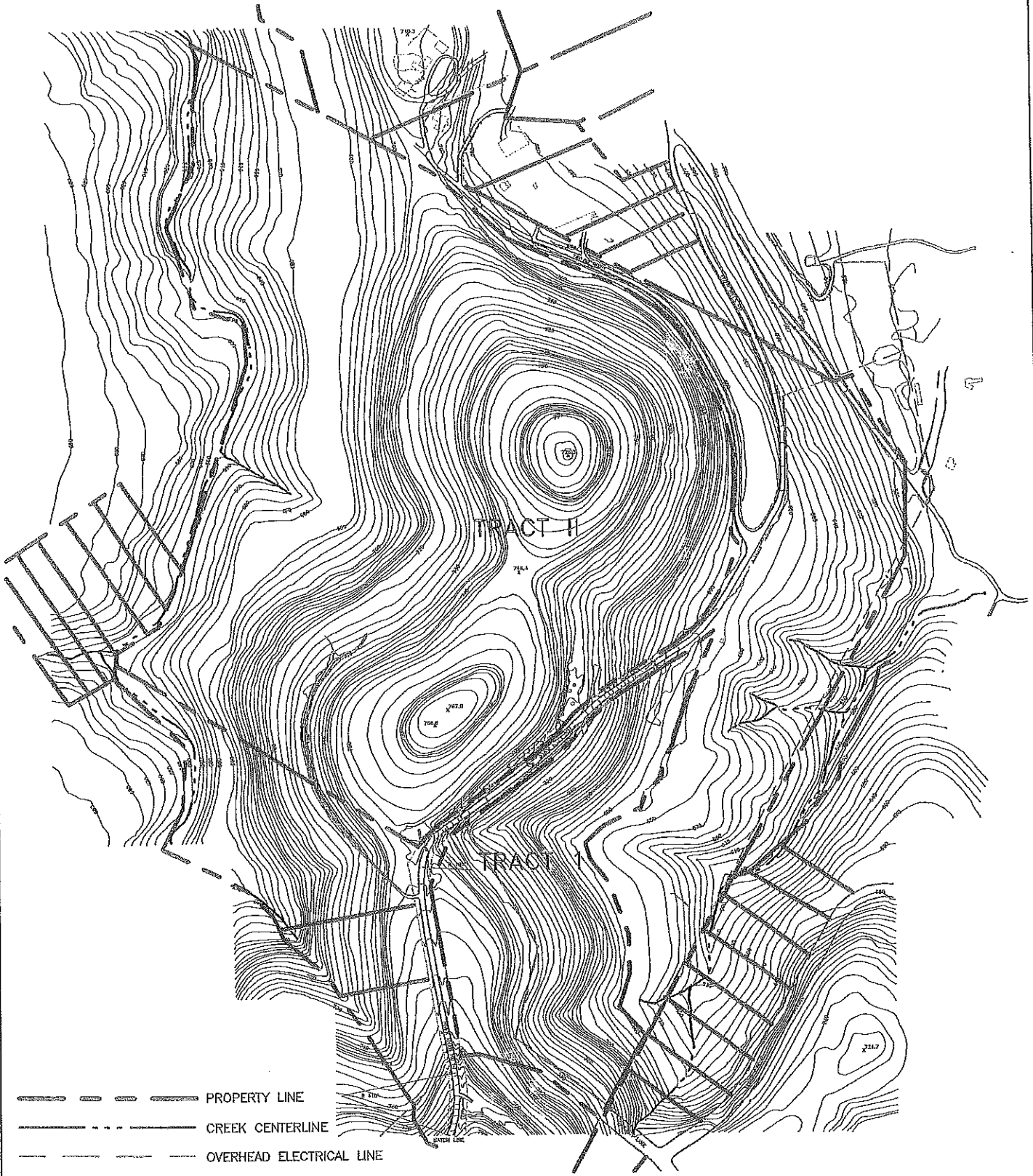
SITE DESCRIPTION

The project site consists of two separate tracts. Tract I incorporates 18.15 acres on the east side of River Hills Road. This property is bisected with an electric easement which will have to be realigned for proper utilization of the property. The tract is within an Upland Zone as defined by the City of Austin.

Tract II is on the west side of River Hills Road and includes 86.85 acres. A portion of Tract II is within a 100 year floodplain and the Critical Water Quality zone of the Colorado River, as defined by the City of Austin. In addition, there is a Water Quality Transition Zone and the Upland Zone. Impervious cover restriction apply to these zones which contain, for the most part, very steep slopes. River Hills Road, which separates the two tracts, contains a City of Austin electric power line, and a 20" raw water line. The Pier Restaurant access is just north of the two tracts. Residential development is beginning in the general area. There is no present development on either tract of land.

The topography of both sites is rugged and typical of the surrounding area. The geology is that of the Glen Rose Formation which consists of limestone, dolomite, and marl in alternating hard and soft beds forming stairstep topography, thick to thin bedded, and fine to medium fined grained. No faults are present. **Exhibit 4.1, Existing Site Topography** illustrates the two sites and their surface elevations. Within the "net site area" available for the 8/9th grade center the existing elevations range between 690 and 776 feet above sea level. The existing topography of the sites is discussed in greater detail in **Section 6: Site Topography/Slope Analysis**.

Stormwater runoff from the two parcels of land eventually discharges to the Colorado River (Lake Austin). The Colorado River provides drinking water to numerous water districts and the City of Austin.



- PROPERTY LINE
- CREEK CENTERLINE
- OVERHEAD ELECTRICAL LINE
- RIDGE LINE
- ~~~~~ TREELINE



(IN FEET)
1 inch = 500 ft.



EXISTING SITE TOPOGRAPHY

PFLUGER ASSOCIATES
ARCHITECTS/PLANNING CONSULTANTS

COLORADO CROSSING AUSTIN, TEXAS 78704 215 SOUTH LAMAR 612 / 470-0240



MARTINEZ & WRIGHT ENGINEERS, INC.

