

**DEVELOPMENT FEASIBILITY STUDY
FOR
203.621 ACRE – COLONY PARK TRACT**

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IN AUSTIN, TEXAS
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1.0 LOCATION

This feasibility study considers a 203.621 acre site which is located in the City of Austin, Travis County, Texas (Grids P-24 and P-25). The subject tract is located along Loyola Lane in east Austin. The tract is generally bordered by Loyola Lane to the south; Colony Loop Drive, Overton Elementary School, the Meadows of Walnut Creek to the west; the Austin & NW Railroad and the Schieffer tract to the north; and Lakeside Hills to the east. The tract is composed of Tract B, Tract C, and Tract D (as referenced on the Carson and Bush survey prepared July, 2001) out of the James Burleson Survey No. 19, Abstract No. 4 as conveyed to Austin Housing Finance Corporation in Document #2001119347 (**Appendix A**) and shown on **Exhibit 12**. The subject tract is located within the City of Austin Full Purpose jurisdiction.

The tract is currently zoned for single family residence (SF-2 and SF-3) and multi-family residence (MF-3), as shown on the zoning maps presented herein as **Exhibit 5**. See **Exhibit 1** for the site location map and **Exhibit 2** for an aerial view. The subject tract is shown on official Travis County Tax Maps 02_1831 and 02_1841, which are included as **Exhibit 3**. The majority of the tract lies within the Walnut Creek Watershed, with small portions in the northeast corner located in the Decker Creek Watershed and Elm Creek Watershed. The tract is not within the Edwards Aquifer Recharge Zone per the City of Austin Recharge Zone Map or the TCEQ Recharge Zone Maps. The Austin East and Manor, Texas USGS quadrangle maps with the subject tract location have been included as **Exhibit 4**.

2.0 EXISTING TITLE, SURVEYS AND STUDIES

The subject tract was deeded to current owner Austin Housing Financing Corporation as indicated in the General Warranty Deed (**Appendix A**) recorded as Document # 2001119347 of the Real Property Records of Travis County, Texas. Per Exhibit B of the warranty deed, and Schedule B of Title Commitment GF No. 01042105 (provided by AHFC), there are numerous exceptions and encumbrances to the subject tract. Only those exceptions identified in the warranty deed and title commitment are addressed with the survey and this report. The majority of these exceptions affect Tract A, the AISD tract, and thus do not affect the subject tract. Those that do affect the subject tract include a Koch Refining Company pipeline easement,

various drainage and utility easements, and mineral reservations. The mineral reservations are set out in Volume 515, Page 68 and Volume 2088, Page 519 of the Deed Records of Travis County, Texas. The mineral reservations in Volume 515, Page 68 convey 1/16 of all oil, gas, and all other mineral royalties to the Federal Land Bank of Houston. The mineral reservations in Volume 2088, Page 519 grant one half of all oil, gas, and other mineral mining, drilling, and exploration rights to H.C. and Alice Barnes and their heirs and assigns. Other various public utility, storm sewer, drainage, lateral support, and wastewater easements dedicated to the City of Austin are also noted.

The title survey prepared by Zamora-Warrick and Associates, LLC (**Exhibit 12**) indicates those exceptions that affect the subject tract, and include the following:

- Item 6. - pipeline and electric line easement dedicated to the City of Austin (Vol. 3654, Pg. 193) – This easement bisect Tracts B and C, but **does not affect** the subject tract as title is vested in the City of Austin per Vol. 5000, Pg. 1992, and is for the purpose of maintaining existing Austin Energy overhead electric transmission lines.
- Item 14. - 20' wastewater easement dedicated to the City of Austin (Vol. 13035, Pg. 457) – This easement is located on the eastern end of Tract B and is for the purpose of maintaining an existing 12" wastewater line.
- Item 15. - 80' temporary working space easement dedicated to the City of Austin (Vol. 13035, Pg. 452 and Vol. 13344, Pg. 54) – This easement was for the purpose of constructing the 12" wastewater line located in Item 14. It needs to be verified that this easement can be terminated.
- Item 8. - 15' public utility easement dedicated to the City of Austin (Vol. 4729, Pg. 1637) – This easement is located on Tract D and is for the purpose of maintaining and existing 8" water line.
- Item 8. - 15' public utility easement dedicated to the City of Austin (Vol. 4729, Pg. 1637) – This easement is located along the western boundary of Tract D and is for the purpose of maintaining and existing 12" wastewater line.
- Item 13. - 10' lateral support easement dedicated to the City of Austin (Vol. 12691, Pg. 1198) – This easement is located along Loyola Lane at the southeast corner of Tract D and is for the purpose of maintaining a retaining wall / culvert headwall for the adjacent roadway.

- Item 11. - open drainage ditch or enclosed storm sewer easement dedicated to the City of Austin (Vol. 12691, Pg. 1191) – This easement is located at the southeast corner of Tract D and is for the purposed of maintaining an existing culvert approach and open channel.
- Item 7. – pipeline easement dedication to Koch Refining Company (Vol. 11090, Pg. 367 and Vol. 11112, Pg. 40) – This easement is located along the western boundary of Tract B is for the purpose of maintaining an existing pipeline carrying refined gasoline to a distribution facility located north of the subject tract on Johnny Morris Road.

3.0 SUBJECT PROPERTY CHARACTERISTICS

3.1 EXISTING SITE USE/TOPOGRAPHY

The subject tract is currently vacant and is zoned for single family and multi-family use. The tract consists of partially wooded rangeland with site terrain that can be characterized as of rolling slopes. The slopes are generally between 2.0% and 15.0%, with some areas greater than 15.0%, and run generally from north to south. Vegetation consists mainly of underbrush with a significant amount of scattered trees. The tract also has large areas of significant erosion in the center portions of the tract. Evidence of this erosion dates back as early as 1951, as shown on aerial photos provided by Horizon Environmental Services, Inc. The subject tract will have approximately 2,500 feet of roadway frontage along Loyola Lane on the south boundary.

3.2 SOIL SURVEY

According to the Soil Conservation Service (SCS) Soil Survey of Travis County, Texas, the soil types located on the subject tract (**Exhibit 6**) are Burleson clays (BsB), Ferris-Heiden complex (FhF3), Heiden clays (HeC2), Heiden gravelly clays (HgF2), Houston Black clays (HnA and HnB), Houston Black gravelly clay (HoD2), and Trinity clays (Tw). Burleson clays consist of dark gray and gray clay underlain by pale brown silty clay. Burleson clays occur on foot slopes and on high, irregularly shaped ridges and slopes range from 1 to 2 percent. Ferris-Heiden

complex soils occur on rolling to hilly topography and have slopes ranging from 8 to 20 percent with severely eroded areas. Ferris soils make up 60 percent of these areas and Heiden soils the remaining 40 percent. Ferris clays consist of light olive-gray clay underlain by pale yellow silty clay and Heiden clays consist of dark grayish-brown clay underlain by yellow silty clay. Heiden clays occur on complex side slopes and have slopes ranging from 3 to 5 percent. Erosion hazard is severe for Heiden clays. Heiden gravelly clays occupy rolling to hilly topography with slopes ranging from 8 to 20 percent. The surface layer is dark grayish-brown gravelly clay underlain by a similar layer that is 60 percent chert gravel. The underlying layer is composed of grayish-brown clay with pockets of chert gravel. Houston Black clays consist of very dark gray and dark gray clay underlain by dark gray clay with mottles of olive yellow. Houston Black clays have slopes ranging from 0 to 3 percent and occur on smooth ridges and foot slopes. Erosion hazard is moderate. Houston Black gravelly clays occur on ridges and side slopes. Chert rock covers 30 to 75 percent of the surface in most areas. A representative profile consists of a surface layer of dark gray gravelly clay overlaying a layer of gray clay with pockets of chert gravel. Slopes range from 2 to 8 percent. Trinity clays are found on flood plains where slopes are dominantly 0.5 percent. The soil profile for Trinity clays is representative of the series: dark gray clay underlain by layers of very dark gray clay and light olive-gray silty clay.

Per a Preliminary Geotechnical Report prepared by HVJ Associates, Inc. for the Colony Park subdivision (**Appendix F**), dark gray clay, brown silty clay, and gray gravelly clay were found at the subject tract. This is consistent with typical clayey soil conditions associated with geology in the eastern portion of the Austin area. The geotechnical firm obtained 20 soil samples by boring approximately to a depth of twenty feet. Based on that report, these soils are primarily fat clays exhibiting high shrink / swell potential. The specific affects of these soils on pavement and foundation designs can be found in that report.

3.3 CRITICAL ENVIRONMENTAL FEATURES

Per the City of Austin Environmental Site Assessment prepared by Horizon Environmental Services, Inc., two potential wetland critical environmental features (CEF's) were observed on the subject tract. Both potential CEF's are located on the southeastern portion of the subject tract and are labeled as W-1 and W-2 on Figure 1 of the Horizon report, both of which are

wetland features as defined by the City of Austin. Note that these features are not necessarily Army Corps of Engineers defined wetlands. CEF W-1 is approximately 340 feet long and 8 feet wide and is located within an on-site drainage area. CEF W-2 was observed approximately 1,500 feet southwest of feature W-1 and has approximate dimensions of 165 feet wide by 300 feet long. Horizon believes feature W-2 is a stock tank that is no longer functional. No new growth of wetland vegetation was observed and it is Horizon's opinion that changes to the hydrology of the area have occurred and that feature W-2 will unlikely continue to function as an herbaceous wetland. Horizon's Environmental Site Assessment also includes descriptions of site topography, soils, geology, vegetation, and existing land use. The City of Austin Environmental Assessment is included with this report as **Appendix C**.

4.0 SURROUNDING PROPERTY CHARACTERISTICS

4.1 EXISTING ZONING & LAND USE

The western portions of the subject tract are bordered by Tract A of the 2001 Bush and Carson survey (zoned P-Public), also known as the Austin Independent School District (AISD) tract, Colony Park Section I, Phases 4A and 4B, and Sections Five and Six of The Meadows of Walnut Creek (all zoned SF-2). Colony Park Section I, Phases 4A and 4B are part of an existing single family subdivision developed in 1983. The Meadows of Walnut Creek Sections Five and Six are part of an existing single family subdivision developed in 1984. The AISD tract is owned by the City of Austin and is currently under construction for AISD as the Overton Elementary School and City of Austin Turner Roberts Recreation Center, per an approved site plan on file with the City (case no. SPC-06-0046CX). The Turner Roberts Recreation Center was previously known as the Colony Park Recreation Center (case no. SPC-03-0021C).

The northern portion of the subject tract is bordered by a segment of the Southern Pacific Railroad and a mostly undeveloped tract owned by Clarence E. Schieffer and Ralph E. Parker (zoned SF-2). From the aerial photo, it appears that the Schieffer-Parker tract has one single family home and three accessory structures constructed on it. The eastern portion of the subject tract is bordered by the existing Colony Park Hills Section 1-A subdivision (zoned SF-3), the existing Lakeside Phase 1-B subdivision (zoned SF-3), and the existing Lakeside Hills

Phase 3-A subdivision (zoned MF-2). From a search of Travis Central Appraisal District (TCAD) records, it appears that the homes in Colony Park Hills Section 1-A were constructed between 1974 and 1976. The average lot size is 65' and the average home size is approximately 1,300 square feet. TCAD records also show that the Lakeside Phase 1-B subdivision was mostly constructed between 1977 and 1978 and average home sizes are 1,250 square feet. The average lot size in the Lakeside Phase 1-B subdivision is 65'. A search of TCAD records also shows that the Lakeside Hills Phase 3-A subdivision has an average lot size of 70'. The Lakeside Hills Phase 3-A subdivision consists mainly of duplexes with an average size of 1,770 square feet.

The southern portion of the tract is bordered by Loyola Lane. Loyola Lane is a four lane divided arterial. The western portions of the subject tract are bordered by the AISD tract (zoned P-Public) and the existing Meadows of Walnut Creek Section 5 and Section 6 subdivisions (zoned SF-2). As previously mentioned, the AISD tract is currently under construction. From a search of TCAD records, it appears that all the homes in Walnut Creek Sections 5 and 6 were constructed between 1996 and 1998. The average lot size is 55' and the average home size is 2,085 square feet.

4.2 SURROUNDING PROPERTY DRAINAGE PATTERNS

Portions of the properties located to the north, east and west of the subject tract generally sheet flow towards the subject tract. The overall contributing drainage area is approximately three times the size of the subject tract. Portions of these surrounding properties are currently undeveloped but it is anticipated that upon development of these properties stormwater flows will be maintained at existing levels by detention per COA criteria. Runoff from these tracts will be diverted by berms or piped to existing or natural drainage channels. Stormwater flows ultimately drain to three tributaries of Walnut Creek located on the subject tract. Additional research to verify the developed condition drainage plans of the site to the south is on-going. However, conveyance of stormwater runoff from these areas for developed conditions will be required upon development of the subject tract.

Three tributaries of Walnut Creek pass through the subject tract. The westernmost tributary is identified on FEMA Flood Insurance Rate Map Panel No. 48453CO125E as Walnut Creek

Tributary No. 1. A City of Austin floodplain study has been performed on this tributary. The COA study extends to the north of Loyola Lane and ends east of the intersection of Colony Loop Drive and Ritchie Drive. The waterway continues along the western boundary of Tract B, but this reach was not included in the COA study. As stated in Section 4.1, the properties on either side of this tributary have been developed (the AISD tract, Colony Park Sec. 1, Phases 4A & 4B, and the Meadows of Walnut Creek Sections 5 & 6). It appears that the existing single family developments located along this tributary were developed at a time when water quality and detention were not required. However, the majority of the AISD tract drains to Walnut Creek Tributary No. 1 and water quality controls and detention were provided as part of this development. Two offline water quality ponds and an offline detention pond were provided for the portion of the tract that drains to Walnut Creek Tributary No. 1. A third online water quality pond was provided for the portion of the tract that drains to the tributary crossing the middle portion of the subject tract.

The tributary crossing the middle portion of the subject tract begins north of the subject tract, near the Walnut Creek/Decker Creek watershed boundary, crosses the entire tract, and extends south of Loyola Lane. With the exception of the AISD tract, all areas draining to this tributary are undeveloped. As mentioned above, an online water quality pond was built during construction on the AISD tract. An existing stock tank is also located online on the property north of the subject tract. The existing stock tank appears to provide some attenuation of peak flows for this tributary, but since it is not a permitted, engineered pond, it cannot be considered as a part of any drainage studies required for the subject tract. This tributary drains the majority of the subject tract and portions of the existing Lakeside Phase 1-B and Colony Park Hills 1-A subdivisions.

A smaller tributary drains approximately 22 acres located in the southeast corner of the subject tract. A portion of the drainage area for this tributary includes the developed portions of the existing Lakeside Hills Ph. 3-A and Colony Meadows Sections 1 and 2 subdivisions. No detention or water quality controls are currently provided for this tributary. All three of these tributaries are conveyed under Loyola Lane by existing culverts.

Label D.A. map and adjust trib names accordingly.

5.0 ZONING

5.1 EXISTING ZONING

As stated earlier in Section 1.0, the subject tract is located within the City of Austin's full purpose jurisdiction and is zoned for single family residence (SF-2 and SF-3) and multi-family residence (MF-2) per the following ordinances: 030306-Z-2, 810122-F, 870107-R and 760617-D. Zoning has been verified with the City of Austin and a zoning verification letter and Zoning map have been included in this study (**Exhibit 5**).

The SF-2 single family residence standard lot district is the designation for a moderate density single family residential use on a lot that is a minimum of 5,750 square feet. An SF-2 designation may be applied to a use in an existing single family neighborhood that has moderate sized lots or to a new development or single family housing on lots that are 5,750 square feet or more.

The SF-3 family residence district is the designation for a moderate density single family residential use and a duplex use on a lot that is a minimum of 5,750 square feet. This district designation may be applied to a use in an existing single family neighborhood with moderate sized lots or to a new development of family housing on lots that are 5,750 square feet or more. A duplex use that is designated as an SF-3 district is subject to development standards that maintain single family neighborhood characteristics.

The MF-2 multi-family residence low density district is the designation for a multi-family use with a maximum density of up to 23 units per acre, depending on unit size. An MF-2 district designation may be applied to a use in a multi-family residential area located near single family neighborhoods or in an area for which low density multi-family use is desired.

Per the City of Austin map of Neighborhood Planning Areas, dated November 2007, the subject tract is not located in an existing neighborhood plan area.

5.2 COMMERCIAL DESIGN STANDARDS

Additionally, the City of Austin has recently adopted *Subchapter E: Design Standards and Mixed Use* of the Land Development Code. These standards mostly affect commercial land uses, however there are some provisions that do affect residential uses. The Commercial Design Standards also provide for greater flexibility when developing a mixed use project that includes a residential component. The benefits of this type of project are not discussed within this report, but should the project include mixed use development, then a summary of these additional standards can be provided separately.

5.3 COMPATIBILITY STANDARDS

Based on the existing zoning and uses for the adjacent tracts, there would not be compatibility setbacks required on the SF-2 and SF-3 portions of the subject tract. However, the MF-2 portions, and any future rezoning of the subject tract for retail or commercial uses may require compatibility setbacks for the portions of the subject tract that border existing or proposed SF-5 or more restrictive tracts or uses. For purposes of identifying the need for potential compatibility setbacks, we have identified all properties, and their respective zoning districts, within 540' of the subject tract. The zoning for all tracts located within 540' feet of the subject tract is summarized in the table below:

Table 6.1: Zoning of Adjacent Tracts

TCAD ID	Prop. Owner	Zoning District	Legal Description	Location	Comment
0218310604	Gold A&A, Inc.	MF-2 & GR	53.513 Ac. of the James Burleson Survey No. 19, Abstract No. 4	S-SE of the subject tract	Undeveloped tract
0218310606	Rites of Passage Development I	SF-2	33.140 Ac. of the James Burleson Survey No. 19, Abstract No. 4	South of the subject tract	Undeveloped tract
0218310603	City of Austin	SF-2	2.188 Ac. of the James Burleson Survey No. 19, Abstract No. 4	SW of the subject tract	COA elec. Easement
0218310607	Westminster Falcon/Trinity, LLP	SF-3	64.699 Ac. of the James Burleson Survey, Abstract A75	SW of the subject tract	Undeveloped tract
Multiple	Multiple	SF-2 & SF-3	Park Place I subdivision	SW of the subject tract	Existing SF subdivision
0218310501	City of Austin	P	49.889 Ac. of the James Burleson Survey No. 19, Abstract No. 4	West of the subject tract	AISD Tract
Multiple	Multiple	SF-2	The Meadows of Walnut Creek Sec. 5	West of the subject tract	Existing SF subdivision

Multiple	Multiple	SF-2	The Meadows of Walnut Creek Sec. 6	West of the subject tract	Existing SF subdivision
0218410202	Ralph & Peggee Parker	SF-2	142.888 Ac. of the James Burleson Survey No. 19, Abstract No. 4	North of the subject tract	One SF residence
0218410203	Jose & Cynthia Gonzales	SF-2	3.282 Ac. of the James Burleson Survey No. 19, Abstract No. 4	NE of the subject tract	One SF residence
0218410217	Vincent & Minnie Padilla	SF-2	3.288 Ac. of the James Burleson Survey No. 19, Abstract No. 4	NE of the subject tract	Three SF residences
Multiple	Multiple	SF-3	Lakeside 1-B subdivision	East of the subject tract	Existing SF subdivision
Multiple	Multiple	SF-3	Colony Park Hills I-A	East of the subject tract	Existing SF subdivision
0218410301	Decker Lane Partners, LP	MF-2	Gardens at Decker Lake Lot 1, Block A	East of the subject tract	Existing apt. complex
Multiple	Multiple	MF-2	Lakeside Hills Phase 3-A	E-SE of the subject tract	Existing MF subdivision
Multiple	Multiple	MF-2	Colony Meadows Sec. 1	E-SE of the subject tract	Existing MF subdivision
Multiple	Multiple	MF-2	Colony Meadows Sec. 2	E-SE of the subject tract	Existing MF subdivision
0217380502	Sattar Investments, Inc.	GR	0.423 Ac. of the James Burleson Survey No. 19, Abstract No. 4	SE of the subject tract	Undeveloped tract
0217380501	New Century Investments, LLC	GR-CO	1.824 Ac. of the James Burleson Survey No. 19, Abstract No. 5	SE of the subject tract	Undeveloped tract
217380128	City of Austin	P	Lakeside Hills Phase 3-A Lot 1, Block B	SE of the subject tract	AFD Station #26
217380127	City of Austin	P	Lakeside Hills Phase 3-A Lot 2, Block B	SE of the subject tract	AFD Station #26
217380126	City of Austin	P	Lakeside Hills Phase 3-A Lot 3, Block B	SE of the subject tract	AFD Station #26
-	D&R Associates, Inc.	GR & GR-CO	Colony Meadows Sec. III, Ph. II	SE of the subject tract	SP-06-0006C

Particular attention should be paid to the tracts zoned as SF-2 and SF-3. Development of the subject tract adjacent to those zoning districts that includes commercial or retail uses will be required to abide by the applicable compatibility setbacks per Chapter 25-2 of the Land Development Code.

5.4 BUILDING SETBACKS/DENSITIES/HEIGHT

The following table summarizes the City of Austin Design Guidelines based on the three zoning classifications discussed in Section 5.0.

	Zoning Reg.		
	<u>SF-2</u>	<u>SF-3</u>	<u>MF-2</u>
Minimum Lot Size (square feet)	5,750	5,750	8,000
Minimum Lot Width	50'	50'	50'
Maximum Height	35'	35'	40' or 3 stories
Minimum Setbacks			
Front Yard	25'	25'	25'
Street Side Yard	15'	15'	15'
Interior Side Yard	5'	5'	5'
Rear Yard	10'	10'	10'
Maximum Impervious Cover	45%	45%	60%
Maximum Building Coverage	40%	40%	50%
Minimum Site Area/Dwelling Unit			
Efficiency	N/A	N/A	1,600
One Bedroom	N/A	N/A	2,000
Two or more Bedrooms	N/A	N/A	2,400

5.5 PIPELINE ORDINANCE

A gasoline pipeline has been located along the west/northwest boundary of the subject tract. The pipeline is owned by Koch Pipeline Company, L.P. and carries refined gasoline to a distribution center located north of the subject tract on Johnny Morris Road. A map showing the location of the gasoline pipeline is included as **Appendix G**.