TWIN TOWERS
1106 CLAYTON LANE
SUITE 400 W
AUSTIN, TEXAS 78725

SITE ZONES, SETBACKS & RIGHTS OF WAY

SITE ZONES, SETBACKS AND RIGHTS OF WAY

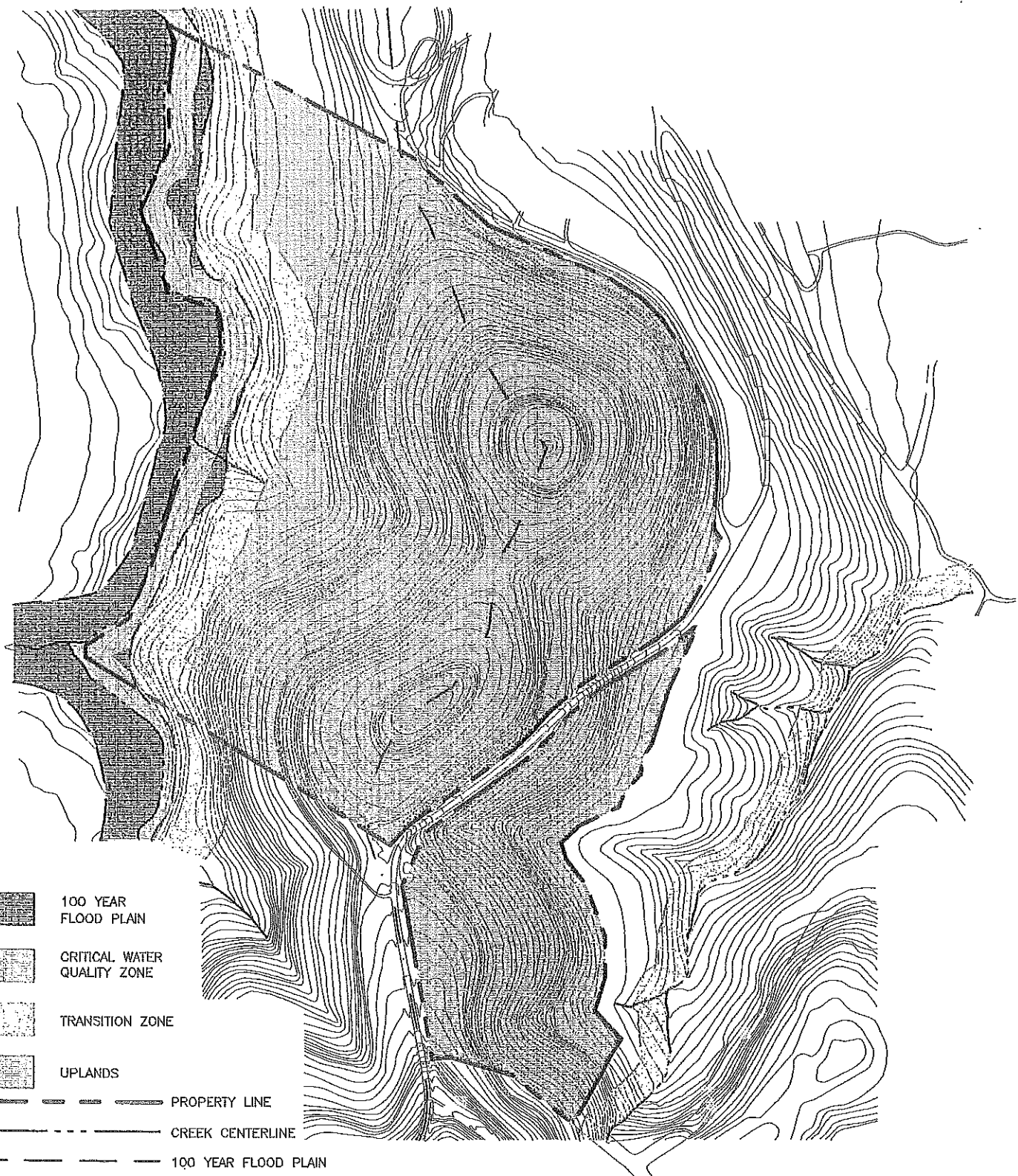
The existing zoning within the project area is illustrated in **Exhibit 5.1, Site Zones**. Additionally refer to **Exhibit 7.1** for the location of 250 endangered species buffer zones. The property is located within the City of Austin's Extraterritorial Jurisdiction (ETJ). In order to protect to protect its drinking water supply City of Austin imposes certain limitations upon development within the ETJ through the provisions of the Comprehensive Water Quality Ordinance. Additionally the City of Austin requires peak flow control (detention) of storm water runoff.








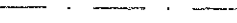
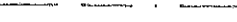

The property is within a watershed considered a Rural Water Supply of the City of Austin. This means that the District is required to file for and obtain a site development permit for any development on either tract of land in accordance with an existing agreement between the City of Austin and EISD. As part of this agreement, the COA provides an early listing of Ordinances which may affect development. This listing is summarized hereinbelow.

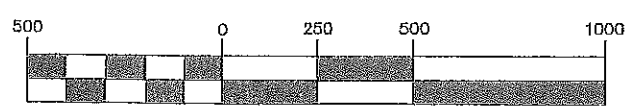
This site plan must comply with the following:

1. Erosion and sedimentation controls must be in accordance with the Environmental Criteria Manual.
2. Surveying and clearing for geotechnical investigation shall be regulated.
3. Construction clearing shall controlled.
4. Cut and fill of the tract may not exceed 4 feet except for building footprint area, public roadway right-of-ways or the construction and maintenance of Water Quality Controls and detention ponds. No cut or fill in excess of 4 feet will be allowed in the CWQZ or the WQ Transition Zone. Cut or fill in excess of 4 feet must be structurally contained.
5. Water Quality Controls will be required for all playfields where fertilizers or herbicides or pesticides are applied unless the District adopts a plan to minimize their use approved by the City.
6. Water Quality controls will be situated and constructed to capture, isolate and treat at lease the first one-half inch of runoff from all contributing areas.


7. Water Quality controls must increase the capture volume by one tenth of an inch above the required one-half inch for each 10% increment of gross impervious cover over 20% within the drainage area to the control.
8. No 40% downstream buffer of the uplands area is required in Water Supply Rural Watersheds for Eanes School District.
9. Water quality controls are required including roadways, if the net site area contains more than 20% impervious cover.
10. Structural controls required may be located in the 40% buffer zone (See 18) if located to maximize overland flow.
11. Water Quality Transition Zones shall extend 200 feet out and parallel to critical water quality zones for Intermediate waterways (320Ac-640Ac) and 100 feet out for minor waterways (64Ac-320Ac)
12. Impervious cover on Upland zones shall not exceed the following: 1) Sixty five (65%) percent on slopes under fifteen (15%) percent gradients, 2) Fifteen (15%) percent impervious cover on slopes of (15%) fifteen to twenty five (25%), 3) Five (5%) percent impervious cover on slopes over (25%) twenty five percent.
13. No impervious cover shall be permitted in the Critical Water Quality Zone.
14. Impervious cover in the Water Quality Transition Zone shall not exceed eighteen (18%) of net site area.
15. Reserved
16. Structures located upslope or downslope of the areas containing slopes of 15-25% are to be constructed using terracing techniques.
17. On sites owned by the District on January 1, 1994 building and parking structures may be built on slopes of 25% to 35% when mutually agreed upon by the City and EISD.
18. An Uplands area is described as all lands not included within the critical water quality zone or water quality transition zone.



-  100 YEAR FLOOD PLAIN
-  CRITICAL WATER QUALITY ZONE
-  TRANSITION ZONE
-  UPLANDS
-  PROPERTY LINE
-  CREEK CENTERLINE
-  100 YEAR FLOOD PLAIN
-  CRITICAL WATER QUALITY ZONE
-  TRANSITION ZONE
-  RIDGE LINE



(IN FEET)
1 inch = 500 ft.

SITE ZONES	
PFLUGER ASSOCIATES ARCHITECTS/PLANNING CONSULTANTS <small>CELEBRADO CROSSING AUSTIN, TEXAS 78704 215 SOUTH LAGAR 612 / 476-0648</small>	
 MARTINEZ & WRIGHT ENGINEERS, INC.	<small>TWIN TOWERS 1105 CLAYTON LANE SUITE 400 W AUSTIN, TEXAS 78725</small>
EXHIBIT 5.1	<small>SCALE: 1"=500' DATE 12/11/95</small>

SITE TOPOGRAPHY / SLOPE ANALYSIS

SITE TOPOGRAPHY, SLOPE ANALYSIS

The City of Austin and other regulatory agencies have adopted development limitations on slopes in their jurisdiction. The slopes ranges are referred to in percent (%) and are grouped as follows:

Slope Category		% Impervious Cover Allowed in Uplands Area
A)	0% to 15%	65%
B)	15% to 25%	15%
C)	25% to 35%	5%

(15% approx. equal to 7 ft horizontal to 1 ft vertical)

(25% approx. equal to 4 ft horizontal to 1 ft vertical)

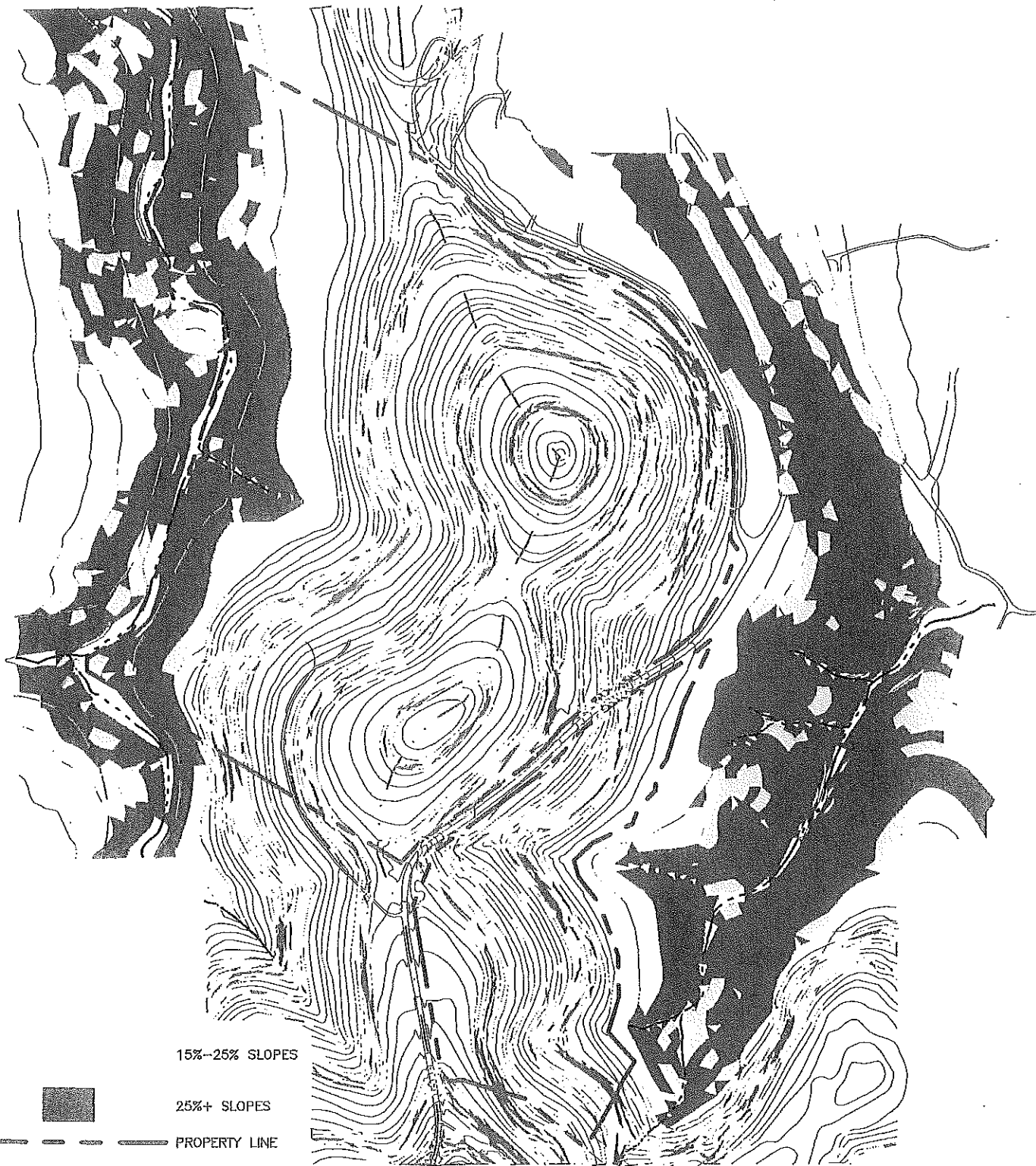
(35% approx. equal to 1.5 ft horizontal to 1 ft vertical)

Exhibit 6.1, Site Slopes shows the two parcels under consideration and the various slopes within the boundaries.

The limitation of development on the various slopes reduces the amount of land available for development. This limitation is identified as the net site area. The net site area is defined as:

100% of site area with slopes between 0% to 15%;
 40 % of site area with slopes between 15% to 25%;
 and 20% site area with slopes 25% to 35%.

	TRACT I	TRACT II
TOTAL	18.1510 acres	86.8490 acres
UPLANDS ZONE	18.1510 acres	81.3916 acres
0%-15% SLOPES	13.527 acres	57.3136 acres
15%-25% SLOPES	3.796 acres	13.1089 acres
40%	1.5184 acres	5.2436 acres
25%+ SLOPES	.828 acres	10.9691 acres
20%	.1656 acres	2.1938 acres
NET USABLE AREA	15.211 acres	64.751 acres



15%-25% SLOPES

25%+ SLOPES

PROPERTY LINE

CREEK CENTERLINE

100 YEAR FLOOD PLAIN

RIDGE LINE



(IN FEET)
1 inch = 500 ft.

SITE SLOPES

PFLUGER ASSOCIATES
ARCHITECTS/PLANNING CONSULTANTS

COLORADO CROSSING
AUSTIN, TEXAS 78704

215 SOUTH LAJAR
512 / 476-0048



MARTINEZ & WRIGHT ENGINEERS, INC.

TWIN TOWERS
1106 CLAYTON LAKE
SUITE 400 W
AUSTIN, TEXAS 78723

EXHIBIT 6.1 SCALE: 1"=500'

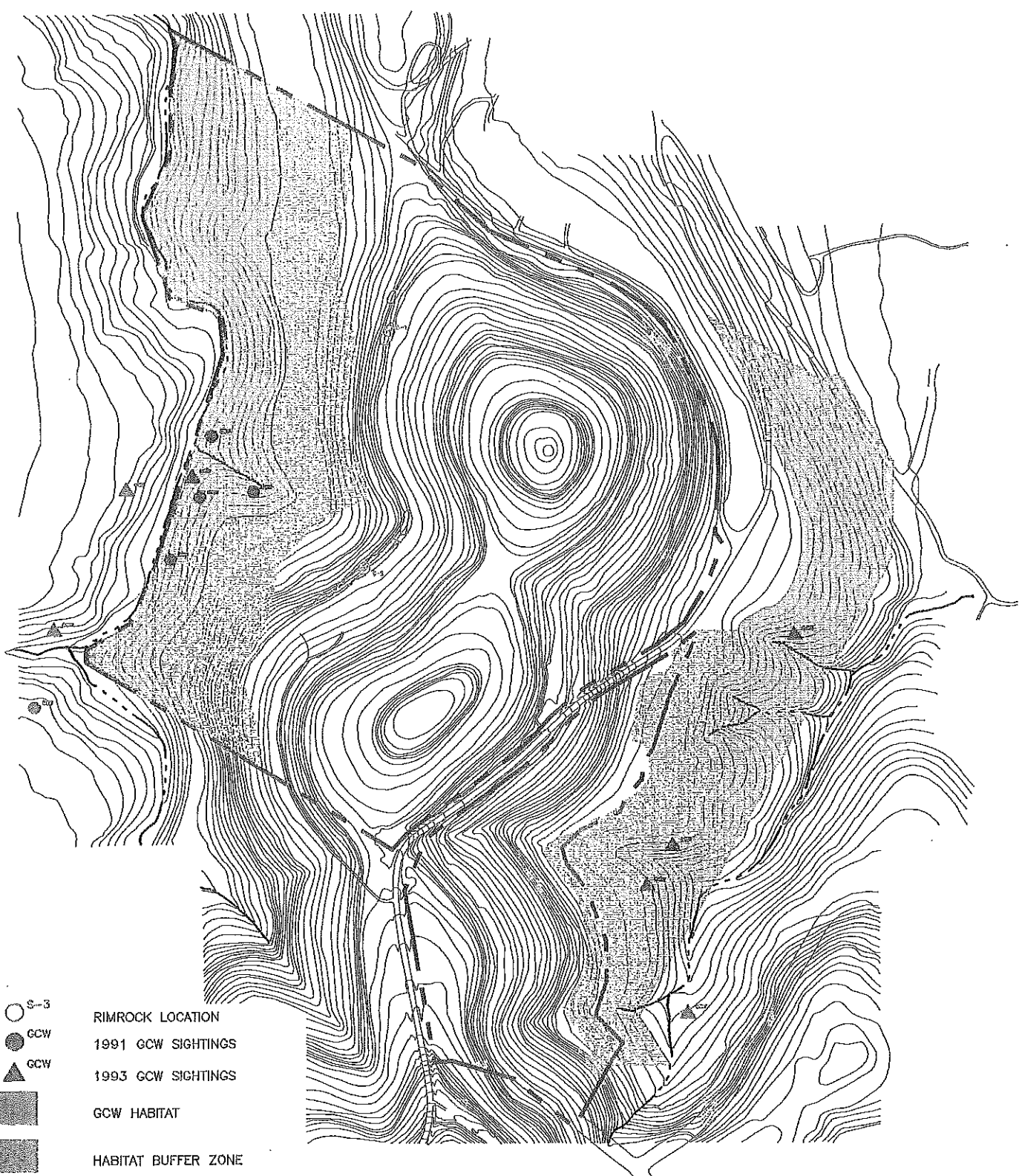
DATE 12/11/95

**ENDANGERED SPECIES & CRITICAL
ENVIRONMENTAL FEATURES**

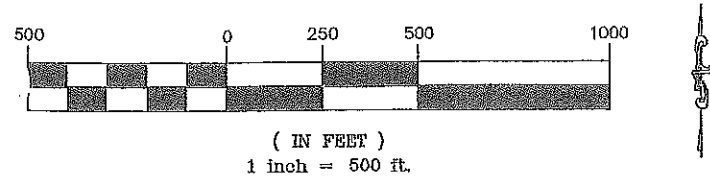
ENDANGERED SPECIES AND CRITICAL ENVIRONMENTAL FEATURES


Horizon Environmental Services, Inc., has prepared an Environmental Assessment as part of a study for the EISD with regard to the COA's Comprehensive Watershed Ordinance. This report states that three critical environmental features were located during Horizon's field reconnaissance on the secondary school site. They also report that since the property is in the Glen Rose geologic formation it is not likely to have sink holes, caves or recharge features. The property is not in the Edward's Aquifer Recharge Zone.