The Koch pipeline is defined as a hazardous pipeline per Title 49, Code of Federal Regulations, Section 195.2. Per that definition, any new construction on the Colony Park tract is subject to section 25-2-516 (Development Near a Hazardous Pipeline) of the City of Austin Land Development Code. This section of the LDC prohibits a use requiring evacuation assistance in a structure intended for human occupancy (day care services, hospitals, medical offices, educational facilities, retirement housing, etc.) within 500 feet of a hazardous pipeline. New construction within 200 feet of a hazardous pipeline is prohibited unless the fire chief determines that the new construction has performance based design that provides a minimum one-hour period for occupant evacuation to a safe place in the event of a pipeline leak or fire or if the new construction incorporates a system for early detection and notification of a pipeline leak. New construction or excavation is not allowed within a restricted pipeline area. A restricted pipeline area is defined as an area within 25 feet of a hazardous pipeline and an area within a hazardous pipeline easement. Utilities that cross the restricted pipeline area, utility service connections, road, surface parking lots, or structures or excavation that the director determines do not disturb the pipeline or impede its operation are not prohibited within the restricted

pipeline area. Before roads, surface parking lots, or utility lines may be placed in a restricted pipeline area, certification by a registered engineer stating that the proposed construction activity and structure are designed to prevent disturbing the pipeline or impeding its operation must be delivered to the director.

6.0 ROADS, ACCESS AND PARKING REQUIREMENTS

6.1 EXISTING ROADS

Access to the subject tract will be provided from the existing Loyola Lane and the existing Colony Loop Drive from the east and west sides of the subject tract. Loyola Lane intersects with a major arterial (U.S. 183) which is a four-lane divided roadway with dedicated left turn lanes at the major intersections. Currently, the intersection of Loyola Lane and U.S. 183, located to the west of the subject tract, is signalized. Loyola Lane also intersects Decker Lane (F.M. 3177) to the east of the subject tract. Decker Lane is a four-lane undivided roadway with some stretches of the roadway having a continuous left-turn lane. The intersection of Loyola Lane and Decker Lane is also signalized at the current time.

Loyola Lane is a four-lane, divided street with a 120' right-of-way and is classified as a major arterial by the City of Austin. Arterials are designed to carry high volumes of through traffic and access is usually limited to intersections and major driveways. Colony Loop Drive will be extended to connect across the width of the subject tract, via ROW that has previously been dedicated to the City of Austin per Document #2001119349. Approximately 980 linear feet of this extension was completed with the Overton Elementary School project. Colony Loop Drive is a two-lane, undivided street with a 70' right-of-way and is classified as a neighborhood collector street by the City.

6.2 PROPOSED ROADS

The design of all new streets for a subdivision is subject to the City of Austin standards. Based on the zoning of the subject tract, we anticipate the need for construction of three types of streets: local streets, residential collectors, and neighborhood collectors. Local streets serve

abutting land use and traffic within a neighborhood and are not always continuous through a district. Per the City of Austin Transportation Criteria Manual (TCM), local streets for the SF-2 and SF-3 zoning districts have slightly different design criteria. For both zoning districts, a local street is used where the average daily traffic (ADT) count is less than 1,000 trips per day. A local street typically has a length less than 1,500 feet and the minimum curb basis is 10 feet. However, the design speed varies based on the zoning district. A local street may be designed for a 25 or 30 mph design speed in the SF-2 zoning district. In the SF-3 zoning district, a local street should be designed for a 30 mph design speed. A typical cross section for a local street in the SF-2 zoning district consists of a 30-foot face of curb to face of curb pavement section with a minimum of 50 feet of right-of-way. A typical cross section for a local street in the SF-3 zoning district consists of a 36-foot face of curb to face of curb pavement section with a minimum of 54 feet of right-of-way.

Collector streets intercept traffic from intersecting local streets and expedite the movement of traffic in the most direct route to arterials or other collector streets. Per the City's TCM, a residential collector is used where the ADT ranges from 500 to 3,000 vehicle trips per day. A residential collector typically has a length less than one mile with 300 foot spacing between intersections. Typical spacing between residential collectors is one quarter mile. The minimum tangent length between horizontal curves is 100 feet and the minimum curb basis is ten feet. A residential collector may be designed for a 30 or 35 mph design speed. A typical cross section for a residential collector consists of a 40-foot face of curb to face of curb pavement section with a minimum of 60 feet of right-of-way. A residential collector is typically used within the SF-1 through SF-6 or MF-1 zoning districts. Per the City's TCM, a neighborhood collector is used where the ADT ranges from 2,000 to 6,000 vehicle trips per day. A neighborhood collector typically has a length ranging from one to two miles with 500 foot spacing between intersections. Typical spacing between neighborhood collectors is one half mile. The minimum tangent length between horizontal curves is 100 feet and the minimum curb basis is ten feet. A neighborhood collector should be designed for a 35 mph design speed. A typical cross section for a neighborhood collector consists of a 44-foot face of curb to face of curb pavement section with a minimum of 64 feet of right-of-way.

Additionally, street and ROW widths will need to take into consideration any Transit Oriented Development or Traditional Neighborhood District requirements in order to provide adequate space for on-street parking, bus maneuverability, bike lanes, pedestrian walks, etc. The details

of these requirements can be determined once a proposed land use and land plan are prepared.

6.3 *PARKING*

Per the COA Land Development Code 25-6 Appendix A, two parking spaces are required per single family residence and four parking spaces are required per duplex residential unit for the portions of the tract zoned SF-2 and SF-3. For the portion of the subject tract zoned MF-2, one parking space is required per efficiency unit and one and a half spaces per one-bedroom unit. Each additional bedroom requires another half parking space (1BR -1.5sp; 2BR -2sp; 3BR -2.5sp). Typical parking spaces are 8.5 feet wide and 17.5 feet long, with a 27 foot wide travel way. Various other combinations of sizes are allowed depending on parking angle and space width. For the MF-2 tract, compact parking is allowed up to 15% of the total provided spaces, with typical dimensions of 7.5 feet wide and 15.0 feet long. Minimum widths for one-way travel ways are 12.5 feet, unless the travel way is for emergency access, which must have a minimum width of 15 feet. The minimum width for two-way travel ways is 25 feet. No more than a maximum of 15% grade slope is allowed. Table 9-1 from the Transportation Criteria Manual is included as **Appendix E**. There are no requirements for covered parking. There are no special requirements for detached carports and garages with regard to parking, though both are subject to any building setback requirements.

It should be noted that parking requirements for mixed use, retail and commercial sites vary based on the type of development. A complete analysis of the parking requirements for these potential uses will be completed during the conceptual planning phase of the project.

6.4 *TRANSPORTATION IMPACT ANALYSIS*

A Transportation Impact Analysis (TIA) will be required for any uses that generate 2,000 or more vehicle trips per day. A TIA will be prepared in accordance with City of Austin requirements during the conceptual planning phase of the project, once proposed land uses have been determined. The TIA will be required in conjunction with any rezoning application or Preliminary Plan application. Typically, if the TIA identifies intersections or street capacity

issues caused by the proposed project, the City will require that the developer either make the necessary improvements to eliminate the capacity issues, or post fiscal surety with the City for the developer's prorated share of the improvements. The City will then use that money at some time in the future to make the improvements. Since AHFC is a subsidiary of the City, it is not clear as to how the City may enforce this requirement should there be any improvements necessary.

6.5 ACCESSIBILITY STANDARDS

All public facilities will be required to comply with the Americans with Disabilities Act (ADA), the International Building Code (IBC), and the Texas Accessibility Standards (TAS), as enforced by the Texas Department of Licensing and Regulation (TDLR). All subdivision and public building plans will be required to be submitted to the TDLR for review and approval. TDLR's review is limited to those facilities considered public, which typically includes sidewalks in public ROW, public parks, or other public facilities. Within one year of constructing these improvements, TDLR will inspect the accessible facilities that were under their review and in many cases actually measure ramp and sidewalk slopes, to insure that all structures meet the standards. All structures not meeting standards will be required to be brought to standards, or a variance will have to be approved by TDLR.

Four and six foot sidewalks will be required to be constructed within the subdivision to be paired with ADA compliant sidewalk curb ramps at proposed street intersections. Sidewalks are required to be sloped at no more than 5% in the direction of travel with no more than 2.0% cross slope, as is typically required for the natural space between the back of curb and the property boundary. ADA curb ramps are typically 6-feet in length with the lower end matching the existing pavement and the higher end flush with the back of curb. ADA ramps typically have a slope of 8.33% for a six inch rise over six feet. Four-foot landing areas are also required at the ends of the proposed curb ramps.

7.0 PUBLIC TRANSPORTATION

7.1 BUS

The subject tract is serviced by two Capitol Metro Transportation Authority (CMTA) bus routes, the Colony Park Local Service Route and the Colony Park Flyer. The Colony Park Local Service Route runs all day and stops frequently. Midday the time between busses is approximately 15 minutes. At the beginning and end of the day, buses run every 30 minutes. This route's purpose is to provide service within the area. The Colony Park Flyer is a limited-stop route that provides quick service to and from downtown. It makes five trips from Colony Park in the morning and five trips to Colony Park in the evening. (Insert bus route graphic)

CMTA recommends the use of Colony Park Loop as a future bus route for the area. This will allow for bus service on both sides of the road with stops provided for riders coming and going from the area. Future coordination with CMTA planners will guide the design and engineering of all bus routes designated during the planning process. Impacts of bus routes on roadway design include appropriate drive lane width and turning radii as well as elimination of front-in angled parking along bus routes. In addition, identification of bus stop locations during the preliminary design phase will allow for appropriate material selection and roadway articulation in order to make the bus stops inviting and safe.

7.2 RAIL

The subject tract abuts the Southern Pacific rail line which connects Elgin and Manor to downtown Austin. It is less than one mile in proximity to the MoKan Corridor which connects Round Rock to downtown. Both lines have been designated by Capital Metro Rail as having potential future service. Under this classification, a referendum is required to convert these lines to transit. CMTA has acquired two adjacent tracts of land on Loyola Lane that link the MoKan and Southern Pacific lines. This tract is being assessed as a possible location for a future rail transfer station connecting the Southern Pacific and MoKan Corridor lines. Despite the common planning convention that establishes a 1/4 mile as the maximum walking distance for pedestrians, a 2007 study at San Joseph State University has found that for rail transit

destinations, people will walk up to ½ a mile. This station would be approximately one mile from the heart of the subject tract and therefore not pedestrian accessible from Colony Park. This distance would necessitate ease of bicycle and bus transportation within the site to and from Loyola Lane which would then be used to access the station. (Insert ½ mile radius graphic) (source)

7.3 BIKE

The Austin Bicycle Route Map, published by the City of Austin Bicycle and Pedestrian Program in 2007, rates established bicycle routes by their assessed ease of use. Loyola Lane, running along the Southern perimeter of the site, is a recommended route and is designated as having high ease of use. This designation is generally based upon the criteria of having low traffic volume or, on higher volume streets, having wide bike lanes.

Colony Park Loop and any roads built within the subject tract are not part of the current City bikeway plan but the potential for bike traffic in the area should be addressed. The City of Austin Transportation Criteria Manual (TCM) list two types of bikeways applicable to the subject tract: Type II Bicycle Lane and Type III Bicycle Compatible Street. Type II calls for the delineation of a 5' bicycle lane with pavement markings. Type III does not rely on pavement markings but allows bicycles to share the road with vehicles. Neighborhood and residential collectors do not require additional pavement. Collectors and arterials require a minimum 12 1/2 feet outer lane for collectors and 13 1/2 feet outer lane for arterials measured from outer lane line to the face of curb.

7.4 PEDESTRIAN

The pedestrian network of the subject tract should provide ease of accessibility to bus stops, Overton Elementary and Colony Park Recreation Center. Attempts should be made to reduce the need for pedestrian/vehicle interaction. Where vehicles and pedestrians do connect design preference should be given to the pedestrian.

7.5 TRANSIT ORIENTED DEVELOPMENT STANDARDS

The subject tract does not fall within a City of Austin designated Transit Oriented Development district but a Transit-Ready Development Guide will be available soon for use by the public. Considering the proximity of the track to a potential major rail hub and the current access to City of Austin bus routes, this guide should be taken into account.

8.0 UTILITIES

8.1 ELECTRIC, GAS, PHONE AND CABLE

Electric service is provided by Austin Energy. Telephone service is provided by AT&T, and gas service and cable television is provided by Texas Gas Service and Time Warner Cable respectively. Service availability letters for these utilities have been included in **Appendix D**. Additional coordination with these utility companies will be required once the proposed land uses are determined, in order to verify if any offsite extensions will be required based upon demand. Additionally, per the maps provided by Texas Gas Services, it appears that an existing is located parallel to an existing 8" water line located on Tract D. The exact location is unknown at this time, however it is highly unlikely that the gas line is located in the existing 15' PUE that the water line is located in, and thus may not be located in an appropriate easement.

8.2 WASTEWATER COLLECTION

Wastewater service for the tract will be provided by an existing City of Austin 12-in. PVC gravity main that runs from north-to-south through the middle of the tract, and various existing 8-in gravity mains located in the adjacent single family developments. These lines appear to have sufficient depth to provide gravity wastewater service to the tract. The 12-in gravity main located through the middle of the tract has a total capacity of approximately **1,000** Living Unit Equivalents (LUE's), which correlates to one single family unit. Based on existing aerial photographs, and approved developments connecting to this line, it appears there are approximately **500** LUE's currently connected to this line, though the majority of those

connections drain to an existing lift station which pumps to the 12-in gravity main. The actual capacity of the line cannot be determined at this time as more information is required from the WUD regarding the discharge rate of the lift station. Existing water and wastewater facilities are shown on the City of Austin Water and Wastewater Grids included as **Exhibit 9**.

8.3 WATER DISTRIBUTION

Water service for the tract will be provided by existing City of Austin water mains. COA water mains are located in Colony Loop Drive (12-in. asbestos cement and PVC), in Loyola Lane (12-in. cast iron), and crossing the tract starting at Wilmington Drive and connecting to the 12-in. water line in Loyola Lane (8-in. asbestos cement). Based on the service availability letter from the Water Utility Department, the minimum, typical and maximum Hydraulic Grade Lines for the Central Pressure Zone are elevations 690, 710 and 720 respectively. This correlates to static pressures of 76 psi, 86 psi and 91 psi at the low end of the site, and static pressures of 30 psi, 39 psi and 43 psi at the high end of the site, respectively. The City of Austin requires a minimum pressure of 50 psi for average daily demands, which correlates to elevation 575 to 605 for this pressure zone. The only portion of the site located above this elevation is approximately 20 acres located at the far northeast corner of Tract C. Based on this, it is likely that any connections in this area will require connection to the North Pressure Zone, which operates above elevation 575. Water facilities for this pressure zone are located in the adjacent Lakeside Subdivision. Development in this area may require dual, parallel water systems to provide adequate service.

8.4 STORMWATER CONVEYANCE

Stormwater conveyance for the subject tract will be provided by a series of public storm sewer systems and open channels designed for the site. Any stormwater releases from the subject tract will be discharged to the existing tributaries via storm sewer piping that discharges at a standard City of Austin headwall with energy dissipators. Level spreader devices may also be used to minimize any downstream erosion or disturbance. Stormwater runoff from the AISD tract is collected in a series of storm sewer pipes and is conveyed to the water quality ponds and detention pond before it is discharged to Walnut Creek Tributary No. 1 and the tributary

crossing the middle portion of the tract. The properties downstream of the subject tract should not be affected by stormwater discharges from the subject tract, as COA regulations prevent an increase of stormwater flows downstream of a newly developed site.

Preliminary review of the three tributaries crossing the subject tract has revealed that a City of Austin floodplain study will need to be performed on the westernmost tributary (Walnut Creek Tributary No. 1) and the tributary crossing the middle of the tract. The City of Austin requires a floodplain study be performed on tributaries up to the point where the waterway is draining 64 acres or more. A partial City of Austin floodplain study has been performed on Walnut Creek Tributary No. 1, but it will need to be extended to the northern boundary of the subject tract. The floodplain study on the tributary crossing the middle of the tract will also need to be extended a few hundred feet downstream of Loyola Lane to effectively model the existing culverts crossing under the roadway.

9.0 DETENTION AND WATER QUALITY

The City of Austin requires that Detention and Water Quality improvements are constructed whenever proposed development increases impervious cover and peak runoff from a proposed development. The specific criteria for these improvements is detailed within the COA criteria manuals. A short discussion of what is required follows.

9.1 *DETENTION*

Stormwater runoff peak flow rates shall not be increased at any point of discharge from a site for the 2-, 10-, 25-, and 100-year storm frequency events. Regulation of peak flows to allowable levels shall be achieved by storage on-site, or by participation in an approved Regional Stormwater Management Program (RSMP). The RSMP is an option where a landowner may be allowed to pay a fee rather than construct an on-site detention pond. Based on our experience, it would not be appropriate for the owner to participate in an RSMP for this project. For this particular site, it is anticipated that RSMP fees would outweigh the cost of pond construction. In addition, there is ample land area available for construction of the necessary detention ponds.

We have identified two detention pond alternatives that will work for the subject tract: an online regional detention pond or multiple offline detention ponds. Both of these alternatives have their own advantages and disadvantages. A regional online detention pond would most likely be located on the southern portion of the tract near Loyola Lane. A regional detention pond would also require a large capital investment at the start of the project, as the pond would be large in nature and would have to be constructed before the first phase of the project could be accepted by the City. An online regional pond would also be subject to the floodplain modification regulations found in Section 1.7.0 of the Environmental Criteria Manual. Those regulations state that development within a floodplain should respect the natural characteristics of the waterway and should prevent direct degradation of water quality. The request for approval of a floodplain modification shall be submitted in conjunction with an application for a development permit. The second alternative includes multiple offline detention ponds that could be designed and constructed as needed with the various phases of the project. Multiple detention ponds would require a smaller initial capital investment than a regional detention pond, but overall expense, including maintenance, and required land area, would be greater than the regional approach.

9.2 WATER QUALITY

To minimize the effect of non-point source pollutants in stormwater, the City of Austin requires water quality controls to serve all new development. These water quality controls are designed to improve water quality by removing suspended particulate matter and associated constituents such as bacteria, nutrients and metals. The primary control strategy for water quality basins is to capture and isolate at least a minimum volume of stormwater runoff for treatment. The minimum volume is the first half inch of runoff plus an additional one-tenth inch for each 10% increase of gross impervious cover above 20% within the drainage area to the control. The water quality volume must consist of runoff from all impervious surfaces such as roadways, parking areas and roof tops. The most common water quality control for improving the quality of stormwater runoff is a water quality pond. If required, a water quality pond will most likely be located at the furthest downstream end of the site. We have identified three types of BMP's that would be suitable for the subject tract: a sedimentation/sand-filtration pond, a biofiltration pond, and a wet pond.

A sedimentation/sand filtration pond is the primary structural water quality control used to reduce non-point source pollution in Urban, Suburban, Water Supply Suburban, and Water Supply Rural watersheds within the City of Austin. In a sedimentation/filtration pond system, the water quality volume is directed to a sedimentation structure which is followed by a filtration basin. Additional stormwater runoff is diverted to a stormwater detention basin or a conveyance structure such as an open channel or storm sewer, as specified in the City of Austin Drainage Criteria Manual. A sediment basin is required prior to the filtration basin to ensure the long-term effectiveness of the system by protecting the filter media from excessive sediment loading. In a full sedimentation/filtration system, the sedimentation basin is designed to hold the entire water quality volume and to release the water quality volume to the filtration basin over an extended period of time. Unless the design is considered unfeasible, a full sedimentation/filtration system is required when the City will be responsible for maintenance.

Biofiltration ponds use chemical, biological, and physical properties of plants, microbes, and soils for removal of pollutants found in stormwater runoff. Similar to a sedimentation/filtration pond, a sedimentation basin is used for pretreatment of runoff in order to protect the biofiltration media from becoming clogged by sediment loads. However, a biofiltration pond differs from a sedimentation/filtration pond in that it uses a biological community of plants and microorganisms, which can theoretically provide a higher level of treatment of runoff. A biofiltration pond typically consists of a splitter box at the pond entrance, a flow spreading structure, a sedimentation basin, a separator element, a biofiltration media filtration basin with an underdrain piping system, an outlet structure, and native vegetation selected for tolerance to ponding and dry soil conditions. When designed properly, biofiltration ponds can provide stormwater runoff treatment equivalent to a sedimentation/filtration pond. It is also important to note that maximum velocities of stormwater entering the sedimentation chamber must be controlled for the biofiltration pond to work effectively. This requirement limits the amount of impervious cover that is practical for treatment. When native plantings are established, biofiltration ponds are relatively low maintenance. Any uses that would negatively affect the function of a biofiltration pond should be restricted. To ensure this, the City of Austin requires an approved and recorded Integrated Pest Management plan for the drainage area up to and including the pond area.

When designed properly, wet ponds are highly effective at treating stormwater runoff. Wet ponds are designed to have a permanent pool with an average minimum hydraulic residence

time of 14 days. Holding stormwater runoff for this period of time allows for settling of suspended solids and biological uptake of nutrients. When wet ponds are designed to the criteria found in Section 1.6.6(C) of the Environmental Criteria Manual, they are assumed to provide water quality treatment equivalent to a sedimentation/filtration pond. Wet ponds are not considered critical environmental features by the City of Austin when designed and maintained properly. Because a wet pond needs to provide depths great enough to minimize water surface fluctuations, an adequate area for vegetation, and enough surface area to allow aeration, use of wet ponds should be restricted to areas that drain a minimum of 20 acres. Use of wet ponds should also be restricted to drainage areas that do not exceed 320 acres so that disturbance to waterways is minimized and higher flow-through rates are avoided.

Should a single regional type of detention pond be feasible, then a combination wet pond/detention pond design might also be an acceptable alternative for the subject tract. This would allow for a single facility to be constructed to provide detention and water quality for the entire tract. However, significant land area and initial capital expense is required for this type of facility.

10.0 ENVIRONMENTAL REGULATIONS

10.1 IMPERVIOUS COVER

As an additional environmental regulation, the City of Austin has established impervious cover limitations based on the watershed classification of a site. The allowable impervious cover may be different than the impervious cover allowed by zoning classification, and thus the more restrictive number will be what the City enforces. Furthermore, the impervious cover is calculated as a percentage of the Net Site Area, rather than the gross site area. The Net Site Area requires that deductions be taken from the gross area based on slope categories, CWQZ and WQTZ setbacks, and on-site wastewater disposal fields. The subject tract is located in a Suburban Watershed, and therefore the allowable impervious cover for single family development with lots greater than 5,750 sf is 45%, for single family with lots less than 5,750 is 55%, for multi-family development is 60%, and for commercial development is 65%. The

impervious cover includes all building structures, driveways, streets, parking areas and sidewalks not located adjacent to a street.

10.2 CONSTRUCTION ON SLOPES / CUT AND FILL REQUIREMENTS

The City of Austin prohibits construction of streets or driveways on existing slopes greater than 15%, unless the street or driveway is necessary to provide primary access to at least two contiguous acres, or an area with at least five residential units. Additionally, the City prohibits construction of a building or parking garage on existing slopes greater than 25%. Parking lots are prohibited on existing slopes greater than 15%. For buildings and parking garages on slopes between 15% and 25%, the area of impact on those slopes cannot exceed 10% of the total area of those slopes. These requirements do not apply to existing man-made slopes, which do exist on the site as street rough cuts from earlier subdivisions.

The subject tract will be required to limit cuts and fills to no more than four (4) feet from natural ground for all proposed grading, except for ponds and building foundations, or eight (8) feet with an administrative waiver. Though for building foundations, this does include the grading around the perimeter of the building, for example, it is allowable to construct a foundation with a perimeter beam of ten (10) feet in height, but not allowable to construct the same foundation with a three (3) foot perimeter beam and seven (7) feet of fill grading down at a 3:1 slope. Any exceptions to this will require a variance to the Land Development Code approved by City staff, the Environmental Review Board and the Planning Commission. An evaluation of this can be performed once a concept plan has been prepared.

The site exhibits significant areas erosion due to the soil characteristics throughout. In order to develop in these areas, it is very likely that environmental variances will be required from the City. This process will require negotiation with City staff in order to show that the Findings of Fact are being met, and will likely require additional environmental protection / enhancement above and beyond the minimum requirements. Once support from City staff is gained, then the variance request will be required to be heard by the Environmental Board and the Zoning and Platting Commission. Both hearings are public.

10.3 TREE PRESERVATION

The subject tract will also be required to provide a tree survey of all trees 8" in diameter or larger. Trees 19" in diameter or larger are classified as protected trees and must receive approval from the City of Austin arborist for removal. If a protected tree is approved for removal, it must be replaced with an approved tree species with a ratio typically of one caliper inch to one caliper inch.

10.4 FLOODPLAIN / CWQZ / WQTZ

The subject tract is located within the Walnut Creek watershed, which is classified as a Suburban Watershed, according to Chapter 25-8 of the Land Development Code. A portion of Tract B is located within Zone A of the effective FEMA Flood Insurance Rate Map No. 48453C0125 E, effective June 16, 1993. A Zone A floodplain is an approximate location for a floodplain, as not engineered detailed study of the floodplain was performed. This floodplain is associated with Walnut Creek Tributary No. 1 located along the west boundary of the AISD tract, and encroached onto the southwest corner of Tract B. However, the City of Austin has recently performed a city wide study of all waterways, and is currently in the process of revising the floodplain maps with FEMA. This process is ongoing, however the City has adopted the revised floodplains for regulatory purposes as the Floodplain Administrator. Based on the Preliminary Revised Flood Insurance Rate Maps, the revised floodplain for this waterway ends at the downstream end of a culvert beneath Colony Loop Drive, and thus once these maps become effective, Tract B would not be affected by FEMA floodplain. According to the FEMA map, Tract C and D are not affected by any floodplain.

The City of Austin requires that a City defined floodplain be calculated for all watersheds with a contributing drainage area of 64 acres or more, for fully developed conditions. The purpose of calculating this floodplain is in order to establish a drainage easement to contain the floodplain and to insure that no development will occur within the floodplain. Based on preliminary drainage area calculations, the floodplain study for the upper reach of Walnut Creek Tributary No. 1 will need to be extended along the west boundary of Tract B to the Southern Pacific Railroad. As well, the unnamed tributary located along the west boundary of Tract D will require a floodplain study from downstream of Loyola Lane to Colony Loop Drive.

Additionally, in Suburban Watersheds, waterways with a contributing drainage area of 320 acres to 640 acres are classified as minor waterways. The unnamed tributary along the west boundary of Tract D has a drainage area of 262 acres at the Loyola Lane crossing, and thus is not classified as a minor waterway. As well, the other waterways on the subject tract would be un-classified, and therefore there are no Critical Water Quality Zone setbacks or Water Quality Transition Zones setbacks.

10.5 CRITICAL ENVIRONMENTAL FEATURE SETBACKS

Per the Environmental Assessment prepared by Horizon Environmental, there are two potential wetland features located on Tract D. Both potential CEF's are located on the southeastern portion of the subject tract and are labeled as W-1 and W-2 on Figure 1 of the Horizon report, both of which are wetland features as defined by the City of Austin. Note that these features are not necessarily Army Corps of Engineers defined wetlands. CEF W-1 is approximately 340 feet long and 8 feet wide and is located within an on-site waterway south of Colony Loop Drive. CEF W-2 was observed approximately 1,500 feet southwest of feature W-1 and has approximate dimensions of 165 feet wide by 300 feet long. Horizon believes feature W-2 is a stock tank that is no longer functional. No new growth of wetland vegetation was observed and it is Horizon's opinion that changes to the hydrology of the area have occurred and that feature W-2 will unlikely continue to function as an herbaceous wetland. Horizon's Environmental Site Assessment also includes descriptions of site topography, soils, geology, vegetation, and existing land use. The City of Austin Environmental Assessment is included with this report as **Appendix C.**

The City of Austin typically requires a 150' setback around all CEF's, however historically City staff has allowed setbacks for wetland features to be reduced to 50' if other mitigation of riparian zone protections was incorporated, or a plan for wetland restoration was prepared. Once a conceptual land plan is prepared, a meeting will be scheduled with the City's environmental staff in the field to evaluate and determine what an acceptable setback would be for each feature. Given the lack of quality for feature W-2, it is likely that a setback will not be required for the feature.

11.0 EXISTING APPROVALS

The following subdivisions, site plans, preliminary, and utility projects have been previously approved for the subject tract:

1. The Meadows of Walnut Creek Preliminary (C8-84-100) (**Exhibit 8**)
2. Colony Park Hills/Walnut Creek Section I & II (C8-73-70) (**Exhibit 8**)
3. Overton Elementary School and City of Austin Turner Roberts Recreation Center (SPC-06-0046CX)
4. Colony Park Recreation Center (SPC-03-0021C)
5. 12-in COA water line in Loyola Ln. (AWU project number 2003-0004)
6. 12-in. COA water line in Colony Loop Dr. (AWU project number 85-0910)
7. 8-in. COA water line in southern portion of the tract (AWU project number 73-0325)
8. 8-in. COA wastewater line running north to south within the subject tract (line connects to manhole number 80664 in Loyola Lane)

It is our understanding that because this is an AHFC project, Local Government Code Chapter 245 (grandfathering) rights will not be pursued.

12.0 REQUIRED APPROVALS AND PERMITS

12.1 REZONING

As discussed in Section 5.0, the subject tract is currently zoned for single family residence (SF-2 and SF-3) and multi-family residence (MF-2). If retail or commercial uses are desired for future development of the tract, the subject tract will need to be rezoned. This process will require the preparation of an application, a Traffic Impact Analysis, and a survey of the area to be rezoned. City staff will review the proposed zoning changes and either provide comments that need to be addressed, a positive recommendation or a negative recommendation. It will be

critical to include input from any adjacent neighborhood groups or other groups with interest. This process will likely be very public, transparent and political.

12.2 SITE DEVELOPMENT PLAN

Any proposed commercial or multi-family development will require a site development plan that will need to be submitted only to the City of Austin and TDLR for review and approval. It should be noted that prior to submission of a site plan application to the City of Austin, a plat must be prepared and approved for the subject tract. A site plan is required to determine if a proposed development complies with the Land Development Code and the ordinances of the City of Austin. City codes require that a site plan application be reviewed for land use, zoning, transportation, drainage, storm water detention, environmental and safety considerations. The City of Austin site plan review process involves review by the various departments within the Watershed Protection and Development Review Department (WPDRD) of the City, and typically takes 90 to 180 days for approval of the site development permit. When the site development plan is submitted to the City, it is assigned to a WPDRD case manager who is responsible for the review of the case and who serves as the public contact for the case. WPDRD typically returns a written report of staff review comments to the applicant within 28 calendar days after submittal. The applicant then addresses staff comments and resubmits the site development plan to WPDRD. WPDRD may generate new comments based on the resubmittal and the applicant is required to address any new comments in a timely manner. This process continues until all comments from WPDRD staff have been cleared. The process is entirely administrative if there are no variances required for approval. Any variances to the site plan must be heard before the Zoning and Platting Commission.

12.3 SUBDIVISION

Based upon the single-family residence (SF-2 and SF-3) zoning, a subdivision plan will need to be submitted to the City of Austin for review and approval. The process involves approval of a Preliminary Plan, approval of a Final Plat, and approval of subdivision construction plans. The preliminary plan requires approval from the Zoning and Platting Commission and at times, may require approval through other City boards and commissions. The final plat review process

requires a public hearing and approval from the COA Zoning and Platting Commission. The review process for subdivision plans involves review by the various departments within the WPDRD. A typical review of a subdivision plan by WPDRD includes the review of streets and drainage, clearing, rough cut and grading, and utility planning. The City of Austin review process typically takes 90 to 180 days for approval of the development permit and has a review/comment period similar to a site development plan. The subject tract is located within the City of Austin's Full Purpose Jurisdiction, so review of the subdivision plan is not required by Travis County.

12.4 LANDSCAPING

The portions of the subject tract zoned single family residence (SF-2 and SF-3) are exempt from the City's landscape requirements. It is expected that any proposed improvements within the portion of the subject tract zoned multi-family residence (MF-2) or commercial will be required to meet the City's landscape requirements including "preserving the existing natural character of the landscape, including the retention of trees eight inches or larger in diameter to the extent feasible." This will require a tree survey of all trees with a diameter of at least eight inches. Additional requirements include landscaping at least 20% of street yard areas, a landscape median within 50' of each parking space, buffering, or view obstruction of parking areas, and cars, irrigation of all required landscape areas, and compliance with screening standards. The City also allows for alternative compliance when site restrictions don't allow for basic compliance standards mentioned above. It is assumed that a Registered Landscape Architect will be responsible for the development and approval of all aspects of a landscape compliance plan at the site plan stage.

12.5 PARKLAND DEDICATION

Per the City of Austin Land Development Code, a requirement for parkland dedication shall apply to all residential subdivisions and all site plans with three or more dwelling units. The area to be dedicated as parkland must be shown on the preliminary plan and the plat for a subdivision. For a site plan, the parkland area must be shown on the site plan and in a deed to the City. The amount of parkland required to be dedicated to the City is five acres for every

1,000 lots or residents. A cash payment or fiscal security may be deposited with the City instead of the dedication of parkland if the land required to be dedicated is less than six acres or if the land available for dedication does not comply with the standards for dedication. Land to be dedicated as parkland must comply with the standards in the Comprehensive Plan, the Park and Recreation Action Plan, the Administrative Criteria Manual, and section 25-1-603 of the Land Development Code. As the final use for the subject tract is not known at the time this report was written, an accurate parkland dedication area or dedication fee cannot be calculated.

In calculating the amount of parkland to be dedicated, the number of residents in each dwelling unit shall be calculated based on the following table:

Dwelling Units per Acre	Residents in Each Dwelling Unit
Not more than 6	2.8
More than 6 and not more than 12	2.2
More than 12	1.7

Using the above densities, an example parkland dedication calculation, based on 600 lots, is shown below:

$$600 \text{ units} / 203.621 \text{ Ac} = 2.9 \text{ dwelling units per acre}$$

2.9 dwelling units/acre corresponds to 2.8 residents/dwelling unit (per above table)

$$(5 \text{ acres} \times 600 \text{ units} \times 2.8 \text{ residents/unit}) / 1,000 = \underline{8.4 \text{ acres required for parkland dedication}}$$

It is our understanding that AHFC donated the land for the Turner Roberts Recreation Center and therefore, it is possible that the PARD may agree that this satisfies the parkland requirements for the subject tract.

12.6 TCEQ APPROVAL

The subject property is not located within the Edwards Aquifer Recharge Zone per TCEQ maps. Therefore, a Water Pollution Abatement Plan permit will not be required. However, the Texas Commission on Environmental Quality (TCEQ) Texas Pollutant Discharge Elimination System (TPDES) program has federal regulatory authority over discharges of pollutants to Texas surface water. A storm water permit is required for construction activity that disturbs 5 or more acres. A Storm Water Pollution Prevention Plan (SWPPP) will need to be submitted to the

TCEQ for review and approval. The SWPPP identifies areas and activities that could produce contaminated runoff and how to ensure that the contamination is mitigated. A Notice of Intent (NOI) will also be required to be submitted to the TCEQ at least two days prior to commencing construction activities.

13.0 REQUIRED STUDIES

A Preliminary Geotechnical Study has been prepared for the subject tract and is included as **Appendix F** to this report. A final geotechnical study will be performed during the construction plan phase of the project and will include a street pavement design. A City of Austin Environmental Assessment has also been prepared and is included as **Appendix C** to this report. As part of the City of Austin review process, a floodplain study and a traffic impact analysis will need to be prepared for the subject tract. The TIA will be prepared in conjunction with rezoning and/or when a Preliminary Plan is approved.

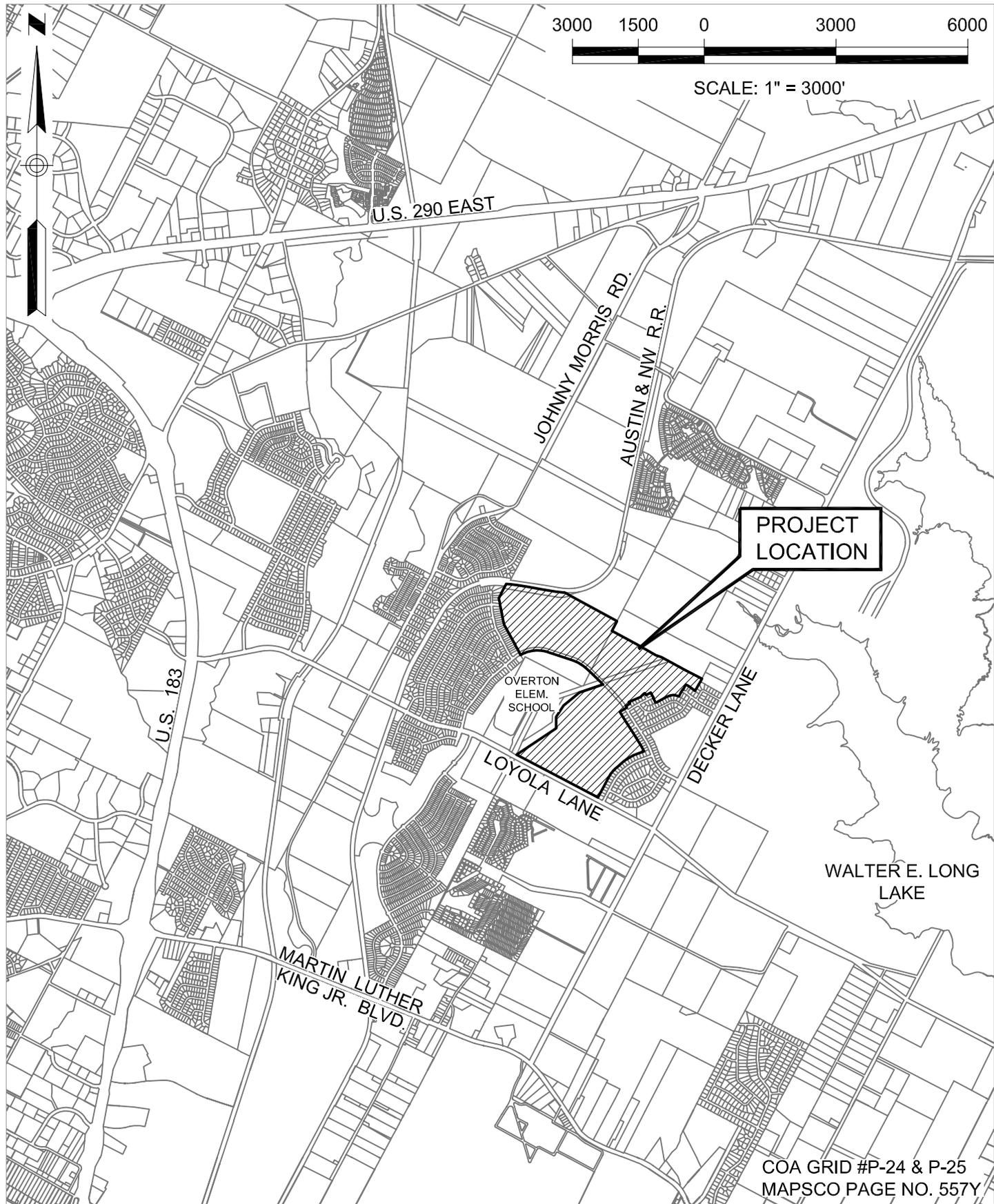
14.0 SUMMARY AND CONCLUSION

The 203 acre Colony Park tract is located in east Austin, in an area that is expected to incur significant growth over the next five to ten years. The site is located in Walnut Creek Watershed, which is classified as a Suburban Watershed, and is within the Full Purpose Jurisdiction of the City of Austin. The site appears to have adequate water and sewer service to be provided by the Austin Water Utility Department, however, further analysis will be required based upon the proposed land uses and densities for the project. The site does exhibit areas of moderately steep slopes, which will limit the ability to develop large structures in those areas. However, there are sufficient areas with flatter slopes that can accommodate such structures. Some areas with slopes greater than 15% may require environmental variances in order to develop on those slopes. The soils on the site are highly expansive and highly erosive, and thus will require special consideration when streets, retaining walls, earthwork and foundations are designed. Foundation designs will be very critical depending on how the structure is loaded, and likely will have an impact financially on any structure.

The site is in close proximity to State Highway 130, US Highway 183, US highway 290, and two potential rail transit lines. As well, the site is currently served by two CMTA bus routes, and a potential transit station site is located within one mile of the subject tract. Based on this, access to major thoroughfares is exceptional and alternative public transportation is readily available and likely will be enhanced in the future. However, due to the subject tract's distance from the possible location of a future CMTA transit station, it may be difficult to consider Transit Oriented Development (TOD) for this tract with a rail component, as the walking distance to the station is too great. However, a TOD with a bus transit station to transfer pedestrians to the rail transit station or a Traditional Neighborhood District (TND) may be more feasible. With an AISD elementary school under construction adjacent to the subject tract, and a middle school located less than a mile from the site, some of the destinations for TND are in place. Nevertheless, both types of development are heavily dependant on density and mixed use. We recommend that AHFC perform a market study in order to determine if these types of development are feasible.

DISCLAIMER: LJA Engineering and Surveying has prepared this report based upon our experience in working with the City of Austin, and other reviewing agencies, on similar projects. In preparing this report and stating conclusions, we have relied on information provided by others, both verbally and written, as well as information contained in printed documents available by these agencies, some information provided to LJA. The conclusions made by LJA based upon this information, is subject to interpretation by the reviewing agency, and therefore such interpretations may contradict information contained within this report. This report is to be used solely for the subject property, and only by the Client this report was prepared for. LJA does not guarantee that the project can be developed based upon the information contained in this report, and as such will not be held liable for project performance and yield; development permits procedures, requirements and fees; or construction related costs as a result of using this report.

EXHIBIT 1
SITE LOCATION MAP



COA GRID #P-24 & P-25
 MAPSCO PAGE NO. 557Y

FOR PLANNING PURPOSES ONLY

I:\A161\0401\401\Site Location Mapping

LJA Engineering & Surveying, Inc.
 5316 Highway 290 West
 Suite 150
 Austin, Texas 78735
 Phone 512.439.4700
 Fax 512.439.4716

**COLONY PARK
 SUBDIVISION**
 SITE LOCATION MAP

SHEET NAME
 Site Location Map.dwg

1 OF 1

EXHIBIT 2
AERIAL MAP

EXHIBIT 3
TAX MAPS
(02_1831 & 02_1841)

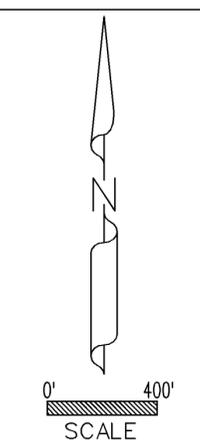


REVISIONS
01/28/2004 HRG

JURISDICTIONS
AUSTIN COMMUNITY COLLEGE
AUSTIN ISD
CITY OF AUSTIN
MANOR ISD
TCESD NO. 4 & 12
TRAVIS COUNTY

TRAVIS CENTRAL APPRAISAL DISTRICT
8314 Cross Park Drive
Austin, Tx 78754
Internet Address WWW.TRAVISCAD.ORG

Main Telephone Number (512)834-9317
Appraisal Information (512)834-9138
Fax Number (512)835-5371
TDD (512)836-3328



1"=100" MAP REFERENCES

2 2333	2 2336
2 2133	2 2136
2 1930	2 1933
2 1936	2 1939
2 1730	2 1733
2 1736	2 1739

MAP NO.
2 1831

2 2621	2 2631	2 2641
2 1821	2 1841	
2 1021	2 1031	2 1041

EXHIBIT 4
USGS QUADRANGLES
(AUSTIN EAST & MANOR)

EXHIBIT 5
ZONING MAPS & ZONING VERIFICATION LETTERS
(GRIDS P-24 & P-25)



City of Austin

One Texas Center, 505 Barton Springs Rd. Austin, Texas 78704

ZONING VERIFICATION LETTER

Date: February 4, 2008

Party Requesting

COLE HUGGINS, P.E.
LJA ENGINEERING & SURVEYING, INC.
5316 HIGHWAY 290 WEST, STE.150
AUSTIN, TX. 78735
512-439-4700

Property Owner

AUSTIN HOUSING FINANCE CORPORATION
1000 E. 11TH ST.
AUSTIN, TX. 78702
(P.O.BOX 1088; AUSTIN, TX. 78767
512-974-3100

Address Of Property

7201 COLONY LOOP
AUSTIN, TX.
78724

Legal Description

ABS 4, SUR 19, BURLESON J, 49.889 AC.