Portions of the sites are habitat for endangered bird species. Exhibit 7.1, Endangered Species and Critical Features shows the areas of concern. In addition, the Horizon Environmental Services, Inc. study recommends that because of the endangered species habitat, "exterior construction should be restricted to the non-nesting season (1 August to 1 March) within 1,000 feet of the canyon habitat areas". Horizon has also noted that there should be a 250 foot buffer zone with no clearing or disturbance adjacent to good-quality canyon habitat areas. The proposed configuration of the 8/9th grade center site indicates the location of practice fields and tennis courts within the 250 foot habitat buffer zone. Consultation with the U.S. Department of the Interior Fish and Wildlife Service will be necessary to determine the exact configuration of the buffer zone. If the practice fields cannot be located outside of the zone, an application to the Fish and Wildlife Service for a 10A permit would be required.



- S-3 RIMROCK LOCATION
- GCW 1991 GCW SIGHTINGS
- ▲ GCW 1993 GCW SIGHTINGS
- GCW HABITAT
- HABITAT BUFFER ZONE
- PROPERTY LINE
- - - CREEK CENTERLINE



ENDANGERED SPECIES & CRITICAL FEATURES	
PFLUGER ASSOCIATES ARCHITECTS/PLANNING CONSULTANTS	
<small>COLORADO CROSSING AUSTIN, TEXAS 78704</small>	<small>215 SOUTH LAMAR 612 / 476-4000</small>
	<small>TWIN TOWERS 1105 CLAYTON LANE SUITE 400 W AUSTIN, TEXAS 78723</small>
MARTINEZ & WRIGHT ENGINEERS, INC.	
EXHIBIT 7.1	SCALE: 1"=500' DATE 12/11/95

SITE DEVELOPMENT PROGRAM

GRAPHIC 8A

EISD FACILITY AND SITE DEVELOPMENT PROGRAM
(RIVER HILLS ROAD SITE - LARGE TRACT)

FACILITY PROGRAM REQUIREMENTS

1. NEW 8/9 SCHOOL - SIZED INITIALLY FOR 1500 STUDENTS WITH A BUILDING CORE SIZED FOR 2000 STUDENTS.
2. BUILDING EXPANSION REQUIRED TO ACCOMMODATE 500 ADDITIONAL STUDENTS.
3. BUILDING EXPANSION AREA (IF NECESSARY) TO CONVERT 8/9 SCHOOL TO A FUTURE HIGH SCHOOL FACILITY.
4. FUTURE 500-SEAT AUDITORIUM AND BLACK BOX THEATER.
5. FUTURE ATHLETIC FIELDHOUSE.
6. FUTURE NATATORIUM.

SITE DEVELOPMENT PROGRAM REQUIREMENTS

1. ACCESS ROADS AND ON-SITE PARKING REQUIRED TO ACCOMMODATE STAFF, STUDENT, BUS, DELIVERY, AND PUBLIC NEEDS AT A NEW 8/9 SCHOOL. (SEE APPENDIX #9 FOR ON-SITE PARKING NEEDS.)
2. ACCESS ROADS AND ON-SITE PARKING REQUIRED TO ACCOMMODATE STAFF, STUDENT, BUS, DELIVERY, AND PUBLIC NEEDS IF THE FACILITY IS EXPANDED OR CONVERTED TO A FUTURE HIGH SCHOOL FACILITY. (SEE APPENDIX #9 FOR ON-SITE PARKING.)
3. ATHLETIC COMPLEX DEVELOPED INITIALLY FOR AN 8/9 SCHOOL BUT EXPANDABLE TO MEET THE NEEDS OF A FUTURE HIGH SCHOOL FACILITY. THIS COMPLEX INCLUDES THE FOLLOWING:
 - o SOCCER
 - o FOOTBALL / TRACK AND FIELD WITH SEATING
 - o BASEBALL STADIUM WITH SEATING
 - o TWO PRACTICE FIELDS
 - o SOFTBALL FIELD WITH SEATING
 - o 8 TENNIS COURTS
4. ON-SITE WASTE DISPOSAL SYSTEM.
5. ON-SITE POTABLE WATER SYSTEM (NEW WATER WELLS).
6. ON-SITE FIRE PROTECTION SYSTEM.

SITE DEVELOPMENT PROGRAM

PFLUGER ASSOCIATES
ARCHITECTS/PLANNING CONSULTANTS

COLORADO CROSSING
AUSTIN, TEXAS 78704

213 SOUTH LAMAR
512 / 479-4040



MARTINEZ & WRIGHT ENGINEERS, INC.

TWIN TOWERS
1105 CLAYTON LANE
SUITE 400 W
AUSTIN, TEXAS 78723

EXHIBIT 8.1

SCALE:

DATE 12/11/95

GRAPHIC 8B

**EISD FACILITY & SITE DEVELOPMENT PROGRAM
(RIVER HILLS ROAD SITE - SMALL TRACT)**

OPTION A

FACILITY PROGRAM REQUIREMENTS

1. NEW ELEMENTARY SCHOOL SIZED FOR 850 STUDENTS

SITE DEVELOPMENT PROGRAM REQUIREMENTS

1. ACCESS ROADS AND ON-SITE PARKING REQUIRED TO ACCOMMODATE STAFF, BUS, DELIVERY AND PUBLIC NEEDS AT THE NEW ELEMENTARY SCHOOL.
2. ON-SITE WASTE DISPOSAL SYSTEM.
3. ON-SITE POTABLE WATER SYSTEM.
4. ON-SITE FIRE PROTECTION SYSTEM.

OPTION B


FACILITY / SITE PROGRAM REQUIREMENTS

1. NEW DISTRICT WAREHOUSE FACILITY.

OPTION C

FACILITY / SITE PROGRAM REQUIREMENTS

1. NEW DISTRICT BUS PARKING DEPOT FOR 25 BUSES.

SITE DEVELOPMENT PROGRAM		
PFLUGER ASSOCIATES ARCHITECTS/PLANNING CONSULTANTS		
<small>COLORADO BRIDGING AUSTIN, TEXAS 78764</small>	<small>213 SOUTH LAHAR 512 / 478-4040</small>	
	TWIN TOWERS 1105 CLAYTON LANE SUITE 400 W AUSTIN, TEXAS 78723	
MARTINEZ & WRIGHT ENGINEERS, INC.		