Zoning Map Numbers

P24,25

Tax Parcel Identification Number

02-1831-0501

*Current Zoning

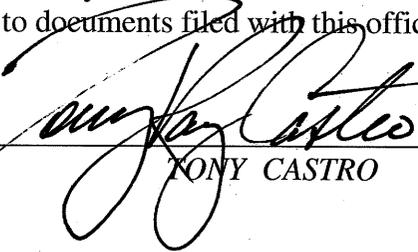
P: PUBLIC DISTRICT

Case Number

C14-03-0010 & ORD. NO.030306-Z-2

For questions concerning Zoning Compliance or any Development criteria, Parking, Permitted uses, Zoning violations, Conditional uses, Variances, Destruction and Rebuilding, etc. contact the Development Assistance Center of the City of Austin at (512)974-6370 for Land Use Planner correspondence session.

I, *TONY CASTRO*, Communications and Technology Management Office, City of Austin, Texas, do hereby certify that the information above is true and correct to the best of my ability, according to documents filed with this office.



TONY CASTRO



City of Austin

Communications and Technology Management

Overlays & Neighborhood Plans relative to parcel number 02-1831-0501 (7201 Colony Loop)

Overlays

Pipeline Restricted Area

Referenced in the Land Development Code of the City of Austin Chapter 25-2-516

Neighborhood Plans

N/A

Attached is information regarding the City of Austin Neighborhood Plans and their status to date. For information concerning these Neighborhood Plans and their current status and relativity to development, please contact the necessary personnel on the form attached with the City of Austin Neighborhood Planning Areas map.

***Zoning Subcategory: N/A**

*For information regarding Zoning Subcategories and their relativity to development, contact the Development Assistance Center at (512) 974-6370 and ask to speak to a Land Use Planner.

505 Barton Springs Rd.
Austin, Texas
78704



City of Austin

One Texas Center, 505 Barton Springs Rd. Austin, Texas 78704

ZONING VERIFICATION LETTER

Date: February 4, 2008

Party Requesting

COLE HUGGINS, P.E.
LJA ENGINEERING & SURVEYING, INC.
5316 HIGHWAY 290 WEST, STE.150
AUSTIN, TX. 78735
512-439-4700

Property Owner

AUSTIN HOUSING FINANCE CORPORATION
1000 E. 11TH ST.
AUSTIN, TX. 78702
(P.O.BOX 1088; AUSTIN, TX. 78767
512-974-3100

Address Of Property

LOYOLA LA.; APPROX. 2500' WEST OF THE
INTERSECTION OF LOYOLA LA. & DECKER LA.
AUSTIN, TX.
78724

Legal Description

ABS 4, SUR 19, BURLESON J, 2.746 AC.

Zoning Map Numbers

P25

Tax Parcel Identification Number

02-1831-0503

*Current Zoning

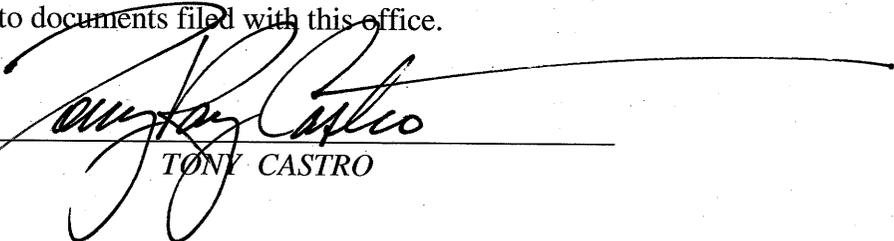
P: PUBLIC DISTRICT

Case Number

C14-03-0010 & ORD. NO.030306-Z-2

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TONY CASTRO



City of Austin

Communications and Technology Management

Overlays & Neighborhood Plans relative to parcel number 02-1831-0503 (Loyola La.; Approx. 2500' West of the Intersection of Decker La. & Loyola La.)

Overlays

N/A

Neighborhood Plans

N/A

Attached is information regarding the City of Austin Neighborhood Plans and their status to date. For information concerning these Neighborhood Plans and their current status and relativity to development, please contact the necessary personnel on the form attached with the City of Austin Neighborhood Planning Areas map.

***Zoning Subcategory: N/A**

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City of Austin

One Texas Center, 505 Barton Springs Rd. Austin, Texas 78704

ZONING VERIFICATION LETTER

Date: February 4, 2008

Party Requesting

COLE HUGGINS, P.E.
LJA ENGINEERING & SURVEYING, INC.
5316 HIGHWAY 290 WEST, STE.150
AUSTIN, TX. 78735
512-439-4700

Property Owner

AUSTIN HOUSING FINANCE CORPORATION
1000 E. 11TH ST.
AUSTIN, TX. 78702
(P.O.BOX 1088; AUSTIN, TX. 78767
512-974-3100

Address Of Property

LOYOLA LA.; APPROX. 2500' WEST OF THE
INTERSECTION OF LOYOLA LA. & DECKER LA.
AUSTIN, TX.
78724

Legal Description

ABS 4, SUR 19, BURLESON J, 6.997 AC.

Zoning Map Numbers

P25

Tax Parcel Identification Number

02-1831-0506

*Current Zoning

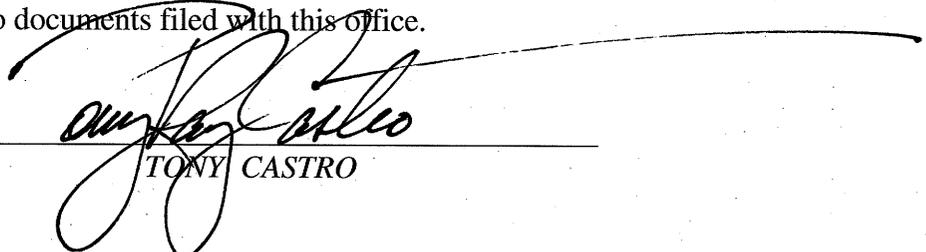
P: PUBLIC DISTRICT

Case Number

C14-86-296 & ORD. NO.870107-R

For questions concerning Zoning Compliance or any Development criteria, Parking, Permitted uses, Zoning violations, Conditional uses, Variances, Destruction and Rebuilding, etc. contact the Development Assistance Center of the City of Austin at (512)974-6370 for Land Use Planner correspondence session.

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TONY CASTRO



City of Austin

Communications and Technology Management

Overlays & Neighborhood Plans relative to parcel number 02-1831-0506 (Loyola La.; Approx. 2500' West of the Intersection of Decker La. & Loyola La.)

Overlays

N/A

Neighborhood Plans

N/A

Attached is information regarding the City of Austin Neighborhood Plans and their status to date. For information concerning these Neighborhood Plans and their current status and relativity to development, please contact the necessary personnel on the form attached with the City of Austin Neighborhood Planning Areas map.

***Zoning Subcategory: N/A**

*For information regarding Zoning Subcategories and their relativity to development, contact the Development Assistance Center at (512) 974-6370 and ask to speak to a Land Use Planner.

505 Barton Springs Rd.
Austin, Texas
78704



City of Austin

One Texas Center, 505 Barton Springs Rd. Austin, Texas 78704

ZONING VERIFICATION LETTER

Date: February 4, 2008

Party Requesting

COLE HUGGINS, P.E.
LJA ENGINEERING & SURVEYING, INC.
5316 HIGHWAY 290 WEST, STE.150
AUSTIN, TX. 78735
512-439-4700

Property Owner

AUSTIN HOUSING FINANCE CORPORATION
1000 E. 11TH ST.
AUSTIN, TX. 78702
(P.O.BOX 1088; AUSTIN, TX. 78767
512-974-3100

Address Of Property

LOYOLA LA.; APPROX. 2500' WEST OF THE
INTERSECTION OF LOYOLA LA. & DECKER LA.
AUSTIN, TX.
78724

Legal Description

ABS 4, SUR 19, BURLESON J, 5.761 AC.

Zoning Map Numbers

P24,25

Tax Parcel Identification Number

02-1831-0507

*Current Zoning

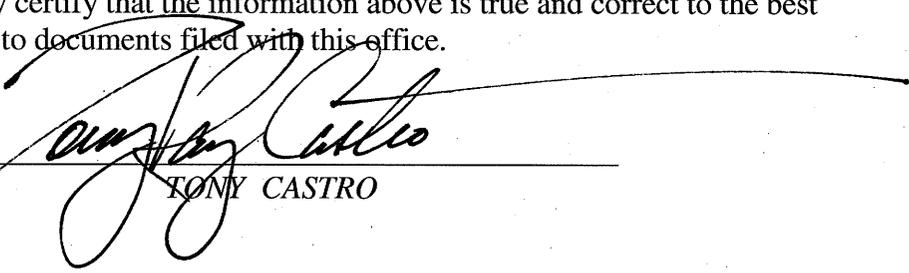
P: PUBLIC DISTRICT

Case Number

C14-86-296 & ORD. NO.870107-R

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TONY CASTRO



City of Austin

Communications and Technology Management

Overlays & Neighborhood Plans relative to parcel number 02-1831-0507 (Loyola La.; Approx. 2500' West of the Intersection of Decker La. & Loyola La.)

Overlays

N/A

Neighborhood Plans

N/A

Attached is information regarding the City of Austin Neighborhood Plans and their status to date. For information concerning these Neighborhood Plans and their current status and relativity to development, please contact the necessary personnel on the form attached with the City of Austin Neighborhood Planning Areas map.

***Zoning Subcategory: N/A**

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City of Austin

One Texas Center, 505 Barton Springs Rd. Austin, Texas 78704

ZONING VERIFICATION LETTER

Date: February 4, 2008

Party Requesting

COLE HUGGINS, P.E.
LJA ENGINEERING & SURVEYING, INC.
5316 HIGHWAY 290 WEST, STE.150
AUSTIN, TX. 78735
512-439-4700

Property Owner

AUSTIN HOUSING FINANCE CORPORATION
1000 E. 11TH ST.
AUSTIN, TX. 78702
(P.O.BOX 1088; AUSTIN, TX. 78767
512-974-3100

Address Of Property

LOYOLA LA.; APPROX. 2500' WEST OF THE
INTERSECTION OF LOYOLA LA. & DECKER LA.
AUSTIN, TX.
78724

Legal Description

ABS 4, SUR 19, BURLESON J, 9.930 AC.

Zoning Map Numbers

P24,25

Tax Parcel Identification Number

02-1831-0508

*Current Zoning

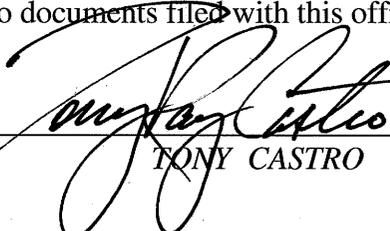
P: PUBLIC DISTRICT

Case Number

C14-03-0010 & ORD. NO.030306-Z-2

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TONY CASTRO



City of Austin
Communications and Technology Management

Overlays & Neighborhood Plans relative to parcel number 02-1831-0508 (Loyola La.; Approx. 2500' West of the Intersection of Decker La. & Loyola La.)

Overlays

N/A

Neighborhood Plans

N/A

Attached is information regarding the City of Austin Neighborhood Plans and their status to date. For information concerning these Neighborhood Plans and their current status and relativity to development, please contact the necessary personnel on the form attached with the City of Austin Neighborhood Planning Areas map.

***Zoning Subcategory: N/A**

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City of Austin

One Texas Center, 505 Barton Springs Rd. Austin, Texas 78704

ZONING VERIFICATION LETTER

Date: February 4, 2008

Party Requesting

COLE HUGGINS, P.E.
LJA ENGINEERING & SURVEYING, INC.
5316 HIGHWAY 290 WEST, STE.150
AUSTIN, TX. 78735
512-439-4700

Property Owner

AUSTIN HOUSING FINANCE CORPORATION
1000 E. 11TH ST.
AUSTIN, TX. 78702
(P.O.BOX 1088; AUSTIN, TX. 78767.
512-974-3100

Address Of Property

LOYOLA LA.; APPROX. 2500' WEST OF THE
INTERSECTION OF LOYOLA LA. & DECKER LA.
AUSTIN, TX.
78724

Legal Description

ABS 4, SUR 19, BURLESON J, 3.023 AC.

Zoning Map Numbers

P24,25

Tax Parcel Identification Number

02-1831-0509

*Current Zoning

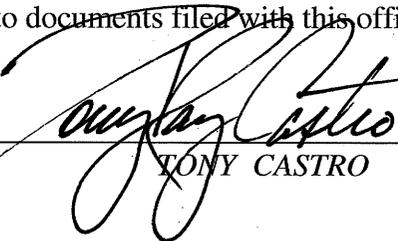
P: PUBLIC DISTRICT

Case Number

C14-03-0010 & ORD. NO.030306-Z-2

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TONY CASTRO



City of Austin

Communications and Technology Management

Overlays & Neighborhood Plans relative to parcel number 02-1831-0509 (Loyola La.; Approx. 2500' West of the Intersection of Decker La. & Loyola La.)

Overlays

N/A

Neighborhood Plans

N/A

Attached is information regarding the City of Austin Neighborhood Plans and their status to date. For information concerning these Neighborhood Plans and their current status and relativity to development, please contact the necessary personnel on the form attached with the City of Austin Neighborhood Planning Areas map.

***Zoning Subcategory: N/A**

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City of Austin

One Texas Center, 505 Barton Springs Rd. Austin, Texas 78704

ZONING VERIFICATION LETTER

Date: February 12, 2008

Party Requesting

COLE HUGGINS, P.E.
LJA ENGINEERING & SURVEYING, INC.
5316 HIGHWAY 290 WEST, STE.150
AUSTIN, TX. 78735
512-439-4700

Property Owner

AUSTIN HOUSING FINANCE CORPORATION
1000 E. 11TH ST.
AUSTIN, TX. 78702
(P.O.BOX 1088; AUSTIN, TX. 78767
512-974-3100

Address Of Property

LOYOLA LA.; APPROX. 2500' WEST OF THE
INTERSECTION OF LOYOLA LA. & DECKER LA.
AUSTIN, TX.
78724

Legal Description

ABS 4, SUR 19, BURLESON J, 208.157 AC.

Zoning Map Numbers

P25

Tax Parcel Identification Number

02-1831-0513

*Current Zoning

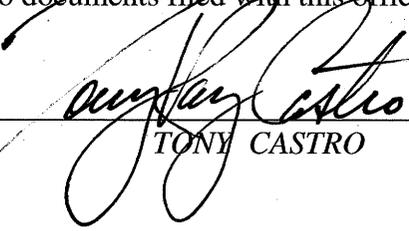
SF-2: SINGLE FAMILY RESIDENCE-STANDARD LOT;
SF-3: FAMILY RESIDENCE; MF-2: MULTI-FAMILY
RESIDENCE-LOW DENSITY

Case Number

SF-2: C7A-76-009 & ORD. NO.760617-D (LAND
DEVELOPMENT CODE CHPT.25-2-222) & CITY OF
AUSTIN ORDINANCE NUMBER 860206-K; SF-3: ORD.
NO.860206-K; MF-2: C14-73-228 & ORD. NO.810122-F

For questions concerning Zoning Compliance or any Development criteria, Parking, Permitted uses, Zoning violations, Conditional uses, Variances, Destruction and Rebuilding, etc. contact the Development Assistance Center of the City of Austin at (512)974-6370 for Land Use Planner correspondence session.

I, *TONY CASTRO*, Communications and Technology Management Office, City of Austin, Texas, do hereby certify that the information above is true and correct to the best of my ability, according to documents filed with this office.



TONY CASTRO



City of Austin

Communications and Technology Management

Overlays & Neighborhood Plans relative to parcel number 02-1831-0513 (Loyola La.; Approx. 2500' West of the Intersection of Decker La. & Loyola La.)

Overlays

Pipeline Restricted Area

Referenced in the Land Development Code of the City of Austin Chapter 25-2-516

Neighborhood Plans

N/A

Attached is information regarding the City of Austin Neighborhood Plans and their status to date. For information concerning these Neighborhood Plans and their current status and relativity to development, please contact the necessary personnel on the form attached with the City of Austin Neighborhood Planning Areas map.

***Zoning Subcategory: N/A**

*For information regarding Zoning Subcategories and their relativity to development, contact the Development Assistance Center at (512) 974-6370 and ask to speak to a Land Use Planner.

505 Barton Springs Rd.
Austin, Texas
78704



City of Austin

One Texas Center, 505 Barton Springs Rd. Austin, Texas 78704

ZONING VERIFICATION LETTER

Date: February 4, 2008

Party Requesting

COLE HUGGINS, P.E.
LJA ENGINEERING & SURVEYING, INC.
5316 HIGHWAY 290 WEST, STE.150
AUSTIN, TX. 78735
512-439-4700

Property Owner

AUSTIN HOUSING FINANCE CORPORATION
1000 E. 11TH ST.
AUSTIN, TX. 78702
(P.O.BOX 1088; AUSTIN, TX. 78767
512-974-3100

Address Of Property

LOYOLA LA.; APPROX. 2500' WEST OF THE
INTERSECTION OF LOYOLA LA. & DECKER LA.
AUSTIN, TX.
78724

Legal Description

ABS 4, SUR 19, BURLESON J, 14.669 AC.

Zoning Map Numbers

P25

Tax Parcel Identification Number

02-1831-0514

*Current Zoning

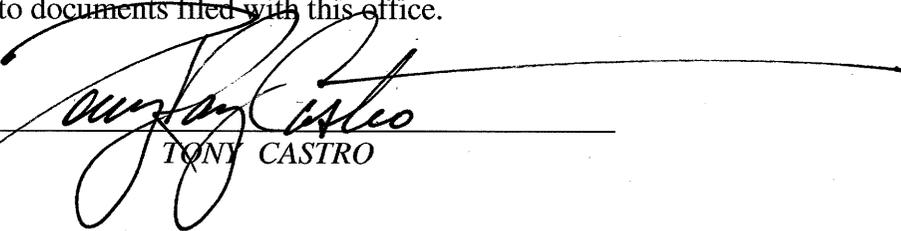
P: PUBLIC DISTRICT

Case Number

C14-03-0010 & ORD. NO.030306-Z-2

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TONY CASTRO



City of Austin

Communications and Technology Management

Overlays & Neighborhood Plans relative to parcel number 02-1831-0514 (Loyola La.; Approx. 2500' West of the Intersection of Decker La. & Loyola La.)

Overlays

N/A

Neighborhood Plans

N/A

Attached is information regarding the City of Austin Neighborhood Plans and their status to date. For information concerning these Neighborhood Plans and their current status and relativity to development, please contact the necessary personnel on the form attached with the City of Austin Neighborhood Planning Areas map.

***Zoning Subcategory: N/A**

*For information regarding Zoning Subcategories and their relativity to development, contact the Development Assistance Center at (512) 974-6370 and ask to speak to a Land Use Planner.

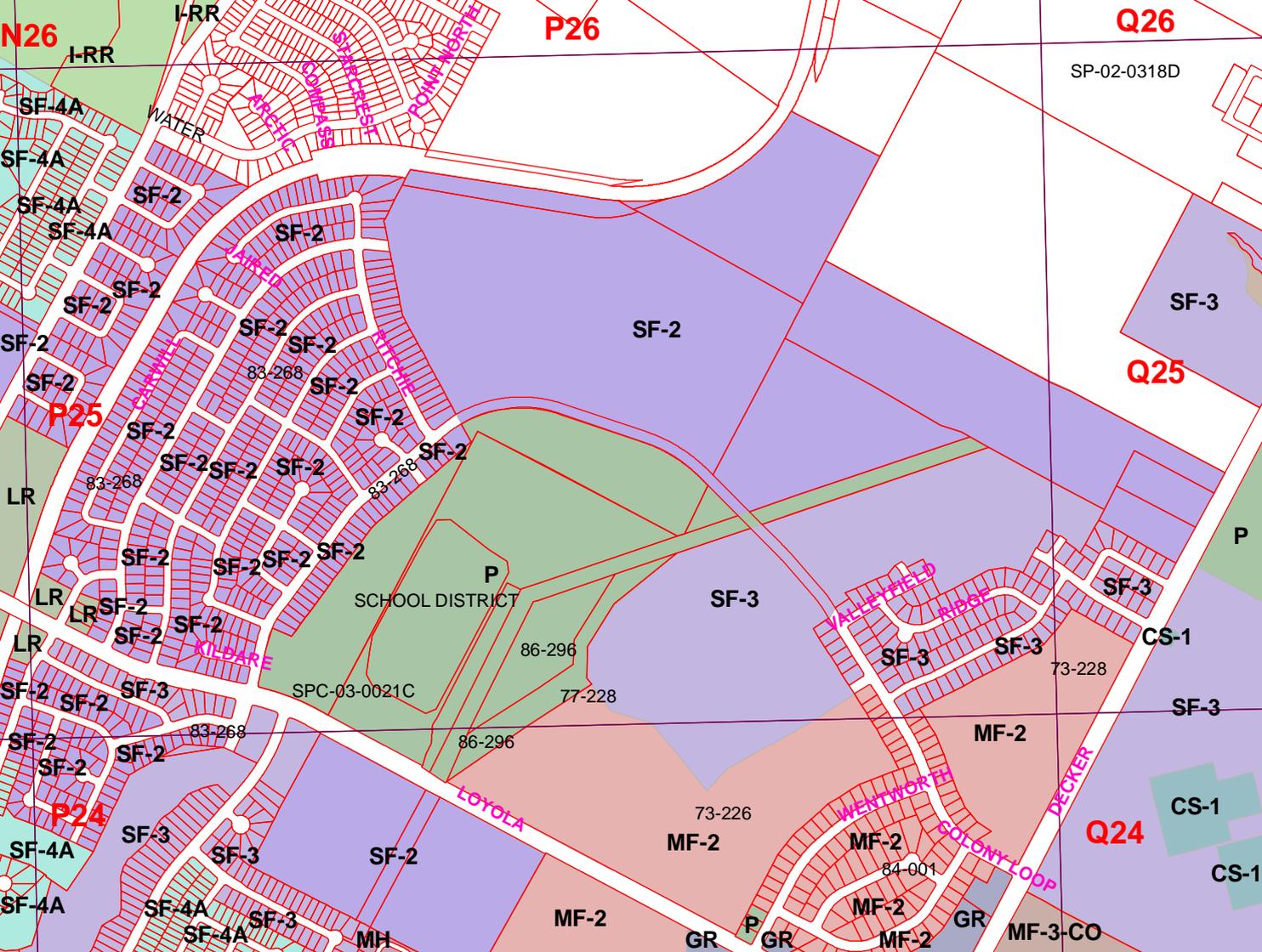


EXHIBIT 6
SCS SOIL SURVEY MAP

EXHIBIT 7
VERDI CONTEXT MAP

EXHIBIT 8
THE MEADOWS OF WALNUT CREEK PRELIMINARY

PRELIMINARY
THE MEADOWS OF WALNUT CREEK

LAND USE	LOTS	ACRES
SINGLE FAMILY	749	170.72
DUPLEX	95	21.89
FOUR-PLEX	109	40.81
APARTMENTS		35.88
TOTAL	269.30	

DATE: 7-10-84 / 10-5-84
 OWNER: M.G.N. CORP.
 11220 N. LAMAR BLVD.
 AUSTIN, TEXAS 78753

ENGINEER: COMMUNITY ENGINEERING, INC.
 ACRES = 269.30
 CONTOUR DATUM: CITY STANDARDS 2'
 INTERVALS

DENSITY:

SINGLE FAMILY	4.39	LOTS PER ACRE
DUPLEX	4.34	" " "
FOUR-PLEX	2.67	" " "

NOTE: AN EASEMENT OF (7.5') SEVEN AND A HALF FEET ALONG REAR OF ALL LOTS IS HEREBY DEDICATED FOR PUBLIC UTILITIES.

SCALE 1" = 200'

CLARENCE E. SCHIEFFER
 Vol. 1518 Pg. 20 (2-02)

TEDDIE G. DRAKE
 Vol. 5777 Pg. 15 (1-81)
 (2-03)

AUSTIN LAND INVESTMENTS LTD.
 VOL. 5172 Pg. 1157
 (4-02)

APARTMENTS
 B-B ZONING
 ORDINANCE NO. 810112-F
 24.34 ACRES
 BLOCK #1
 LOT # 31

APARTMENTS
 B-B ZONING
 ORDINANCE NO. 810112-F
 24.236 ACRES
 APPROVED PRELIMINARY
 (C8-73-70)

GLENN NEANS TRUSTEE
 PROPOSED WALNUT CREEK SECTION I & II
 APPROVED
 PRELIMINARY
 (C8-73-70)

APPROVED
 10-23-84
 PRELIMINARY

NOTE: SIDEWALKS WILL BE INSTALLED ON BOTH SIDES OF STREETS 64' OR LARGER, SIDEWALKS SHALL BE INSTALLED ON ONE SIDE OF 50' STREETS.

NOTE: PRIOR TO FINAL PLATTING, CONSTRUCTION OF DETENTION POND ON CITY OF AUSTIN PROPERTY MUST BE APPROVED BY PARKS AND RECREATION DEPARTMENT.

SITE LOCATION

THIS PRELIMINARY PLAN COMPLIES WITH ORDINANCE 13-3-27 OF THE CITY OF AUSTIN

Community Engineering
 ENGINEERING / PLANNING / SURVEYING
 Austin, Texas

design R.S.J.	drawn J.A.M.	checked G.C.	date 7-10-84
SHEET: PRELIMINARY PLAN			sheet 1 of 1

C8-84-100

C8-84-100

EXHIBIT 9
SERVICE EXTENSION REQUEST (1745-WATER) &
FIRE FLOW TEST

EXHIBIT 10
WATER/WASTEWATER MAPS (GRIDS P24 & P25)

CITY OF AUSTIN - WASTEWATER COLLECTION SYSTEM



Produced by the
Water &
Wastewater
Utility
City of Austin,
Texas



- Main**
- In Service, City Gravity Main
 - In Service, Private Gravity Main
 - In Service, Force Main
 - In Service, Private Force Main
 - In Service, Overflow Main
 - Proposed, Gravity Main
 - Proposed, Force Main
 - Abandoned Main
- Sludge Line**
- Sludge Line
- Manhole**
- Cleanout
 - Standard In Service
 - Standard Proposed
 - Older Control
 - Split
 - Metered
 - Tunnel Shaft
- Separator**
- Attribute Change
 - Maintained by Change
 - Material Change
 - Ownership Change
- Fitting**
- Discharge Point
 - Reducer
 - Connector
 - End of Line
- Valves**
- Air Release Valve
 - WW Valve Closed
- Lift Station**
- Lift Station
- Grade Break**
- Grade Break
 - Project Separator
 - Project Separator
- Backflow Preventer**
- Backflow Preventer
- Diversion Type**
- Levee
 - Weir
- WW Onsite Sewage Facility**
- Onsite Sewage
- Junction**
- Division Chamber
 - Junction Box
 - Mixing Chamber
- WW Facility**
- Alternative Pump
 - Discharge Outfall
 - Grit Chamber
 - Recycle Tank
 - Sump Pump
 - Wastewater Treatment Plant
- WW Disposal Pond**
- Disposal Pond

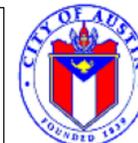
NOTE: THIS MAP IS PRODUCED FOR THE NEEDS OF THE CITY AND NO WARRANTY IS MADE AS TO ITS ACCURACY OR QUALITY.

1:1200 scale maps are available for this grid; additional labels may be visible.



Last Update:
09-18-2007
Map Sheet
P25

CITY OF AUSTIN - WASTEWATER COLLECTION SYSTEM



Produced by the
Water &
Wastewater
Utility
City of Austin,
Texas



- Main**
- In Service, City Gravity Main
 - In Service, Private Gravity Main
 - In Service, Force Main
 - In Service, Private Force Main
 - In Service, Overflow Main
 - Proposed, Gravity Main
 - Proposed, Force Main
 - Abandoned Main
- Sludge Line**
- Sludge Line
- Manhole**
- Cleanout
 - Standard In Service
 - Standard Proposed
 - Odor Control
 - Split
 - Metered
 - Tunnel Shaft
- Separator**
- Attribute Change
 - Maintained by Change
 - Material Change
 - Ownership Change
- Fitting**
- Discharge Point
 - Reducer
 - Connector
 - End of Line
- Valves**
- Air Release Valve
 - WW Valves Closed
- Lift Station**
- Lift Station
- Grade Break**
- Grade Break
 - Project Separator
 - Project Separator
 - Backflow Preventer
 - Backflow Preventer
- Diversion Type**
- Weir
- WW Onsite Sewage Facility**
- Onsite Sewage
- Junction**
- Junction Chamber
 - Junction Box
 - Mixing Chamber
- WW Facility**
- Alternative Pump
 - Discharge Outfall
 - Grinder Pump
 - Recycle Tank
 - Sump Pump
 - Wastewater Treatment Plant
- WW Disposal Pond**
- Disposal Pond

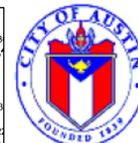
NOTE: THIS MAP IS PRODUCED FOR THE NEEDS OF THE CITY AND NO WARRANTY IS MADE AS TO ITS ACCURACY OR QUALITY.

1:1200 scale maps are available for this grid; additional labels may be visible.



Last Update:
01-05-2008
Map Sheet
P24

CITY OF AUSTIN - WATER DISTRIBUTION SYSTEM



Produced by the
Water &
Wastewater
Utility
City of Austin,
Texas



- Main**
- In Service, City Maint.
 - - - In Service, Private Maint.
 - Proposed
 - Abandoned
- Hydrant**
- Hydrant
 - Hydrant Proposed
- Operating Valve**
- X Closed
 - Open
- Separator**
- Attribute Change
 - Maintained By Change
 - Material Change
 - Ownership Change
- Project Separator**
- Project Separator
- Zone Valve**
- X Boundary Valve
 - Double Check Valve
 - Check Valve
 - Pressure Reducing Valve
 - Pressure Sustaining Valve
- Fitting**
- Water Connector
 - Water Fireline
 - Water Plug
 - ▼ Water Reducer
- Control Valve**
- Automatic Air Release Valve
 - Drain Valve
 - Flush Valve
 - Hydrant PRV
 - Manual Air Release Valve
 - Vacuum - Combination A/RV
 - Vacuum Release Valve
- Water Connection**
- Water Connection
 - Meter
 - Water Meter
- Backflow Preventer**
- Backflow Preventer
- Inspection Manhole**
- Inspection Manhole
 - Inspection Manhole with Valve
- Drain Manhole**
- Drain Manhole
- Facilities**
- Water Treatment Plant
 - Pump Station
 - Reservoir
 - Sampling Port
 - Hydro Tank
 - Water Well

Last Update:
01-05-2008

Map Sheet
P24

NOTE: THIS MAP IS PRODUCED FOR THE NEEDS OF THE CITY AND NO WARRANTY IS MADE AS TO ITS ACCURACY OR QUALITY.

1:1200 scale maps are available for this grid; additional labels may be visible.



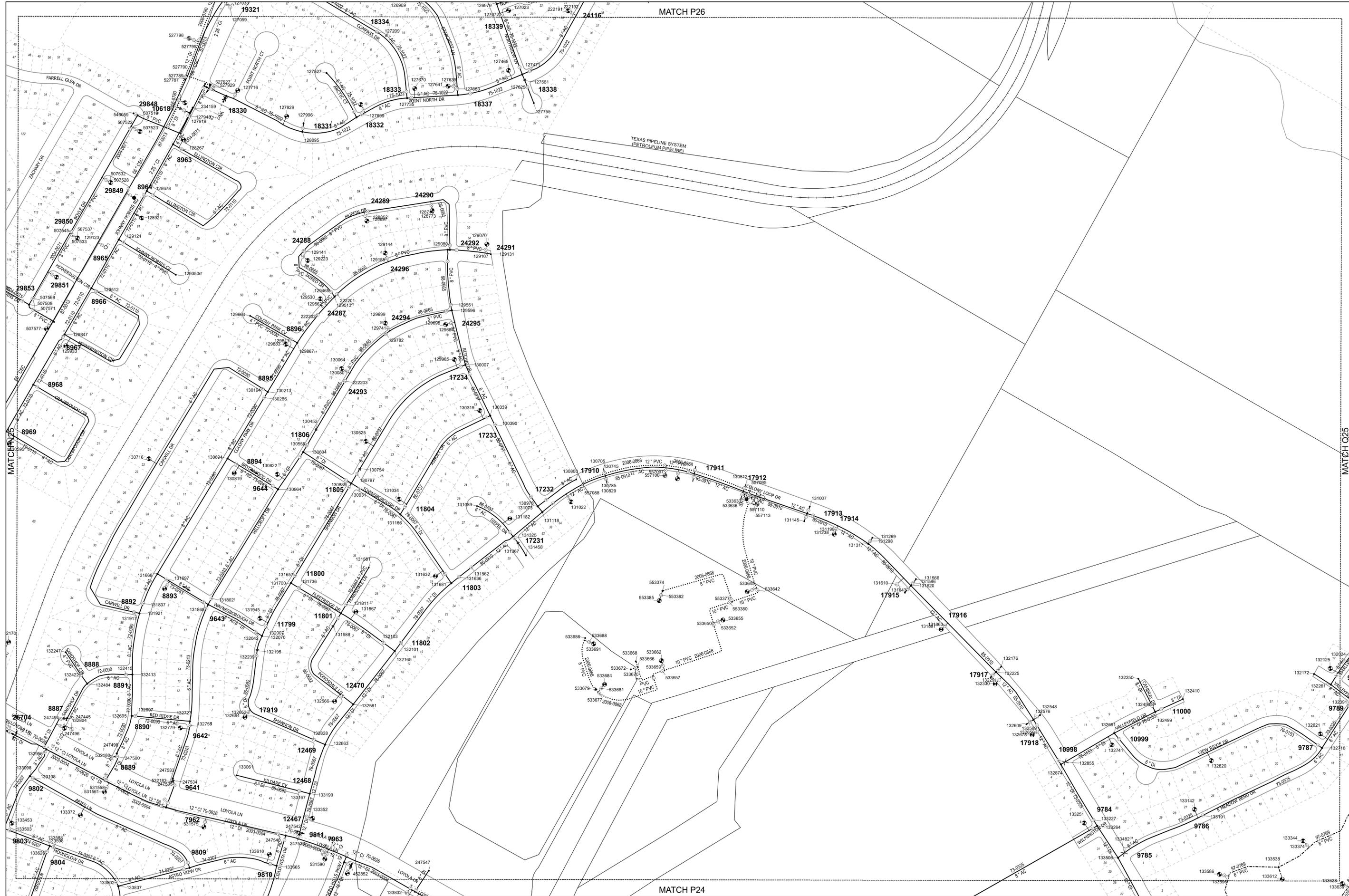
CITY OF AUSTIN - WATER DISTRIBUTION SYSTEM



Produced by the
Water &
Wastewater
Utility
City of Austin,
Texas

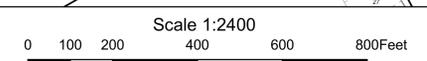


- Main**
- In Service, City Maint.
 - - - In Service, Private Maint.
 - Proposed
 - Abandoned
- Hydrant**
- Hydrant
 - Hydrant Proposed
- Operating Valve**
- X Closed
 - Open
- Separator**
- Attribute Change
 - Maintained By Change
 - Material Change
 - Ownership Change
- Project Separator**
- Project Separator
- Zone Valve**
- Boundary Valve
 - Double Check Valve
 - Check Valve
 - Pressure Reducing Valve
 - Pressure Sustaining Valve
- Fitting**
- Water Connector
 - Water Fitting
 - Water Plug
 - Water Reducer
- Control Valve**
- Automatic Air Release Valve
 - Drain Valve
 - Flush Valve
 - Hydrant PRV
 - Manual Air Release Valve
 - Vacuum - Combination A/RV
 - Vacuum Release Valve
- Water Connection**
- Water Connection
 - Water Meter
- Meter**
- Water Meter
- Backflow Preventer**
- Backflow Preventer
- Inspection Manhole**
- Inspection Manhole
 - Inspection Manhole with Val
- Drain Manhole**
- Drain Manhole
- Facilities**
- Water Treatment Plant
 - Pump Station
 - Reservoir
 - Sampling Port
 - Hydro Tank
 - Water Well



NOTE: THIS MAP IS PRODUCED FOR THE NEEDS OF THE CITY AND NO WARRANTY IS MADE AS TO ITS ACCURACY OR QUALITY.

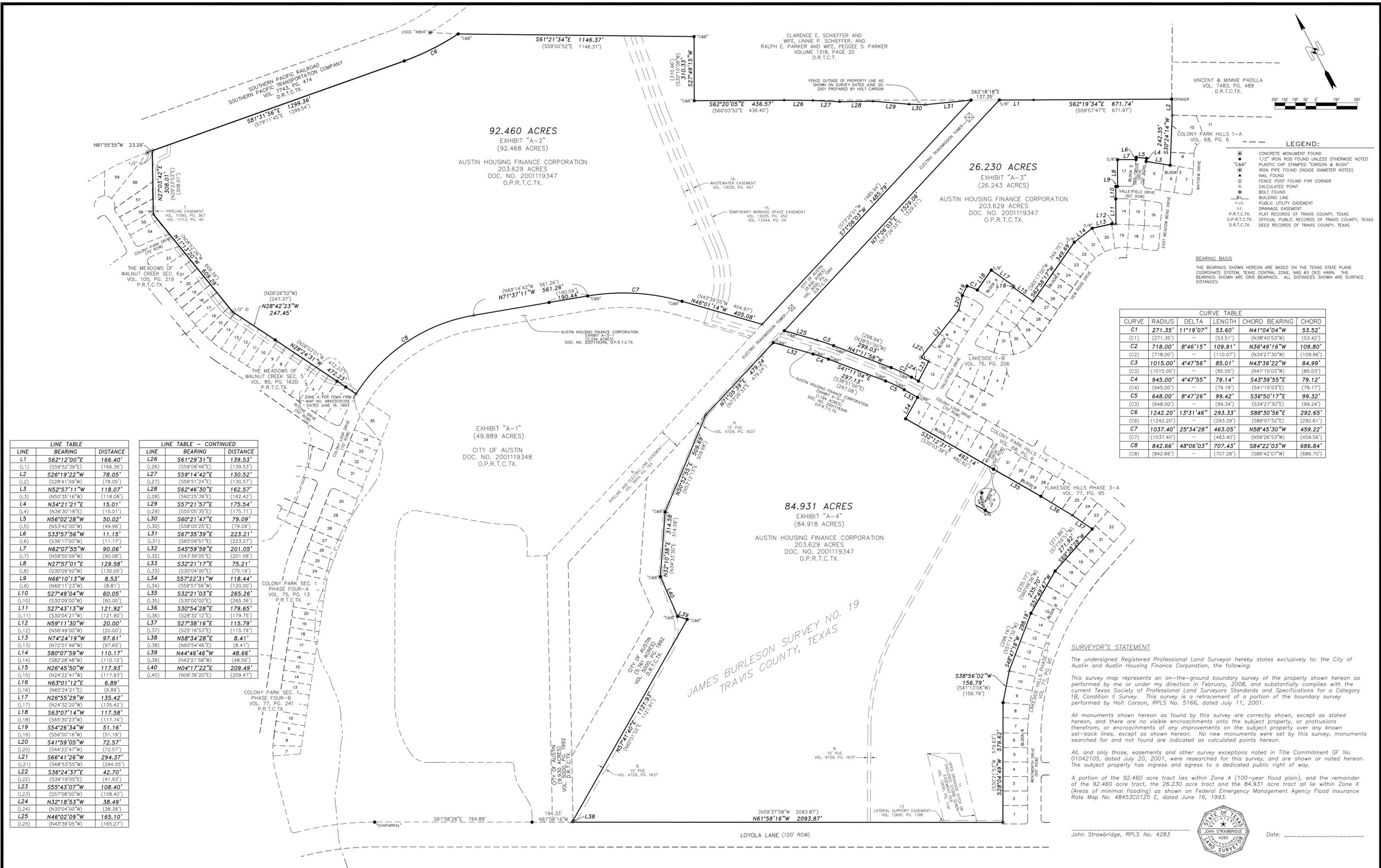
1:1200 scale maps are available for this grid;
additional labels may be visible.



Last Update:
01-05-2008
Map Sheet
P25

EXHIBIT 11
CONSTRAINT/SLOPE MAP

EXHIBIT 12
TITLE SURVEY



LEGEND:

- CONCRETE MONUMENT FOUND
- 1/2" IRON ROD FOUND UNLESS OTHERWISE NOTED
- PLASTIC CAP STAMPED "CARSON & BUSH"
- IRON PIPE FOUND (INSIDE DIAMETER NOTED)
- NAIL FOUND
- FENCE POST FOUND
- CALCULATED POINT FOR CORNER
- BOLT FOUND
- BUILDING LINE
- PUBLIC UTILITY EASEMENT
- DRAINAGE EASEMENT
- P.R.T.C.T.X. PLAT RECORDS OF TRAVIS COUNTY, TEXAS
- O.P.R.T.C.T.X. OFFICIAL PUBLIC RECORDS OF TRAVIS COUNTY, TEXAS
- D.R.T.C.T.X. DEED RECORDS OF TRAVIS COUNTY, TEXAS

BEARING BASIS
 THE BEARINGS SHOWN HEREON ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, TEXAS CENTRAL ZONE, NAD 83 (93) HARN. THE BEARINGS SHOWN ARE GRID BEARINGS. ALL DISTANCES SHOWN ARE SURFACE DISTANCES.

CURVE TABLE

CURVE	RADIUS	DELTA	LENGTH	CHORD BEARING	CHORD
C1	271.35'	11°19'07"	53.60'	N41°04'04"W	53.52'
(C1)	(271.35')	-	(53.51')	(N38°40'53"W)	(53.42')
C2	718.00'	8°46'15"	109.91'	N36°49'16"W	109.80'
(C2)	(718.00')	-	(110.07')	(N34°27'30"W)	(109.99')
C3	1015.00'	4°47'56"	85.01'	N43°36'22"W	84.99'
(C3)	(1015.00')	-	(85.05')	(N41°15'03"W)	(85.03')
C4	945.00'	4°47'55"	79.14'	S43°39'55"E	79.12'
(C4)	(945.00')	-	(79.19')	(S41°15'03"E)	(79.17')
C5	648.00'	8°47'26"	99.42'	S36°50'17"E	99.32'
(C5)	(648.00')	-	(99.34')	(S34°27'30"E)	(99.24')
C6	1242.20'	13°31'46"	293.33'	S88°30'56"E	292.65'
(C6)	(1242.20')	-	(293.29')	(S86°07'52"E)	(292.61')
C7	1037.40'	25°34'28"	463.05'	N58°45'30"W	459.22'
(C7)	(1037.40')	-	(463.40')	(N56°26'53"W)	(459.56')
C8	842.66'	48°06'03"	707.43'	S84°22'03"W	686.84'
(C8)	(842.66')	-	(707.28')	(S86°42'07"W)	(686.70')

LINE TABLE

LINE	BEARING	DISTANCE
L1	S62°12'00"E	166.40'
(L1)	(S59°52'39"E)	(166.36')
L2	S28°19'22"W	78.05'
(L2)	(S28°41'09"W)	(78.05')
L3	N52°57'11"W	118.07'
(L3)	(N50°35'16"W)	(118.08')
L4	N34°21'21"E	15.01'
(L4)	(N36°30'18"E)	(15.01')
L5	N56°02'28"W	50.02'
(L5)	(N53°42'00"W)	(49.96')
L6	S33°57'56"W	11.15'
(L6)	(S36°17'00"W)	(11.17')
L7	N62°07'55"W	90.06'
(L7)	(N59°50'09"W)	(90.08')
L8	N27°57'01"E	129.58'
(L8)	(S30°09'50"W)	(130.05')
L9	N66°10'13"W	8.53'
(L9)	(N60°11'23"W)	(8.81')
L10	S27°49'04"W	60.05'
(L10)	(S30°09'00"W)	(60.00')
L11	S27°43'13"W	121.92'
(L11)	(S30°04'21"W)	(121.90')
L12	N59°11'30"W	20.00'
(L12)	(N56°49'00"W)	(20.00')
L13	N74°24'19"W	97.61'
(L13)	(N72°01'49"W)	(97.65')
L14	S80°07'59"W	110.17'
(L14)	(S82°28'48"W)	(110.12')
L15	N26°45'50"W	117.93'
(L15)	(N24°22'41"W)	(117.93')
L16	N63°01'12"E	6.89'
(L16)	(N65°24'21"E)	(6.89')
L17	N26°55'29"W	135.42'
(L17)	(N24°32'20"W)	(135.42')
L18	S63°07'14"W	117.58'
(L18)	(S65°30'23"W)	(117.74')
L19	S54°26'34"W	51.16'
(L19)	(S56°50'16"W)	(51.19')
L20	S41°59'05"W	72.57'
(L20)	(S44°22'47"W)	(72.57')
L21	S66°41'26"W	294.37'
(L21)	(S68°53'55"W)	(294.55')
L22	S36°24'37"E	42.70'
(L22)	(S34°19'00"E)	(41.93')
L23	S55°43'07"W	108.40'
(L23)	(S57°58'00"W)	(108.40')
L24	N32°18'53"W	38.49'
(L24)	(N30°04'00"W)	(38.39')
L25	N46°02'09"W	165.10'
(L25)	(N43°39'05"W)	(165.27')