EXHIBIT 8.2	SCALE:	DATE 12/11/95

8/9 SCHOOL DEVELOPMENT OPTION

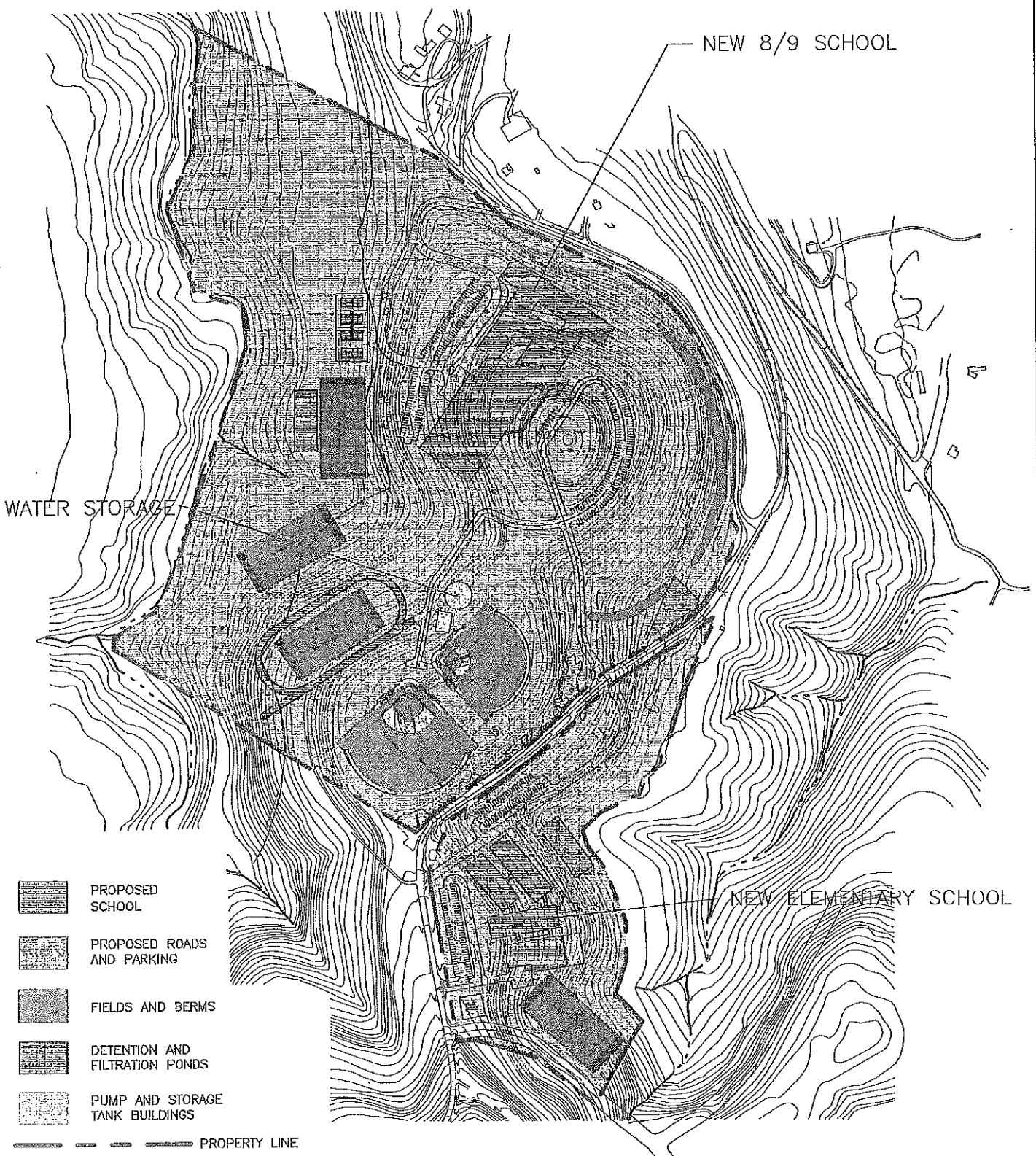
8/9 SCHOOL DEVELOPMENT OPTION

Development of the 8/9 school campus requires site access and building considerations. Site access is limited on the south end of the site due to limited visibility up and down River Hills Road. Only two points of access should be developed initially. The first is from the center section of the property from River Hills Road and the second is from the south end of the property from Taylor Road. These two points of access should be divided to separate the student vehicle traffic from the bus/service vehicle traffic.

The site has a high degree of slope which requires substantial cut and fill to level areas for development. Two hill tops occupy the uppermost portions of the site. Adjusting the grades on the uppermost portion of these hill tops provided most of the land area needed to develop the site. The site was modified to accommodate three key site improvement features: buildings, parking, and play fields. Although level areas are desirable for all three, the buildings and parking areas can be developed on sloped areas; however, play fields require relatively flat areas.

The buildings accommodate the slopes by stepping down the hill side. Transitions from the upper site levels to the lower site levels is accomplished by designing the 8/9 facility with multiple stories. The main entrance to the school is on the second level on the southeast side. The lower level can be accessed from the bus drive on the west side. The parking and drives can transition the slopes by terracing levels of parking. Since the play fields require the






greatest amount of cut and fill work, it was important to locate these improvements in the areas with the least slope. Critical environmental features on the west side of the site support the development of improvements in the center and eastern portions of the site. The physical education portion of the building is located in the center of the play fields. The parking areas radiate from the school and are located in close proximity to the competition athletic fields to provide minimum travel distance from parking to buildings and events.






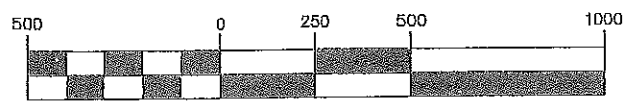
NEW 8/9 SCHOOL

WATER STORAGE


NEW ELEMENTARY SCHOOL

-  PROPOSED SCHOOL
-  PROPOSED ROADS AND PARKING
-  FIELDS AND BERMS
-  DETENTION AND FILTRATION PONDS
-  PUMP AND STORAGE TANK BUILDINGS

-  PROPERTY LINE
-  CREEK CENTERLINE
-  HABITAT PROTECTION LINE



(IN FEET)
1 inch = 500 ft.

8/9 SCHOOL DEVELOPMENT OPTION	
PFLUGER ASSOCIATES ARCHITECTS/PLANNING CONSULTANTS <small>COLORADO CROSSING AUSTIN, TEXAS 78704</small> <small>215 SOUTH LAHAR 512 / 475-2520</small>	
	<small>TWIN TOWERS 1105 CLAYTON LANE SUITE 400 W AUSTIN, TEXAS 78723</small>
MARTINEZ & WRIGHT ENGINEERS, INC.	