LINE TABLE - CONTINUED

LINE	BEARING	DISTANCE
L26	S61°29'31"E	139.53'
(L26)	(S59°08'46"E)	(139.53')
L27	S59°14'42"E	130.52'
(L27)	(S58°51'24"E)	(130.57')
L28	S62°46'30"E	162.57'
(L28)	(S60°25'39"E)	(162.42')
L29	S57°21'57"E	175.54'
(L29)	(S55°05'35"E)	(175.71')
L30	S60°21'47"E	79.09'
(L30)	(S58°05'25"E)	(79.09')
L31	S67°35'39"E	223.21'
(L31)	(S65°09'51"E)	(223.27')
L32	S45°59'59"E	201.05'
(L32)	(S43°39'05"E)	(201.08')
L33	S32°21'17"E	75.21'
(L33)	(S30°04'00"E)	(75.19')
L34	S57°22'31"W	118.44'
(L34)	(S59°57'56"W)	(120.00')
L35	S32°21'03"E	265.26'
(L35)	(S30°00'00"E)	(265.36')
L36	S30°54'28"E	179.65'
(L36)	(S28°32'12"E)	(179.75')
L37	S27°38'16"E	115.79'
(L37)	(S25°16'53"E)	(115.79')
L38	N58°34'28"E	8.41'
(L38)	(N60°54'46"E)	(8.41')
L39	N44°46'46"W	48.66'
(L39)	(N42°21'58"W)	(48.56')
L40	N04°17'22"E	209.49'
(L40)	(N06°36'20"E)	(209.47')

DATE	BY	REVISIONS

ZWA
 Zamora-Warrick and Associates, L.L.C.
 Professional Land Surveyors
 5316 Highway 290 West, Suite 150 • Austin, Texas 78735
 Tel: (512) 899-3333 • Fax: (512) 899-0655

PROJECT: Colony Park Boundary Retracement Survey
JOB NUMBER: 07-018-01
DATE: Feb. 2008
SCALE: 1"=200'
SURVEYOR: Strawbridge
TECHNICIAN: Clark
DRAWING: 07-018-01-BASE.dwg
FIELD NOTES:
PARTY CHIEF: B.B., G.G.
FIELD BOOKS: Book No. 298

203.621 ACRES
 JAMES BURLESON SURVEY NO. 19
 TRAVIS COUNTY, TEXAS

SHEET
 1
 OF
 1
 ZWA PLAT No.
 07-018-01

SURVEYOR'S STATEMENT
 The undersigned Registered Professional Land Surveyor hereby states exclusively to the City of Austin and Austin Housing Finance Corporation, the following:
 This survey map represents an on-the-ground boundary survey of the property shown hereon as performed by me or under my direction in February, 2008, and substantially complies with the current Texas Society of Professional Land Surveyors Standards and Specifications for a Category 1B, Condition II Survey. This survey is a retracement of a portion of the boundary survey performed by Holt Carson, RPLS No. 5166, dated July 11, 2001.
 All monuments shown hereon as found by this survey are correctly shown, except as stated hereon, and there are no visible encroachments on the subject property, or protrusions therefrom, or encroachments of any improvements on the subject property over any known set-back lines, except as shown hereon. No new monuments were set by this survey; monuments searched for and not found are indicated as calculated points hereon.
 All, and only those, easements and other survey exceptions noted in Title Commitment GF No. 01042105, dated July 20, 2001, were researched for this survey, and are shown or noted hereon. The subject property has ingress and egress to a dedicated public right of way.
 A portion of the 92.460 acre tract lies within Zone A (100-year flood plain), and the remainder of the 92.460 acre tract, the 26.230 acre tract and the 84.931 acre tract all lie within Zone X (Areas of minimal flooding) as shown on Federal Emergency Management Agency Flood Insurance Rate Map No. 48453C0125 E, dated June 16, 1993.

John Strawbridge, RPLS No. 4283 Date: _____

EXHIBIT 13
FEMA FIRM Panel No. 48453C0125E

1 National Geodetic Vertical Datum of 1929

ZONE A

ZONE X

ZONE A

WALTER E. LONG LAKE

PACIFIC RAILROAD

ZONE X

ZONE A

BR 570

City of Austin
480624

HOG EYE

Travis County
Incorporated Areas
481026

TRAVIS COUNTY
CITY OF AUSTIN

FM 3177

577

DECKER LAKE

581



APPROXIMATE SCALE

800 0 900 FEET

NATIONAL FLOOD INSURANCE PROGRAM

**FIRM
FLOOD INSURANCE RATE MAP
TRAVIS COUNTY,
TEXAS AND
INCORPORATED AREAS**

PANEL 90 OF 410
(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
AUSTIN, CITY OF	480624	0090	E
UNINCORPORATED AREAS	481026	0090	F

Notice To User: The MAP NUMBER shown below should be used when placing map orders; the COMMUNITY NUMBER shown above should be used on insurance applications for the subject community.

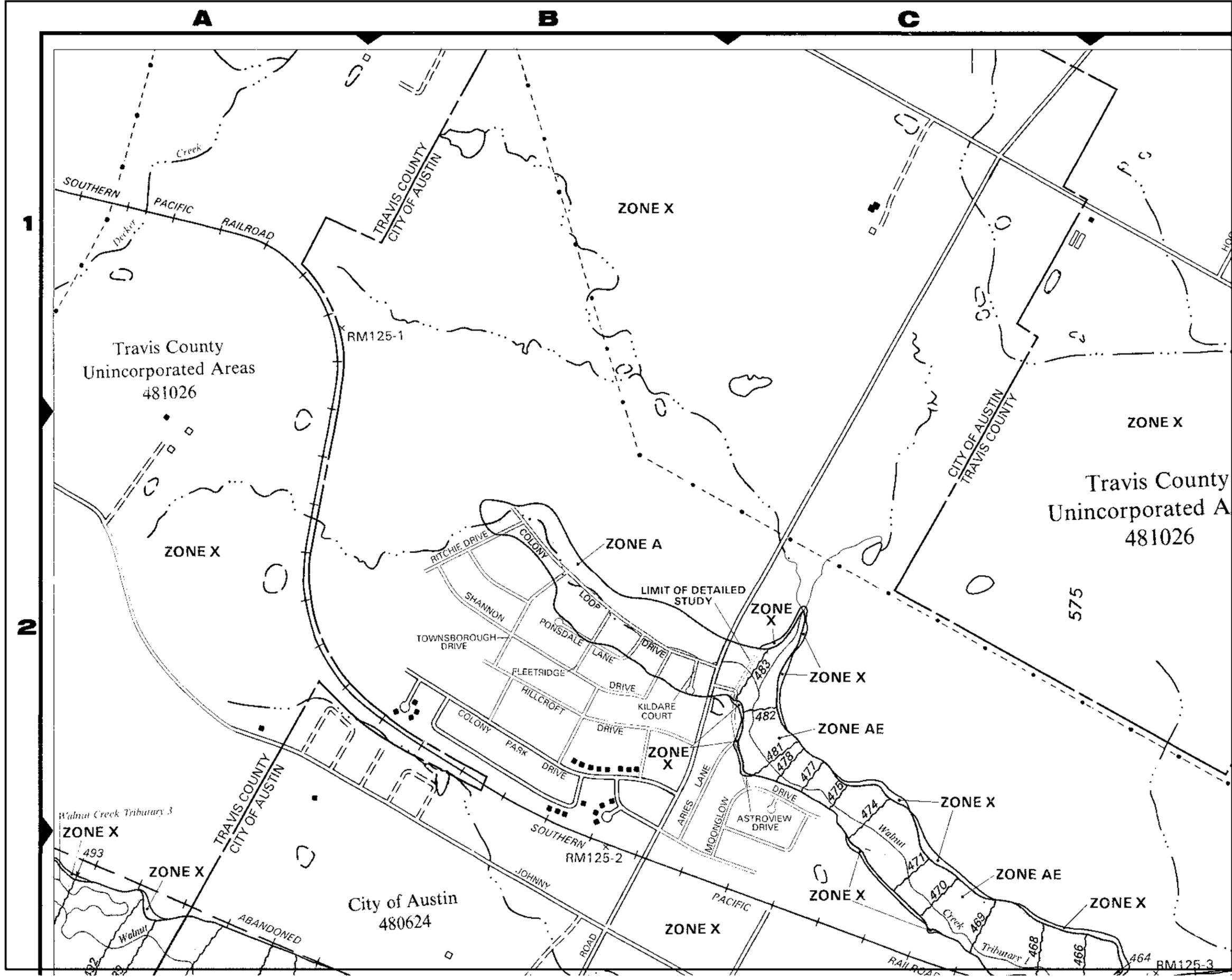
MAP NUMBER
48453C0090 E

EFFECTIVE DATE:
JUNE 16, 1993



Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



APPROXIMATE SCALE
800 0 800 FEET

NATIONAL FLOOD INSURANCE PROGRAM

**FIRM
FLOOD INSURANCE RATE MAP
TRAVIS COUNTY,
TEXAS AND
INCORPORATED AREAS**

PANEL 125 OF 410
(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
AUSTIN, CITY OF	480624	0125	E
UNINCORPORATED AREAS	481026	0125	E

Notice To User: The MAP NUMBER shown below should be used when placing map orders; the COMMUNITY NUMBER shown above should be used on insurance applications for the subject community.

**MAP NUMBER
48453C0125 E**

**EFFECTIVE DATE:
JUNE 16, 1993**



Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Appendix A

GENERAL WARRANTY DEED (2001119347)

'rc

GENERAL WARRANTY DEED

DATE: July 13, 2001

GRANTOR: John Scardino and Haythem S. Dawlett

GRANTOR'S MAILING ADDRESS: 31200 Via Colinas, Suite 200
Westlake Village, California 91362

GRANTEE: Austin Housing Finance Corporation, a Texas public non-profit corporation

GRANTEE'S MAILING ADDRESS: P.O. Box 1088
Austin, Texas 78767-8839
Attention Austin Housing Finance Corporation

CONSIDERATION: Ten Dollars (\$10 00) and other valuable consideration, the receipt and sufficiency of which are hereby acknowledged.

PROPERTY (Including any improvements):

All that certain tract of land situated in Travis County, Texas, generally described as 203 629 acres of land, more or less, as more fully described on **Exhibit "A"**, attached hereto and incorporated herein for all pertinent purposes, and together with any improvements and fixtures thereon, and any and all rights and appurtenances pertaining to the "Property", including any development rights, utility rights which are appurtenant to, or allocated to the "Property", including, but not limited to, all water and wastewater rights allocable to the Property, including without limitation any exemption from payment of water and wastewater capital recovery fees that may exist in connection with Ordinance No. 970305-B, or any applicable successor ordinance, all easements appurtenant, and any right, title and interest of Seller in and to minerals, mineral rights and royalty interests, adjacent streets, alleys, and rights of way related to the "Property". All of such real property, rights, interests and appurtenances are collectively defined as the "Property".

RESERVATIONS FROM AND EXCEPTIONS TO CONVEYANCE AND WARRANTY:

This conveyance is subject to those matters on **Exhibit "B"** attached hereto and incorporated herein, to the extent, if any, that they are valid and subsisting against the Property or any part thereof (the "Permitted Exceptions") Ad valorem taxes for the current year have been prorated, and are assumed by Grantee

Grantor, for the consideration and subject to the reservations from and exceptions to conveyance and warranty set forth herein, GRANTS, SELLS, AND CONVEYS to Grantee the Property, together with all and singular the rights and appurtenances thereto in any wise belonging, to have and hold it to Grantee, Grantee's successors or assigns forever Grantor hereby binds Grantor and Grantor's successors and assigns to WARRANT AND FOREVER DEFEND all

and singular the Property to Grantee, Grantee's successors and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof, except as to the reservations from and exceptions to conveyance and warranty set out herein. Grantor does not retain any liens, express or implied, against the Property.

When the context requires, singular nouns and pronouns include the plural.

GRANTOR:



HAYTHEM S DAWLETT, individually and as
Attorney-in-Fact on behalf of JOHN SCARDINO

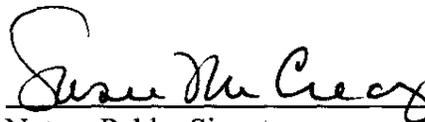
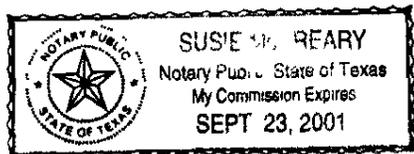
ACKNOWLEDGMENT

STATE OF TEXAS §

COUNTY OF TRAVIS §

This instrument was acknowledged before me the 13 day of July, 2001, by Haythem S Dawlett, individually and as attorney-in-fact on behalf of John Scardino

(seal)



Notary Public Signature

AFTER RECORDING, RETURN TO:

City of Austin
P.O. Box 1088
Austin, Texas 78767-8839
Attention Real Estate Services Division
File #3688 64-02 (JMP)
TCAD No. 02-1831-0501

EXHIBIT "A"

Approximately 203.629 acres of land, more or less, in Travis County, Texas, as more fully described on **Exhibits "A-2", "A-3" and "A-4"**.

CARSON AND BUSH
PROFESSIONAL SURVEYORS, INC.
1904 FORTVIEW ROAD
AUSTIN, TX 78704
TELEPHONE (512) 442-0990
FACSIMILE (512) 442-1084

JUNE 20, 2001

FIELD NOTE DESCRIPTION OF 92 468 ACRES OF LAND OUT OF THE JAMES BURLESON SURVEY No 19 ABSTRACT No 4 IN TRAVIS COUNTY, TEXAS, BEING A PORTION OF THAT CERTAIN (169 714 ACRE) TRACT OF LAND DESCRIBED AS "TRACT 1" AND AS CONVEYED TO JOHN SCARDINO AND HAYTHEM S DAWLETT BY SPECIAL WARRANTY DEED RECORDED IN VOLUME 12136 PAGE 2467 OF THE REAL PROPERTY RECORDS OF TRAVIS COUNTY, TEXAS, AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS

BEGINNING at a ½" iron pipe found in the South line of that certain (2 51 acre) tract of land as conveyed to Southern Pacific Transportation Company by deed recorded in Volume 7743 Page 474 of the Deed Records of Travis County, Texas, for the Northeasterly corner of Lot 58, Block L, The Meadows of Walnut Creek Section Six, a subdivision in Travis County, Texas, according to the map or plat thereof recorded in Volume 100 Page 210 of the Plat Records of Travis County, Texas, and for the Northwesterly corner of that certain (169 714 acre) tract of land as conveyed to John Scardino and Haythem Dawlett by Special Warranty Deed recorded in Volume 12136 Page 2467 of the Real Property Records of Travis County, Texas, and being the Northwesterly corner and **PLACE OF BEGINNING** of the herein described tract,

THENCE with the common line of said Scardino (169 714 acre) tract and said Southern Pacific Transportation Company (2 51 acre) tract, the following two (2) courses,

- 1) S 79 deg 11' 45" E 1299 54 ft to a ½" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors" for a point of curvature,
- 2) along a curve to the left with a radius of 1242 20 ft for an arc length of 293 29 ft and which chord bears S 86 deg 07' 52" E 292 61 ft to a ½" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors" in the Southerly line of that certain (36 5 acre) tract of land as conveyed to Clarence E Schieffer, et al, by deed recorded in Volume 1318 Page 20 of the Deed Records of Travis County, Texas, for the most Easterly corner of said Southern Pacific Transportation Company (2 51 acre) tract and for an angle corner of said Scardino (169 714 acre) tract, and being an angle corner of this tract,

THENCE with a Northerly line of said Scardino (169 714 acre) tract, S 59 deg 00' 52" E 1146 31 ft to a ½" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors" for the Southeast corner of said Schieffer (36 5 acre) tract and being in the Westerly line of that certain (32 acre) tract of land as conveyed to Clarence E Schieffer, et al, by deed recorded in Volume 1318 Page 20 of the Deed Records of Travis County, Texas, and being an angle corner of said Scardino (169 714 acre) tract, and being an angle corner of this tract,

THENCE, S 30 deg 10' 08" W 310 46 ft to a ½" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors" for the Southwesterly corner of said Schieffer (32 acre) tract and for an angle corner of said Scardino (169 714 acre) tract, and being an angle corner of this tract,

**AND AT GRANTEE'S REQUEST SUBDIVIDED THE LAND INTO 4 SEPARATE TRACTS, OF WHICH A-1 IS BEING CONVEYED TO THE CITY OF AUSTIN-PARKS AND RECREATION DEPARTMENT FOR PARKLAND PURPOSES
end of Page 1

EXHIBIT "A-2"

Page 2 of 3

THENCE with a Northerly line of said Scardino (169 714 acre) tract, the following seven (7) courses,

- 1) S 60 deg 03' 52" E 436 40 ft to a 60D nail found,
- 2) S 59 deg 08' 46" E 139 53 ft to a 60D nail found,
- 3) S 56 deg 51' 24" E 130 57 ft to a 60D nail found,
- 4) S 60 deg 25' 39" E 162 42 ft to a 60D nail found,
- 5) S 55 deg 05' 35" E 175 71 ft to a 60D nail found,
- 6) S 58 deg 05' 25" E 79 09 ft to a 60D nail found,
- 7) S 65 deg 09' 51" E 223 27 ft to a ½" iron rod found for the Northeasterly corner of said Scardino (169 714 acre) tract and for the Northwesterly corner of that certain (9 930 acre) tract of land as conveyed to the City of Austin by deed recorded in Volume 5000 Page 1992 of the Deed Records of Travis County, Texas, and being the Northeasterly corner of this tract,

THENCE with the common line of said Scardino (169 714 acre) tract and said City of Austin (9 930 acre) tract, S 73 deg 26' 01" W 1485 94 ft to a ½" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors" for the Southeasterly corner of this tract,

THENCE crossing the interior of said Scardino (169 714 acre) tract, the following four (4) courses,

- 1) N 43 deg 39' 05" W 404 97 ft to a ½" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors" for a point of curvature,
- 2) along a curve to the left with a radius of 1037 40 ft for an arc length of 463 40 ft and which chord bears N 56 deg 26' 53" W 459 56 ft to a ½" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors" for a point of tangency,
- 3) N 69 deg 14' 42" W at 190 59 ft passing a ½" iron rod found, and continuing along the same course for a total distance of 561 26 ft to a ½" iron rod found for a point of curvature,
- 4) along a curve to the left with a radius of 842 66 ft for an arc length of 707 28 ft and which chord bears S 86 deg 42' 07" W 686 70 ft to a ½" iron rod set at the point of termination of the curving Northerly right-of-way line of Colony Loop Drive for the Southeasterly corner of Lot 1, Block P, The Meadows of Walnut Creek Section Five, a subdivision in Travis County, Texas, according to the map or plat thereof recorded in Volume 86 Page 162D of the Plat Records of Travis County, Texas, and being the Southwesterly corner of this tract,

end of Page 2

THENCE with the Westerly line of said Scardino (169 714 acre) tract, the following four (4) courses,

- 1) N 26 deg 03' 01" W 472 23 ft to a ½" iron rod found in the Easterly line of Lot 10, Block P, of said The Meadows of Walnut Creek Section Five,
- 2) N 26 deg 26' 52" W 247 37 ft to a ½" iron rod found in the Easterly line of Lot 15, Block P, of said The Meadows of Walnut Creek Section Five,
- 3) N 08 deg 52' 26" W 609 39 ft to a ½" iron rod found in the Easterly line of Lot 55, Block L, of said The Meadows of Walnut Creek Section Six,
- 4) N 29 deg 23' 53" E 308 01 ft to the **PLACE OF BEGINNING**, containing 92 468 acres of land

SURVEYED June, 2001



Holt Carson
Registered Professional Land Surveyor No 5166

reference map B 652052



FIELD NOTES REVIEWED

By *Mike Carter* Date *07/27/01*

Engineering Support Section
Department of Public Works
and Transportation

CARSON AND BUSH
PROFESSIONAL SURVEYORS, INC.
1904 FORTVIEW ROAD
AUSTIN, TX 78704
TELEPHONE (512) 442-0990
FACSIMILE (512) 442-1084

JUNE 20, 2001

FIELD NOTE DESCRIPTION OF 26 243 ACRES OF LAND OUT OF THE JAMES BURLESON SURVEY No 19 ABSTRACT No 4 IN TRAVIS COUNTY, TEXAS, BEING A PORTION OF THAT CERTAIN (112 816 ACRE) TRACT OF LAND DESCRIBED AS "TRACT 2" AND AS CONVEYED TO JOHN SCARDINO AND HAYTHEM S DAWLETT BY SPECIAL WARRANTY DEED RECORDED IN VOLUME 12136 PAGE 2467 OF THE REAL PROPERTY RECORDS OF TRAVIS COUNTY, TEXAS,** AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS

BEGINNING at a 1/2" iron rod found for an angle corner in the Easterly line of that certain (112 816 acre) tract of land as conveyed to John Scardino and Haythem S Dawlett by Special Warranty Deed recorded in Volume 12136 Page 2467 of the Real Property Records of Travis County, Texas, for the most Northerly or Northwest corner of Lot 10, Block 3, Colony Park Hills 1-A, a subdivision in Travis County, Texas, according to the map or plat thereof recorded in Volume 68 Page 6 of the Plat Records of Travis County, Texas, and for the Southwesterly corner of that certain (3 288 acre) tract of land as conveyed to Vicente Padilla, et ux, by deed recorded in Volume 7483 Page 489 of the Deed Records of Travis County, Texas, and being an angle corner and **PLACE OF BEGINNING** of the herein described tract,

THENCE with the common line of said Scardino (112 816 acre) tract and said Colony Park Hills 1-A, the following ten (10) courses,

- 1) S 32 deg 46' 18" W 242 45 ft to a 1/2" iron rod found in the North line of Lot 6, Block 3 of said Colony Park Hills 1-A,
- 2) N 50 deg 35' 16" W 118 08 ft to a 1/2" iron rod found in the Easterly right-of-way line of Smallwood Drive,
- 3) N 36 deg 30' 18" E 15 01 ft to a 1/2" iron rod found at the point of termination of the Easterly right-of-way line of Smallwood Drive,
- 4) N 53 deg 42' W 49 96 ft to a 1/2" iron rod found at the point of termination of the Westerly right-of-way line of Smallwood Drive,
- 5) S 36 deg 17' 00" W 11 17 ft to a 1/2" iron rod found in the Westerly right-of-way line of Smallwood Drive for the Northeast corner of Lot 17, Block 5, of said Colony Park Hills 1-A,
- 6) N 59 deg 50' 09" W 90 08 ft to a 1/2" iron rod found for the Northwesterly corner of said Lot 17, Block 5, Colony Park Hills 1-A,
- 7) S 30 deg 09' 50" W 130 05 ft to a 1/2" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors" in the North right-of-way line of Valleyfield Drive for the Southwesterly corner of said Lot 17, Block 5,
- 8) N 60 deg 11' 23" W 8 81 ft to a 1/2" iron rod found at the point of termination of the North right-of-way line of Valleyfield Drive,
- 9) S 30 deg 09' W 60 00 ft to a 1/2" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors" at the point of termination of the South right-of-way line of Valleyfield Drive for the Northwesterly corner of Lot 14, Block 6, of said Colony Park Hills 1-A,
- 10) S 30 deg 04' 21" W 121 90 ft to a 1/2" iron rod found in the North line of Lot 19, Block 6, Lakeside "1-B", a subdivision in Travis County, Texas, according to the map or plat thereof recorded in Volume 75 Page 206 of the Plat Records of Travis County, Texas, for the Southwest corner of Lot 14, Block 6, Colony Park Hills 1-A, and being an angle corner of said Scardino (112 816 acre) tract, same being an angle corner of this tract,

**AND AT GRANTEE'S REQUEST SUBDIVIDED THE LAND INTO 4 SEPARATE TRACTS, OF WHICH A-1 IS BEING CONVEYED TO THE CITY OF AUSTIN-PARKS AND RECREATION DEPARTMENT FOR PARKLAND PURPOSES.