EXHIBIT 9.1	SCALE: 1"=500' DATE 12/11/95

**FUTURE 2000 STUDENT SECONDARY
SCHOOL DEVELOPMENT OPTION**

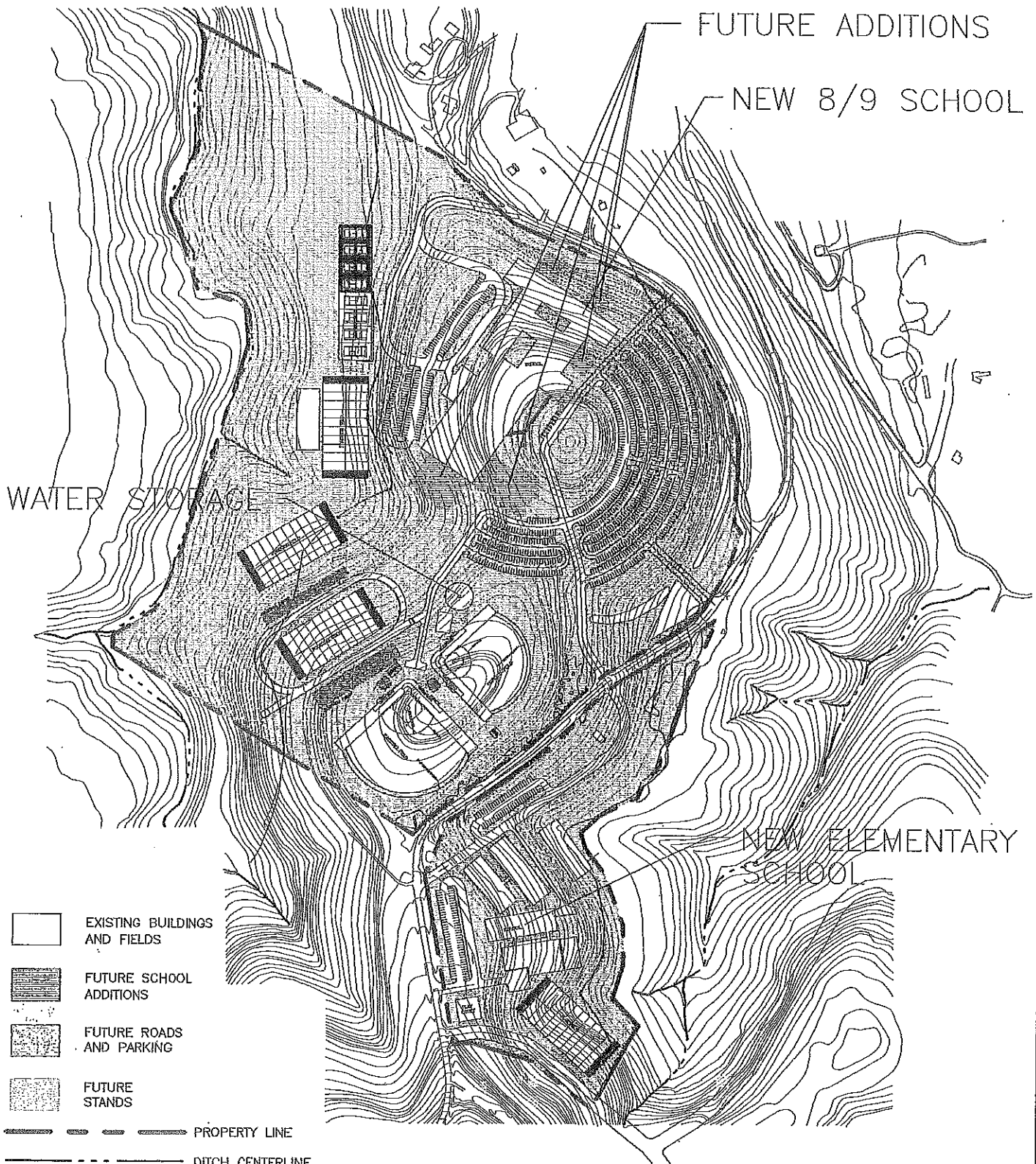
FUTURE 2000 STUDENT SECONDARY SCHOOL DEVELOPMENT OPTION








In order to consider converting the 8/9 School into a 2000 student secondary school facility, it is imperative to identify the key components that will be required for a secondary program. Some of these components include additions to accommodate increased enrollment, additional curriculum programs, parking, and play field improvements.

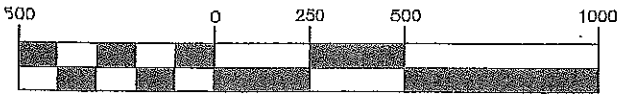
The 8/9 School will be designed with a 2000 student core capacity; however, classroom additions would need to be developed to accommodate the increased student capacity (500 students) and the additional curriculum topics that may be offered. It is anticipated that additional space will be needed for General Learning Classrooms, Science Lab/ Lecture Classrooms, Business and Accounting Classrooms, Art, Speech/Drama, Journalism/Yearbook, Restrooms, Storage, Mechanical, Athletics/PE, and General Circulation. Space for each of these needs must be allocated on site for future development.

The placement of the football field takes advantage of the natural slopes of the site to provide upper or mid-level access to the grandstands on the home side of the field. The location of the baseball/softball fields in proximity to the football stadium allows for shared use of restrooms, concessions, and ticket operations.


Based on the increase in parking and automobile circulation required for upper grade levels of a 2000 student school facility, additional access to and from the parking will be provided back to River Hills Road.



-  EXISTING BUILDINGS AND FIELDS
-  FUTURE SCHOOL ADDITIONS
-  FUTURE ROADS AND PARKING
-  FUTURE STANDS
-  PROPERTY LINE
-  DITCH CENTERLINE
-  HABITAT PROTECTION LINE



(IN FEET)
1 inch = 500 ft.

FUTURE 2000 STUDENT SECONDARY DEVELOPMENT OPTION	
PFLUGER ASSOCIATES ARCHITECTS/PLANNING CONSULTANTS <small>COLOBARD CROSSING AUSTIN, TEXAS 78704 318 SOUTH LAHAR 612 / 476-2340</small>	
 MARTINEZ & WRIGHT ENGINEERS, INC.	<small>TWIN TOWERS 1105 CLAYTON LANE SUITE 400 W AUSTIN, TEXAS 78725</small>
EXHIBIT 10.1	SCALE: 1"=500' DATE 12/11/95

SITE UTILITIES

SITE UTILITIES

DOMESTIC WATER DEMAND

The proposed 1,500 student 8/9th grade center, expandable to 2,000 students, will require, ultimately, a faculty of approximately 180 giving a maximum combined total of 2,180 persons on site. Based on actual water usage at West Lake High School, this would require a 1,151,040 gallons per month or 36,624 gallons per day average equating to 49,922 gallons per school day (22/30).

If a primary (elementary) school were constructed on the adjacent tract for 850 students and a faculty of approximately of 87 for a total of 937 persons, this would require a water usage of 408,157 gallons per month or 13,605 gallons per day average, or 18,552 gallons per school day. The domestic water demands listed above may be reduced somewhat depending on the methods provided for wastewater treatment.

FIRE DEMAND

There are no State Fire Marshall fire demand standards for rural school buildings. The Insurance Service Office (ISO), has key ratings for insurance fees that are charged for replacement of fire damaged buildings. Insurance ratings can be reduced by improvements to the fire protection system or to building standards.

Legislation adopted in September 1992 requires that school districts adopt a building code for use when designing buildings within the district. Senate Bill 1 readopted this requirement in May, 1995 as part of sub-chapter G, School Facilities, Sec. 42.352. As a result of this legislation, Eanes Independent School District Adopted the Uniform Building Code for its rural area development.

Water supply for fire protection may need to provide 3,500 gallons per minute from hydrants within a proximity of 300 feet of any protected structure. When flowing at this rate, the residual line pressure will need to be not less than 20 psi. The duration for this

flow rate would be 3 hours. This equates to a storage demand of 630,000 gallons. Where the buildings are protected by an approved automatic sprinkler system, fire flows may be reduced by 50%. This would then require 315,000 gallons of storage. The project location is served by West Lake Volunteer Fire Department and has a response time of approximately 6 minutes. Ce-Bar Volunteer Fire Department (San Juan Drive) provides back up to this location as needed. The Fire Official in charge of determining the amount of water for fire demand for rural areas is an official of EISD.

It is noted that West Ridge Elementary School and the nearby Middle School are provided with water service from LCRA's West Travis Co. Regional Water Supply System. This system was originally developed as part of the Uplands. With currently planned improvements, LCRA's capability to deliver water is estimated at 1,000 GPM in the proximity of the schools. They presently have ground storage tanks of 1,000,000 gallon capacity.

AVAILABILITY OF WATER

The school properties are within Travis County WC&ID No. 21. This Water District has, at the present time, no physical improvements. The Water District is controlled by the landowners within the district, one of whom is EISD. At the present time, one of the landowners is attempting to negotiate provisions for Water District No. 18 to sell water to WC&ID No. 21, and then develop a water storage facility and infrastructure for water distribution. These proposed improvements are not in the control of EISD and the timing and necessary agreements make it difficult to predict the availability of a reliable and dependable public water supply source.

Water District 20 is adjacent and east of the project site. It contains a subdivision known as Rob Roy on the Lake. This District cannot serve into Water District 21 without annexation and other legal considerations which are beyond the scope of this investigation. Water District 20 has an elevated storage tank of 250,000 gallons and may be capable of providing domestic service to the school facility. There is some indication that the delivery infrastructure available can only deliver 1,500 gallons per minute under certain

conditions. No commitment can be obtained from Water District 20 due to the short timeframe of this study. However the fire storage needs of the schools probably cannot be met by Water District 20. Access to the Rob Roy on the Lake water system could be developed through property of EISD on the east side.

Other water sources in the proximity of the property are well sources supplying residential subdivisions. A search of deep wells in the area shows the potential of developing a supply of 30 gallons per minute per well as a strong possibility. This could produce at least the daily demand for the schools (70,872 gallons per day). Placed in the elevated storage tank, school day and fire demands can be met. Reduction in usage may also be possible with a recycle wastewater system as will be discussed herein.

TREATMENT OF WELL WATER

Two wells per site would need to be developed, each with the capability of 30 gallons per minute. This will give a back up to accommodate the maintenance needs of the pumps. The treatment systems will normally require chlorinating into and out of the storage tank.

DISTRIBUTION SYSTEM

The distribution system will provide for a looped fire line of at least 8" diameter to provide services to each of the hydrants. Irrigation, if needed, can be taken from this looped fire line system. A water supply system will be developed for the domestic supply to each of the buildings from this loop. It would be possible to supply the adjacent elementary school with a similar system of fire and domestic services by construction of mains across River Hills Road.

ALTERNATIVES TO ELEVATED STORAGE TANK

The elevated storage tank needed for the project must be capable of maintaining 60 psi static pressure. This would require a height above the protected structures of 140 feet for the 630,000 gallons. The elementary school on the adjacent tract is at a lower elevation

and will have higher static pressure. Depending on the exact elevations involved, the elementary school may require a pressure reducing valve. Alternatives to the elevated tank would include a ground storage tank with fire pumps, auxiliary power supply, and large hydropneumatic tanks for maintaining domestic pressure. Since this type of system is less reliable and requires more maintenance, the elevated tank system is more desirable. In addition, an elevated tank may be used by others in the proximity should EISD and others agree to participate in cost sharing methods of water distribution.

WASTEWATER TREATMENT

Wastewater treatment and disposal is subject to strict regulation by the Texas Natural Resources and Conservation Commission (TNRCC), The State Health Department, the City of Austin (COA), the Environmental Protection Agency (EPA), and the Austin-Travis County Health Department. Permit coordination with the Lower Colorado River Authority (LCRA) will be required if surface discharge for wastewater is considered. The sites naturally drain into normally dry creeks which are direct tributaries to Lake Austin. These creeks are developed by residential and some commercial units as they enter into Lake Austin. Lake Austin eventually feeds into Town Lake which is the drinking water source for the COA. The COA, in other similar applications for a wastewater discharge permit, has objected to any discharges which are not of drinking water quality.

Nearby wastewater disposal systems are septic tanks and drainfields. The COA, at its facility at City Park across Lake Austin collects its wastewater in a holding tank and trucks it periodically to a City Disposal facility. Regulatory authorities discourage the use of septic tank and drain fields where the disposal is greater than 2,000 gallons per day. The minimum amount of wastewater generated by the schools will be 40,286 gallons per day for the 2,000 student facility and 14,285 gallons per day for the elementary school. This represents approximately 90% of the water usage on an average school day basis.

Small package treatment plants are normally used for applications such as these. Their discharge quality (effluent) measured on standard wastewater strength characteristics of the following parameters:

Biochemical Oxygen Demand(5 Day)	BOD-5	mg/l
Total Dissolved Solids	TSS	mg/l
Total Nitrogen	N	mg/l
Total Phosphorus	P	mg/l
Fecal coliforms log10		Lbs/l
Flow		Gal/Day

A Treatment plant can be equipped with various unit designs to produce the quality of effluent desired. Normal domestic waste has a BOD-5 of 300 mg/l, TSS of 300 mg/l, P of 15 mg/l and Total Nitrogen of 300 mg/l. Normally an aerobic treatment unit would be used with a chlorinated discharge to the stream bed at an approved point. These systems can commonly produce 10 mg/l BOD-5, 10 mg/l TSS and 2 mg/l P discharges. However this will be unacceptable to the various regulatory authorities and a no discharge means of disposal must be developed. Since a No Discharge Permit will be required, storage and irrigation of the effluent in some manner is necessary. Sludge buildup from the treatment units will occur. This will require the removal and disposal of the sludge. It will be necessary to contract for this service and provide for tank truck removal.

It is possible to reduce the size of these facilities and the amount of domestic water needed by using a recycle system. In this system a treatment plant is capable of producing a highly polished effluent of 5 mg/l BOD-5, 5 mg/l TSS and 10 mg/l N. After sterilization, a portion of the effluent is then recycled to the toilets for reuse. In the case of the 2,000 student facility, instead of 40,286 gallons per day the discharge would be 9,900 gallons per day. The elementary school would discharge 1,870 gallons per day as opposed to 14,285 gallons per day. Based on the topography of the two sites it is possible to install one recycle wastewater system and combine the two flows. This will provide for a much reduced cost in wastewater treatment.

Should recycle systems be used, the domestic water needs would be reduced. Therefore, a total initial demand of 70,872 gallons per school day would reduce to approximately 28,074 gallons per school day for a savings of 42,798 gallons per school day. This would equate to a 21,935 gallons per school day demand for the west Campus and a 6,138 gallons per school day consumption on the east campus.

Regulatory agencies include the approval of the TNRCC for any process over 5,000 gallons per day and Austin-Travis County Health Department for units less than 5,000 gallons per day. In addition both agencies will be concerned with the use of recycle systems for schools, although there are precedents for these installations in the State.

WASTEWATER DISPOSAL

Due to all the concerns regarding the disposal of wastewater in the vicinity of Lake Austin, we would propose that a no-discharge system be used. One of the most promising systems of wastewater disposal is the use of a patented subsurface drip irrigation system. In principal, this system discharges in a sandy loam bed 18" thick with the use of small emitters. The discharge from the recycle wastewater system will have been exposed to ultraviolet radiation to kill coliform bacteria prior to discharge. The discharge is treated wastewater, the same as the recycle system. It is pumped from storage on a continuous timed bases so as not to saturate the disposal field. The emitters and the 115 micron plastic filters used in distribution system are cleaned periodically by a backflush pump system which returns to the treatment plant. Since the wastewater is very "clean" to start with, this system will not be a burden to the treatment plant. The size of the bed is expected to be based on .12 gallons per square yard. This would then require a total of 214,250 square feet of bed area. The two practice fields and the two base ball fields would be locations where this subsurface disposal system could be constructed.

Drip Irrigation Bed Sizing

Structure	Allowable Discharge (gal/day/ft*ft)	Discharge Rate (gal/day)	Minimum Drainfield Area (ft*ft)
Upper Grade School	0.12	10,793	179883
Elementary	0.12	2,062	34367
Combined	0.12	12,855	214250

Statistical Information Regarding Water and Wastewater River Hills Road School Feasibility Study

	Upper Grade School	Upper Grade School	Elementary	Combined 2000 + 850
Students	1,500	2,000	850	2,850
Faculty	135	180	87	267
Total	1,635	2,180	937	3,117

Water Usage

Gal/Month	823,559.00	1,098,066.00	408,157.20	1,506,223.20
Gal/30 Day	27,451.70	36,602.20	13,605.24	50,207.44
Gal/22 Day	37,434.10	49,912.09	18,552.60	68,464.69

Wastewater

Discharge	Upper Grade School	Upper Grade School	Elementary	Combined 2000 + 850
Gal/Month	634,133.10	845,510.82	314,281.04	1,159,791.86
Gal/30 Day	21,137.80	28,183.69	10,476.03	38,659.73
Gal/22 Day	28,824.20	38,432.31	14,285.50	52,717.81

Water usage for West Lake High School was used for estimating the proposed upper grade school. Water Consumption per Person was 16.79 gal/30 day avg.