THENCE with the common line of said Scardino (112 816 acre) tract and said Lakeside "I-B", the following fourteen (14) courses,

- 1) N 56 deg 49' W 20 00 ft to a ½" iron rod found,
- 2) N 72 deg 01' 49" W 97 65 ft to a ½" iron rod found,
- 3) S 82 deg 28' 48" W 110 12 ft to a ½" iron rod found,
- 4) S 65 deg 17' 00" W 349 75 ft to a point for the Easterly corner of Lot 4, Block 6, of said Lakeside "I-B",
- 5) N 24 deg 22' 41" W 117 93 ft to a ½" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors" in the Southerly right-of-way line of Valleyfield Drive,
- 6) N 65 deg 24' 21" E 6 89 ft to a ½" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors" at the point of termination of the Southerly right-of-way line of Valleyfield Drive,
- 7) N 24 deg 32' 20" W 135 42 ft to a ½" iron rod found for the Northerly corner of Lot 17, Block 9, of said Lakeside "I-B",
- 8) S 65 deg 30' 23" W 117 74 ft to a ½" iron rod found in the curving Northeasterly right-of-way line of Cambray Drive for the Southwesterly corner of said Lot 17, Block 9,
- 9) along a curve to the left with a radius of 271 35 ft for an arc length of 53 51 ft and which chord bears N 38 deg 40' 53" W 53 42 ft to a ½" iron rod found at the point of termination of the Northeasterly right-of-way line of Cambray Drive,
- 10) S 56 deg 50' 16" W 51 19 ft to a ½" iron rod found at the point of termination of the Southwesterly right-of-way line of Cambray Drive,
- 11) S 44 deg 22' 47" W 72 57 ft to a ½" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors",
- 12) S 68 deg 53' 55" W 294 55 ft to a ½" iron rod found for the Southwesterly corner of Lot 11, Block 8, of said Lakeside "I-B",
- 13) S 34 deg 19' E 41 93 ft to a point for the most Northerly corner of Lot 12, Block 8, of said Lakeside "I-B",
- 14) S 57 deg 58' 00" W 108 40 ft to a ½" iron rod found for the Southwesterly corner of said Lot 12, Block 8, for an angle corner of said Scardino (112 816 acre) tract, and being an angle corner of this tract,

THENCE crossing the interior of said Scardino (112 816 acre) tract, the following five (5) courses,

- 1) N 30 deg 04" W 38 39 ft to a ½" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors" for a point of curvature,
- 2) along a curve to the left with a radius of 718 00 ft for an arc length of 110 07 ft and which chord bears N 34 deg 27' 30" W 109 96 ft to a ½" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors" for a point of tangency,
- 3) N 38 deg 51' 00" W 298 94 ft to a ½" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors" for a point of curvature,
- 4) along a curve to the left with a radius of 1015 00 ft for an arc length of 85 05 ft and which chord bears N 41 deg 15' 03" W 85 03 ft to a ½" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors" for a point of tangency,
- 5) N 43 deg 39' 05" W 165 27 ft to a ½" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors" in the common line of said Scardino (112 816 acre) tract and that certain (9 930 acre) tract of land as conveyed to the City of Austin by deed recorded in Volume 5000 Page 1992 of the Deed Records of Travis County, Texas, and being the Southwesterly corner of this tract,

THENCE with the common line of said Scardino (112 816 acre) tract and said City of Austin (9 930 acre) tract, N 73 deg 26' 33" E 1529 21 ft to a ½" iron rod found for a Northwesterly corner of said Scardino (112 816 acre) tract and for the Northeasterly corner of said City of Austin (9 930 acre) tract and being the Northwesterly corner of this tract,

THENCE with the Northerly line of said Scardino (112 816 acre) tract, the following two (2) courses,

- 1) S 59 deg 52' 39" E 166 36 ft to a ½" iron rod found,
- 2) S 59 deg 57' 47" E 671 97 ft to a ½" iron rod found for the Southeast corner of that certain (32 acre) tract of land as conveyed to Clarence E Schieffer, et al, by deed recorded in Volume 1318 Page 20 of the Deed Records of Travis County, Texas, and for the Northeasterly corner of said Scardino (112 816 acre) tract, and being the Northeasterly corner of this tract,

THENCE with the Easterly line of said Scardino (112 816 acre) tract, S 28 deg 41' 09" W 78 05 ft to the **PLACE OF BEGINNING** containing 26 243 acres of land

SURVEYED June, 2001



Holt Carson

Registered Professional Land Surveyor No 5166

reference map B 652052



FIELD NOTES REVIEWED
By M. J. [Signature] Date 02/12/01

Engineering Support Section
Department of Public Works
and Transportation

CARSON AND BUSH
PROFESSIONAL SURVEYORS, INC.
1904 FORTVIEW ROAD
AUSTIN, TX 78704
TELEPHONE (512) 442-0990
FACSIMILE (512) 442-1084

JUNE 20, 2001

FIELD NOTE DESCRIPTION OF 84 918 ACRES OF LAND OUT OF THE JAMES BURLESON SURVEY No 19 ABSTRACT No 4 IN TRAVIS COUNTY, TEXAS, BEING A PORTION OF THAT CERTAIN (112 816 ACRE) TRACT OF LAND DESCRIBED AS "TRACT 2" AND AS CONVEYED TO JOHN SCARDINO AND HAYTHEM S DAWLETT BY SPECIAL WARRANTY DEED RECORDED IN VOLUME 12136 PAGE 2467 OF THE REAL PROPERTY RECORDS OF TRAVIS COUNTY, TEXAS,** AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS

BEGINNING at a ½" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors" in the present North right-of-way line of Loyola Lane and in the Easterly line of that certain (112 816 acre) tract of land as conveyed to John Scardino and Haythem S Dawlett by Special Warranty Deed recorded in Volume 12136 Page 2467 of the Real Property Records of Travis County, Texas, and in the Westerly line of Lot 1, Block B, Lakeside Hills Phase 3-A, a subdivision in Travis County, Texas, according to the map or plat thereof recorded in Volume 77 Page 95 of the Plat Records of Travis County, Texas, and being the Northeasterly corner of that certain tract of land as conveyed to the City of Austin by Street Deed recorded in Volume 12691 Page 1185 of the Real Property Records of Travis County, Texas, same being the Southeasterly corner and **PLACE OF BEGINNING** of the herein described tract,

THENCE crossing the interior of said Scardino (112 816 acre) tract of land with the present North right-of-way line of Loyola Lane and with the North line of said City of Austin Street Deed tract, N 59 deg 37' 58" W 2093 87 ft to a bolt found in the common line of said Scardino (112 816 acre) tract and that certain (5 761 acre) tract of land as conveyed to the City of Austin by deed recorded in Volume 5000 Page 1992 of the Deed Records of Travis County, Texas, and being the Northwesterly corner of said City of Austin Street Deed tract, same being the Southwesterly corner of this tract, and from which a bolt found for the most Southerly corner of said City of Austin (5 761 acre) tract bears S 60 deg 54' 46" W 11 35 ft ,

THENCE leaving the present North right-of-way line of Loyola Lane with the common line of said Scardino (112 816 acre) tract and said City of Austin (5 761 acre) tract, the following six (6) courses,

- 1) N 60 deg 54' 46" E 8 41 ft to a ½" iron rod found,
- 2) N 60 deg 01' 02" E 1121 91 ft to a ½" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors",
- 3) N 42 deg 21' 58" W 48 56 ft to a ½" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors",
- 4) N 06 deg 36' 20" E 209 47 ft to a ½" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors",
- 5) N 34 deg 33' 30" E 314 58 ft to a ½" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors",
- 6) N 53 deg 12' 13" E 509 68 ft to a ½" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors" in the Southerly line of that certain (9 930 acre) tract of land as conveyed to the City of Austin by deed recorded in Volume 5000 Page 1992 of the Deed Records of Travis County, Texas, for the most Northeasterly corner of said City of Austin (5 761 acre) tract, and being an angle corner of said Scardino (112 816 acre) tract, same being an angle corner of this tract,

**AND AT GRANTEE'S REQUEST SUBDIVIDED THE LAND INTO 4 SEPARATE TRACTS, OF WHICH A-1 IS BEING CONVEYED TO THE CITY OF AUSTIN-PARKS AND RECREATION DEPARTMENT FOR PARKLAND PURPOSES

THENCE with the common line of said Scardino (112 816 acre) tract and said City of Austin (9 930 acre) tract, N 73 deg 26' 33" E 479 24 ft to a ½" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors" for the most Northerly corner of this tract,

THENCE crossing the interior of said Scardino (112 816 acre) tract, the following five (5) courses,

- 1) S 43 deg 39' 05" E 201 08 ft to a ½" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors" for a point of curvature,
- 2) along a curve to the right with a radius of 945 00 ft for an arc length of 79 19 ft and which chord bears S 41 deg 15' 03" E 79 17 ft to a ½" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors" for a point of tangency,
- 3) S 38 deg 51' 00" E 297 08 ft to a ½" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors" for a point of curvature,
- 4) along a curve to the right with a radius of 648 00 ft for an arc length of 99 34 ft and which chord bears S 34 deg 27' 30" E 99 24 ft to a ½" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors" for a point of tangency,
- 5) S 30 deg 04' E 75 19 ft to a ½" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors" at the point of termination of the Southwesterly right-of-way line of Colony Loop Drive for the most Northerly corner of Lot 3, Block 13, Lakeside "1-B" a subdivision in Travis County, Texas, according to the map or plat thereof recorded in Volume 75 Page 206 of the Plat Records of Travis County, Texas, and being an angle corner of said Scardino (112 816 acre) tract, same being an angle corner of this tract,

THENCE, S 59 deg 57' 56" W 120 00 ft to a ½" iron rod set with a plastic cap imprinted with "Carson and Bush Professional Surveyors" for the most Westerly corner of said Lot 3, Block 13, Lakeside "1-B",

THENCE, S 30 deg 03' 38" E 492 62 ft to a ½" iron rod found at the point of termination of the Southeasterly right-of-way line of Wilmington Drive for the most Westerly corner of Lot 31, Block B, Colony Park Hills 1-A, a subdivision in Travis County, Texas, according to the map or plat thereof recorded in Volume 68 Page 6 of the Plat Records of Travis County, Texas, and being an angle corner of this tract,

THENCE with the common line of said Scardino (112 816 acre) tract and said Block B, of Colony Park Hills 1-A, the following eight (8) courses,

- 1) S 30 deg 00' 00" E 265 36 ft to a ½" iron rod found,
- 2) S 28 deg 32' 12" E 179 75 ft to a ½" iron rod found,
- 3) S 25 deg 16' 53" E 115 79 ft to a ½" iron rod found,
- 4) S 71 deg 59' 51" W 271 86 ft to a ½" iron rod found,
- 5) S 60 deg 09' 36" W 235 77 ft to a ½" iron rod found,
- 6) S 51 deg 14' 32" W 298 16 ft to a ½" iron rod found,
- 7) S 41 deg 13' 06" W 156 79 ft to a ½" iron rod found,
- 8) S 30 deg 21' 53" W 579 63 ft to the PLACE OF BEGINNING, containing 84 918 acres of land

SURVEYED June, 2001

FIELD NOTES REVIEWED

By W. L. Little Date 07/03/01

Engineering Support Section
Department of Public Works
and Transportation

reference map B 652052

Holt Carson

Holt Carson

Registered Professional Land Surveyor No 5166



EXHIBIT "B"

PERMITTED EXCEPTIONS

- 1 Pipeline easement to Koch Refining Company, recorded in Volume 11090, Page 367, corrected by Volume 11112, Page 40, Real Property Records, Travis County, Texas
2. Public utility easement to the City of Austin, recorded in Volume 4729, Page 1637, Deed Records of Travis County, Texas
- 3 A fifteen (15') foot public utility and drainage easement to the City of Austin, recorded in Volume 5951, Page 2170 of the Deed Records of Travis County, Texas.
- 4 Twenty-five (25') foot storm sewer easement to the City of Austin, recorded in Volume 6299, Page 533 of the Deed Records of Travis County, Texas
- 5 Open drainage ditch or enclosed storm sewer easement to the City of Austin, recorded in Volume 12691, Page 1191 and Volume 12691, Page 1243 of the Real Property Records of Travis County, Texas.
- 6 Drainage easement to the City of Austin, recorded in Volume 13137, Page 274 of the Real Property Records of Travis County, Texas
- 7 A ten (10') foot lateral support (slope) easement to the City of Austin, recorded in Volume 12691, Page 1198 of the Real Property Records of Travis County, Texas
- 8 Wastewater easement to the City of Austin, recorded in Volume 13035, Page 457 of the Real Property Records of Travis County, Texas
- 9 Temporary working space easement to the City of Austin, recorded in Volume 13035, Page 452 and Volume 13344, Page 54 of the Real Property Records of Travis County, Texas
- 10 Mineral reservations, set out in Volume 515, Page 68 and Volume 2088, Page 519 of the Deed Records of Travis County, Texas
- 11 Fence outside of property line along the northeast property line of Tract "B", as shown on Survey dated June 20, 2001, prepared by Holt Carson, Registered Professional Land Surveyor No 5166
- 12 Pipeline and electric line easement to the City of Austin, recorded in Volume 3654, Page 193, Deed Records, Travis County, Texas

FILED AND RECORDED
OFFICIAL PUBLIC RECORDS

Dana DeBeauvoir

07-20-2001 12 03 PM 2001119347
CORTEZR \$35 00
DANA DEBEAUVOIR, COUNTY CLERK
TRAVIS COUNTY, TEXAS

Appendix B

UTILITY SERVICE AVAILABILITY LETTERS



Attn: Jeremy Reyes

Re: Gas Availability
Loyola Ln (East of Decker) – Colony Park
Austin, Travis County, TX

Dear Mr. Reyes,

Gas can be made available to the above-mentioned location. It may be necessary to extend a main, make a street cut and/or bore in order to supply service to your new development. Initially the customer or the developer would pay for all new construction costs. I have included a copy of a map showing the location of the gas mains in the area you have indicated.

In an effort to expedite the installation of natural gas service to your commercial project, Texas Gas Service is providing the following list. In order to complete your project it is essential that you supply the following:

Here are a few items needed to begin the gas service design for your project:

Electronic CAD

- o Site and Utility plans on Auto CAD
- o MEP's (does not need to be in Auto CAD form) showing meter locations, itemized gas load breakdown, and required gas pressure.
- o *(Please do not send by zip file) e-mail listed below*
- o Street references
- o Desired installation date *(date of installation of base / concrete)*
- o Desired Meter set date *(grand opening)*
- o Site address
- o Topography (if needed)

Planning

- o When will they begin construction?
- o Desired installation date
(Construction is at sub-grade /or prior to the installation of base/concrete)
- o Desired Meter set date

Contacts

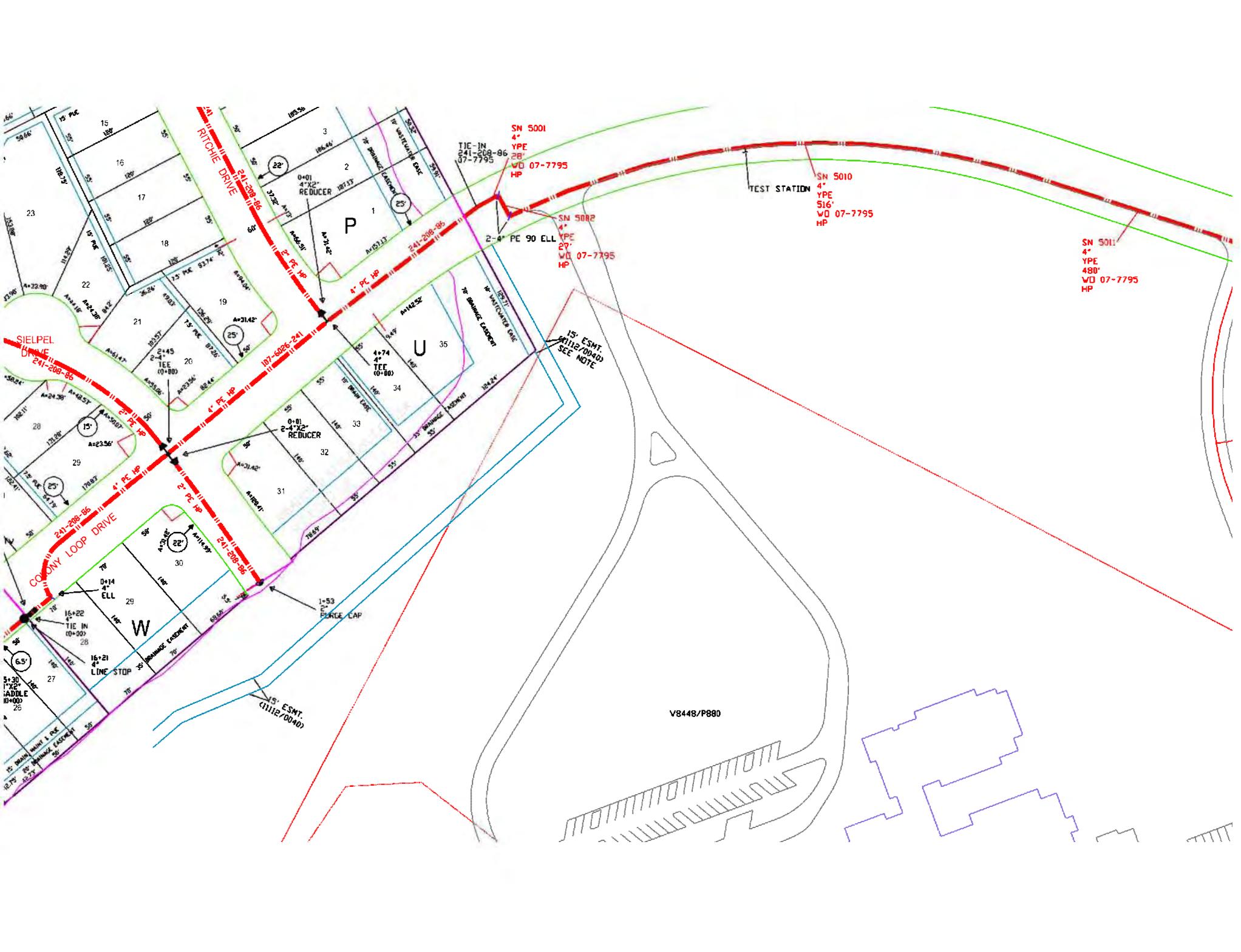
- o Contacts name and phone numbers such as project manager, superintendent, property owner, developer, engineer or architects.

This information may be mailed to our offices or faxed to (512) 465-1104. In addition, AutoCAD, and other electronic files may be emailed to me at **ldunkeson@txgas.com**. If you have any additional questions, I may be reached at (512) 465-1134. Thank you for this opportunity to serve you.

Sincerely,

Linda Dunkeson

New Business Facilitator
Texas Gas Service Company



Fax



To: JERMEY REYES

From: RODNEY MUENSTER

Fax: 439-4716

Phone: (512) 485-6323

Phone:

Date: 1/23/2008

Re: WILL SERVE LETTER

Pages: 2

Urgent For Review Please Comment Please Reply Please Recycle

● **Comments:**



January 23, 2008

To Whom it may concern

The property known as

AUSTIN HOUSING FINANCE CORP.

located at

ALONG LOYOLA LANE, APPROX. 1400' WEST OF THE INTERSECTION OF DECKER LANE & LOYOLA LANE.

is within the Time Warner Cable service area. Time Warner Cable will provide cable television, high-speed internet and residential digital telephone services to this property as required by the area franchise.

Please contact me at (512) 485-6281 if you need any further assistance.

Sincerely,

Rodney Muenster
Design dept.
Time Warner Cable - Austin Division
12012 N. Mopac Expwy.
Austin, Texas 78758



AUSTIN WATER UTILITY
Utility Development Services Division
625 East 10th Street, Suite 515
Austin, Texas 78701



(512) 972-0207

fax: (512) 972-0251

February 7, 2008

Cole Huggins, P.E.
 LJA Engineering & Surveying, Inc.
 5316 Highway 290 West, Suite 150
 Austin, Texas 78735

Re: Assessment of water and wastewater service for 7900 LOYOLA LN
 TCAD Parcel IDs ('0218310506', '0218310507', '0218310508', '0218310513')

Dear Mr. Huggins:

The property at 7900 LOYOLA LN consists of the property described as: TCAD Parcel IDs ('0218310506', '0218310507', '0218310508', '0218310513'). The property elevation contours can be seen in the attached map. The property is within the Central North pressure zone, the WALNUT drainage basin, Grid P25, and the Service Area of the Austin Water Utility. Wastewater flows are part of the WALNUT WW basin.