Water usage for Eanes Elementary School was used for estimating the proposed elementary school. Water Consumption per Person was 14.52 gal/30 day avg.

Projected Use Rates at New Facilities

WW Discharge: Normal System & Conventional Fixtures	Upper Grade School 1500	Upper Grade School 2000	Elementary	Combined 2000 + 850
Gal/Month	540,655.50	720,874.00	253,154.00	253,154.00
Gal/30 Day	18,021.00	24,029.00	8,438.00	32,468.00
Gal/22 Day	24,575.30	32,767.00	11,507.00	44,274.00

**WW Discharge:
Recycle System &
Low Water Use
Fixtures**

Gal/Month	178,084.50	237,446.00	45,364.00	282,810.00
Gal/30 Day	5,936.30	7,915.00	1,512.00	9,427.00
Gal/22 Day	8,094.80	10,793.00	2,062.00	12,855.00

**Water Savings:
Recycle System**

Gal/Yr	4,350,852.0	5,801,136.00	2,493,480.00	8,294,616.00
	0			
Gal/Month	362,571.00	483,428.00	207,790.00	691,218.00
Gal/30 Day	12,085.70	16,114.27	6,926.33	23,040.60
Gal/22 Day	16,480.50	21,974.00	9,445.00	31,419.00

**Total Water
Consumption:
Recycle System**

Gal/Month	460,978.50	614,638.00	200,367.20	815,005.20
Gal/30 Day	15,365.95	20,487.93	6,678.91	27,166.84
Gal/22 Day	20,953.56	27,938.09	9,107.60	37,045.69

**Water Consumption
Per Person: Recycle
System**

Gal/Month	211.46	281.94	213.84	495.78
Gal/30 Day	7.05	9.40	7.13	16.53
Gal/22 Day	9.62	12.82	9.72	22.54

TELEPHONE AND COMMUNICATIONS

The project area is served by Southwestern Bell Telephone Company (SWBT). Based on historical data provided by the District, it would not be unreasonable to assume that 100 pair cables would be required for the 8/9th grade center and 50 pair for

the elementary school. ISDN-TI or fiber optic lines may be available to serve these sites in the future. Service is not presently available in the desired capacity on River Hills Road. Consequently reconstruction would be required. Reconstruction of existing lines would take approximately 4 months and would be provided by SWBT to the service point of the buildings at no additional cost to the District. The District would be required to provide the conduit and pull box systems into the main phone panels and to the various outlying buildings.

It is anticipated that telecommunications will be supplemented by provision of a cable television (CATV) capability. CATV cables would be run adjacent to those installed for telecommunications service.

ELECTRIC POWER SUPPLY

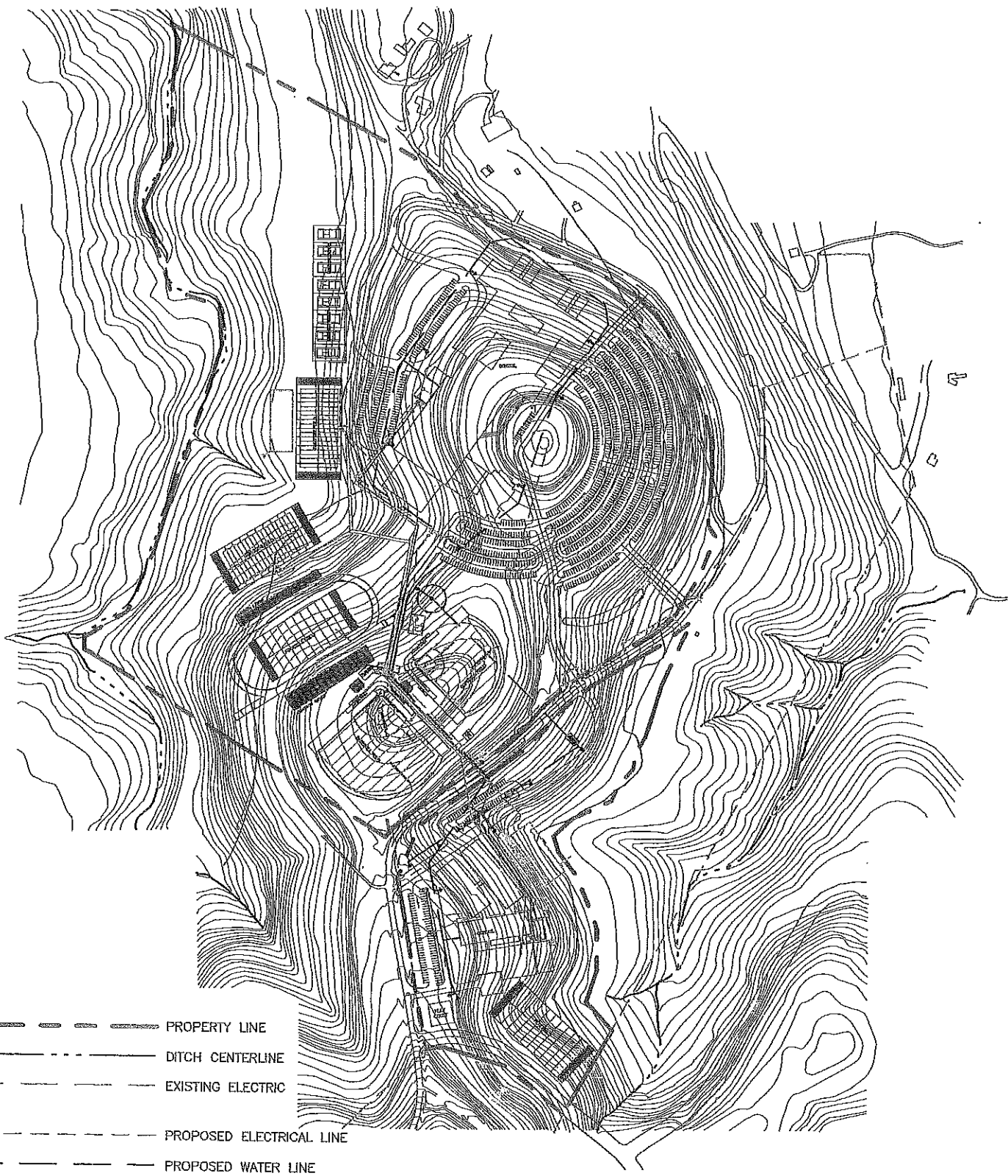
Electric Power is provided by the City of Austin and is immediately available adjacent to the sites. Power will be provided by an appropriately sized transformer for each of the schools sites via an underground primary service line. There will be Aid to Construction fees which will be determined by the size of the service. Typically these fees will be about \$10,000.00 for the 2,000 student facility and \$7,000.00 for the elementary school. Other charges include the relocation of power lines in River Hills Road due to widening. This will cost approximately \$1,000 per pole.

PROPANE GAS

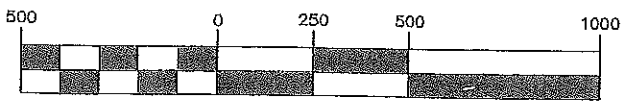
Propane gas may be required for use in science labs and similar specialized applications. It is anticipated that a tank system may be incorporated for propane gas storage.

FUEL OIL

An oil-fired system may be selected to provide heat and/or hot water to the proposed schools. If an oil-fired system is intended, an above-ground fuel oil storage tank should be provided.



- PROPERTY LINE
- DITCH CENTERLINE
- EXISTING ELECTRIC
- PROPOSED ELECTRICAL LINE
- PROPOSED WATER LINE
- PROPOSED WASTEWATER LINE
- PROPOSED WASTEWATER RECYCLE LINE



(IN FEET)
1 inch = 600 ft.

SITE UTILITIES

PFLUGER ASSOCIATES
ARCHITECTS/PLANNING CONSULTANTS
COLORADO CROSSING
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