This property appears to be part of a previous Service Extension Request for Water (SER#1745). The tract appears to be near a 12-inch water line (Project 2003-0004) in LOYOLA LN, a 12-inch water line (Project 85-0910) in COLONY LOOP DR, and an 8-inch water line (Project 73-0325) within the southern portion of the subject tract. Water Pressure Calculations for these lines are provided below:

Pressure Calculation Results			
12-inch water line in LOYOLA LN			
HGL (ft. above MSL)	MINIMUM	TYPICAL	MAXIMUM
	690	710	720
Pressure (psi)*	64	72	77
12-inch water line in COLONY LOOP DR			
HGL (ft. above MSL)	MINIMUM	TYPICAL	MAXIMUM
	690	710	720
Pressure (psi)*	57	66	70
8-inch water line within the southern portion of the subject tract			
HGL (ft. above MSL)	MINIMUM	TYPICAL	MAXIMUM
	690	710	720
Pressure (psi)*	55	64	68

*HGLs and pressures are roughly approximated and not guaranteed. The HGL or pressure in a given zone could vary significantly from this range. Field testing in conjunction with water model analysis is the best source of HGL and pressure information. HGLs can vary significantly especially at remote locations in the water distribution system and near pump station locations. Values do not reflect fire flow conditions.

The property appears to be near an 8-inch Gravity Wastewater Line running north-to-south within the subject tract. The line is connected to manhole Unit ID: 80664 and has an approximate manhole elevation of 491.6 feet.

Service Extension Requests may be required for future water service and may be required for future wastewater service.

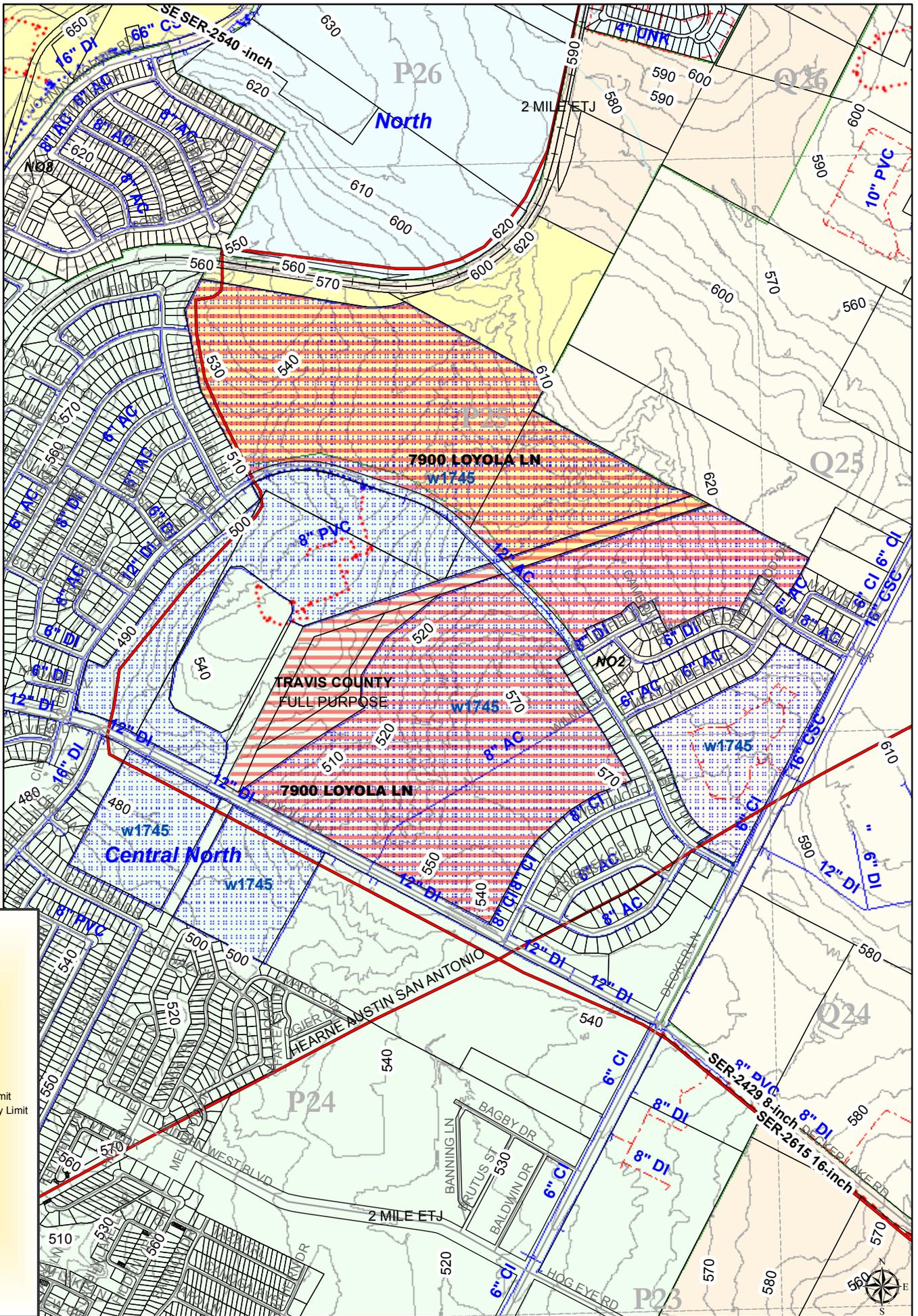
This assessment reflects the best information as of this date. Additional water and wastewater information is available at: <ftp://ftp.ci.austin.tx.us/>

Actual service delivery will be contingent upon available system capacity at the time an application for Tap and/or Service Extension Request is made and will be subject to all fees, charges, ordinances and policies in effect at that time. Notwithstanding this assessment, service may be reasonably limited by the city if necessary to protect the public health, safety and welfare or for compliance with applicable orders or ruling of the State or Federal Government or any political subdivision having lawful jurisdiction over these matters.

If we can provide additional information, please call me at (512) 972-0304 or email me at: James.Grabbs@ci.austin.tx.us.

Sincerely,

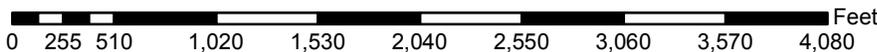
James S. Grabbs, P.E.
 Utility Development Services Division
 Austin Water Utility

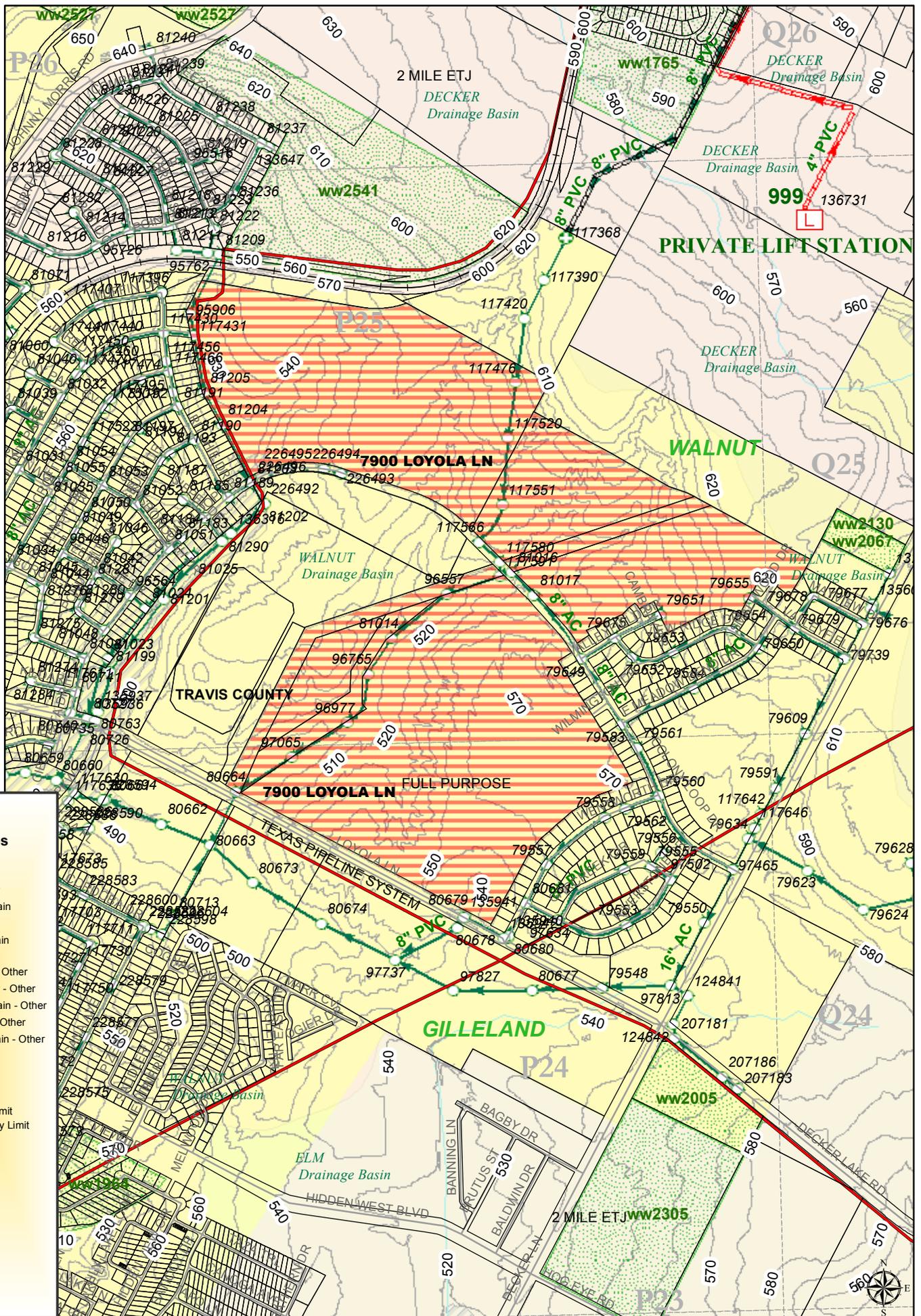


Legend

Water Lines

- all other values>
- Proposed
- In Service Private
- In Service
- Proposed Private
- SER_Lines_W
- SER_Water
- WWWSA
- Railroad Tracks
- Creeks
- Surfacewater Feature
- Full-purpose City Limit
- Limited-purpose City Limit
- 2 MILE ETJ
- 5 MILE ETJ
- Other City Limit
- Other ETJ
- Limited-purpose City Limit
- Ltd Type
- LTD-PZ
- LTD-PZ-CST
- LTD-PZHS
- LTD-PZHS-CST
- floodplain-travis
- floodplain-williamson
- Countries
- Contour - 10'
- Basepoly
- Pipelines





Legend

— Contour - 10'

Wastewater Lines

- <all other values>
- In Service Gravity
- In Service Overflow
- In Service Force Main
- Proposed Gravity
- Proposed Force Main
- Abandoned
- In Service Gravity - Other
- In Service Overflow - Other
- In Service Force Main - Other
- Proposed Gravity - Other
- Proposed Force Main - Other

— SER_Wastewater

— WWSWA

— Railroad Tracks

— Creeks

— Surfacewater Feature

— Full-purpose City Limit

— Limited-purpose City Limit

— 2 MILE ETJ

— 5 MILE ETJ

— Other City Limit

— Other ETJ

Limited-purpose City Limit

Ltd Type

- LTD-PZ
- LTD-PZ-CST
- LTD-PZHS
- LTD-PZHS-CST
- floodplain-holds
- floodplain-williamson
- Counties
- Basepoly
- Pipelines



**City of Austin**

Austin's Community-Owned Electric Utility

www.austinenergy.com

Town Lake Center • 721 Barton Springs Road • Austin, Texas • 78704

January 28, 2008

LJA Engineering & Surveying
5316 Highway 290 W, Suite 150
Austin, TX 78735

SUBJECT: Electric Service Availability to

Being property identified as Loyola Lane, approximately 1,400 ft west of the intersection of Decker Lane and Loyola Lane, Austin, TX, Travis County, TX and being the same property owned by Austin Housing Finance Corp., identified by TCAD No. 02183105130000 and further identified by the attached sketch.

Dear Sir:

The above described property is located within the Austin Energy's (AE) electric service territory. This letter will confirm that AE can provide electric service.

This confirmation of availability of electric service is conditional upon the obligation of the customer to comply with the technical and regulatory requirements pertaining to the provision of electric service to the above-described property. Please refer to the AE Design Criteria Manual (www.austinenergy.com/go/designmanual). In some instances it might be necessary for service to be extended to the property.

Austin Energy Distribution Design Group North will perform the design of service for the facility. When you are ready to proceed with the design, you will need to contact the Design Supervisor, Bud Bearrs at 512-505-7214. He will assign a designer to your project that will be able to provide you information concerning any additional costs, which may be required.

Once the design is completed, there may be a need for additional easements, which must be provided prior to the project being released to construction. For assistance regarding easements, or any other questions concerning the process, please feel free to call me at 512-322-6442.

Sincerely,

A handwritten signature in cursive script that reads "Sonny Poole".

Sonny Poole, Supervisor
Public Involvement/Real Estate
Austin Energy
721 Barton Springs Road
Austin, TX 78704



PROJECT LOCATION

FOR PLANNING PURPOSES ONLY

LJA Engineering & Surveying, Inc.
 5318 Highway 290 West
 Suite 150
 Austin, Texas 78735
 Phone 512.438.4700
 Fax 512.438.4718

**COLONY PARK
 SUBDIVISION**
 SITE LOCATION MAP

SHEET NAME
 Site Location Map.dwg



Todd Thetford
Area Manager-Eng. Design
South Austin

AT&T Texas
909 Colorado Street
Floor 8th Room 810
South Engineering
Austin, TX 78701

T: 512.870.1450
F: 512.870.3692
tt1879@att.com

January 23, 2008

Jeremy Reyes
5316 Highway 290 West, Ste. 150
Austin, TX 78735

Fax: 512-439-4716

Re: Decker Lane and Loyola Lane

This letter is to advise that the above referenced project lies within the serving area of AT&T Texas. Currently there are no facilities on the undeveloped property. Facilities will be extended/constructed to serve this area, as provided by the tariffs and regulations of the Public Utilities Commission. The facilities provided would need to be constructed and we would request a minimum lead time of 90-120 days to allow for acquisition of permits, engineering design and actual construction. Also, there may be some accommodations, easements, and electrical requirements for your equipment that we need to discuss for inclusion in your plans, i.e. conduit w/ pullstring, backboard, and inside wiring, and joint trench.

I would like to discuss your communications needs with you and would be interested in providing you with any information you may need for making your telecommunications decisions. I look forward to hearing from you and please do not hesitate to contact me with any questions or concerns you may have on your upcoming development. Thank you in advance for your business.

You may contact me at 870-5214 if you need any further assistance.

Sincerely,

A handwritten signature in black ink that reads "Gilbert Magallanez". The signature is stylized and cursive.

Gilbert Magallanez
Manager - Engineering Design

Appendix C

**ENVIRONMENTAL ASSESSMENT
(HORIZON ENVIRONMENTAL SERVICES, INC.)**



Environmental Services, Inc.

7 March 2008

**Environmental Assessment Information
City of Austin Land Development Code (Section 25-8-121)
Compliance Report**

**RE: Colony Park Tracts B, C, and D, approximately 203.63 acres located on Loyola Lane, Austin, Travis County, Texas
HJN 070200 EA**

1.0 INTRODUCTION

This report provides the results of an environmental assessment conducted by Horizon Environmental Services, Inc. (Horizon) on Colony Park Tracts B, C, and D (the Property), located on the north side of Loyola Lane west of its intersection with Decker Lane in Austin, Travis County, Texas. Horizon conducted the field reconnaissance on 6 February 2008. Horizon spent a minimum of 6 person-hours in the field evaluating the site and surrounding area, and completed the assessment process by conducting a review of existing literature.

2.0 ENVIRONMENTAL SETTING

2.1 LAND USE

The Property was vacant at the time of Horizon's site reconnaissance, and no current use of the Property was evident. Evidence of previous dumping activities was visible on the Property. Horizon also observed evidence of local electrical and water utilities on the Property, and an electric transmission line easement runs between Tracts B and C (refer to plat map in Appendix A). Natural gas pipeline marker signs were observed on the southern portion of the Property along Loyola Lane, and markers for a refined products petroleum pipeline were observed along Loyola Lane as well as the western and northern borders of Tract B.

Existing land use bordering the Property was observed as follows:

- NORTH: Railroad tracks and vacant rangeland with scattered single-family residences
- SOUTH: Loyola Lane with rangeland, single-family residential, and commercial development beyond
- EAST: Single-family residential with Decker Lane and commercial development beyond
- WEST: Vacant rangeland, Colony Loop Drive, and Colony Park single-family residential development

070200 EA

Loyola Lane borders the Property to the south. Separate portions of Colony Loop Drive abut the Property to the east and west; they are proposed to connect via an extension that will run adjacent to the southern boundary of Tract B and the southwestern boundary of Tract C, as indicated on the plat map attached in Appendix A. Horizon reviewed City of Austin GIS data sets and transportation files and verified that the proposed connection of Colony Loop Drive has been documented and mapped in this location.

2.2 VEGETATION

The Property is situated within the Blackland Prairie vegetational area of Texas (Gould, 1975). Typical vegetation observed within upland areas of the Property include: little bluestem (*Schizachyrium scoparium*), sideoats grama (*Bouteloua curtipendula*), Texas grama (*Bouteloua rigidisetata*), plateau live oak (*Quercus fusiformes*), Ashe juniper (*Juniperus ashei*), and honey mesquite (*Prosopis glandulosa*). The dominant wetland plant species observed within drainage areas on the Property was bushy bluestem (*Andropogon glomeratus*). Horizon also observed the presence of small spikerush (*Eleocharis parvula*) and broad-leaf cattail (*Typha latifolia*) in isolated areas of the defined drainages.

2.3 TOPOGRAPHY AND SURFACE WATER

The Property is mapped on the US Geological Survey (USGS) Austin East and Manor, Texas, topographic quadrangles (USGS, 1988). Topography on the Property is sloping in a north-to-south direction toward tributaries of Walnut and Elm creeks. Surface elevation ranges from approximately 500 to 610 feet above mean sea level. The Property is in the Suburban Zone of the Walnut, Decker, and Elm Creek watersheds (COA, 1998), with surface water flow from north-to-south over most of the Property, typically by defined drainage features and gullies located on the Property and overland sheet flow toward tributaries of Walnut and Elm creeks. A very small portion of the Property (southwestern corner of Tract B) lies within the Federal Emergency Management Agency (FEMA) 100-year floodplain boundaries (FEMA, 1993).

A review of the National Wetland Inventory (NWI) maps showed 2 potential wetland areas on the Property (USFWS, 1993). One of the areas indicated on the NWI map corresponds with wetland vegetation (described in Section 2.2 above) observed in the southwestern corner of the Property. A wetland area mapped along the southeastern boundary of the Property was not observed during the site reconnaissance; it has likely been filled in and no longer exists.

2.4 SOILS

Mapped soils on the Property include the following:

SOIL NAME	SOIL TYPE	SOIL DEPTH (FEET)	UNDERLYING MATERIAL	PERMEABILITY	AVAILABLE WATER CAPACITY	SHRINK-SWELL CAPACITY
Burleson clay, 1 to 3% slopes (BsB)	clay, silty clay	0.5 to 5.0	silty clay	very slow	high	high
Ferris-Heiden complex, 8 to 20% slopes (FhF3)	clay, silty clay	0.5 to 4.0	yellow silty clay	very slow	high	high
Heiden clay, 3 to 5% slopes eroded (HeC2)	clay	0 to 1.0	mottled yellow silty clay	very slow	high	high
Heiden gravelly clay, 8 to 20% slopes, eroded (HgF2)	gravelly clay	0 to 4.0	silty clay, chert gravel	very slow	high	high
Houston Black clay, 0 to 1% slopes (HnA)	clay	0 to 7.0	mottled clay	very slow	high	high
Houston Black clay, 1 to 3% slopes (HnB)	clay	0 to 7.0	mottled clay	very slow	high	high
Houston Black gravelly clay, 2 to 8% slopes, eroded (HoD2)	gravelly clay	0 to 6.9	mottled clay	very slow	high	high
Trinity clay, frequently flooded (Tw)	clay	0 to 7.0	silty clay	slow	high	high

Source: NRCS, 2008a and 2008b

2.5 EDWARDS AQUIFER ZONE

The Property is not found within the Edwards Aquifer Recharge, Transition, or Contributing Zones (COA, 1998; TCEQ, 1996).

2.6 GEOLOGY

The Property is underlain by the following geologic units:

GEOLOGIC UNIT	DESCRIPTION
Navarro Group (Kemp Clay, Corsicana Marl, and Neylandville formations) and Marlbrook Marl	Upper part: clay, calcareous, locally silty, massive, thinly laminated, conchoidal fracture, medium-dark gray that weathers medium gray; lower part: clay, dominantly montmorillonitic, silt-size quartz becomes more abundant upward, calcite fragments common, glauconic, disseminated pyrite, blocky with conchoidal fracture, strikingly uniform throughout, light medium gray, weathers light brown to light gray and becomes slightly fissile; thickness approximately 600 feet.

GEOLOGIC UNIT	DESCRIPTION
Pecan Gap Chalk	Chalk in lower part grading upward to chalky marl with microgranular calcite in clay matrix, well-rounded quartz grains in lower part, medium gray, weathers light gray and white; thickness approximately 200 feet, grades laterally in places to marl.
Ozan Formation	Clay, marly, calcareous content decreases upward, montmorillonitic, some glauconite, phosphate pellets, and hematite and pyrite nodules, variable amount of silt-sized quartz and calcite fragments, become more abundant upward, blocky with conchoidal fracture, light gray to brown, weathers light gray to grayish orange and white, develops poor fissility; thickness approximately 600 feet.

Source: UT-BEG, 1981

2.7 WATER WELLS

A review of the records of the Texas Water Development Board (TWDB) revealed 1 documented water well within a 0.5-mile radius from the Property (TWDB, 2008). The well is mapped to the north of the Property and documented as having a depth of 12 feet. Horizon did not observe evidence of any water wells on the Property during the site reconnaissance. The results of this survey do not preclude the existence of undocumented/abandoned wells on the Property.

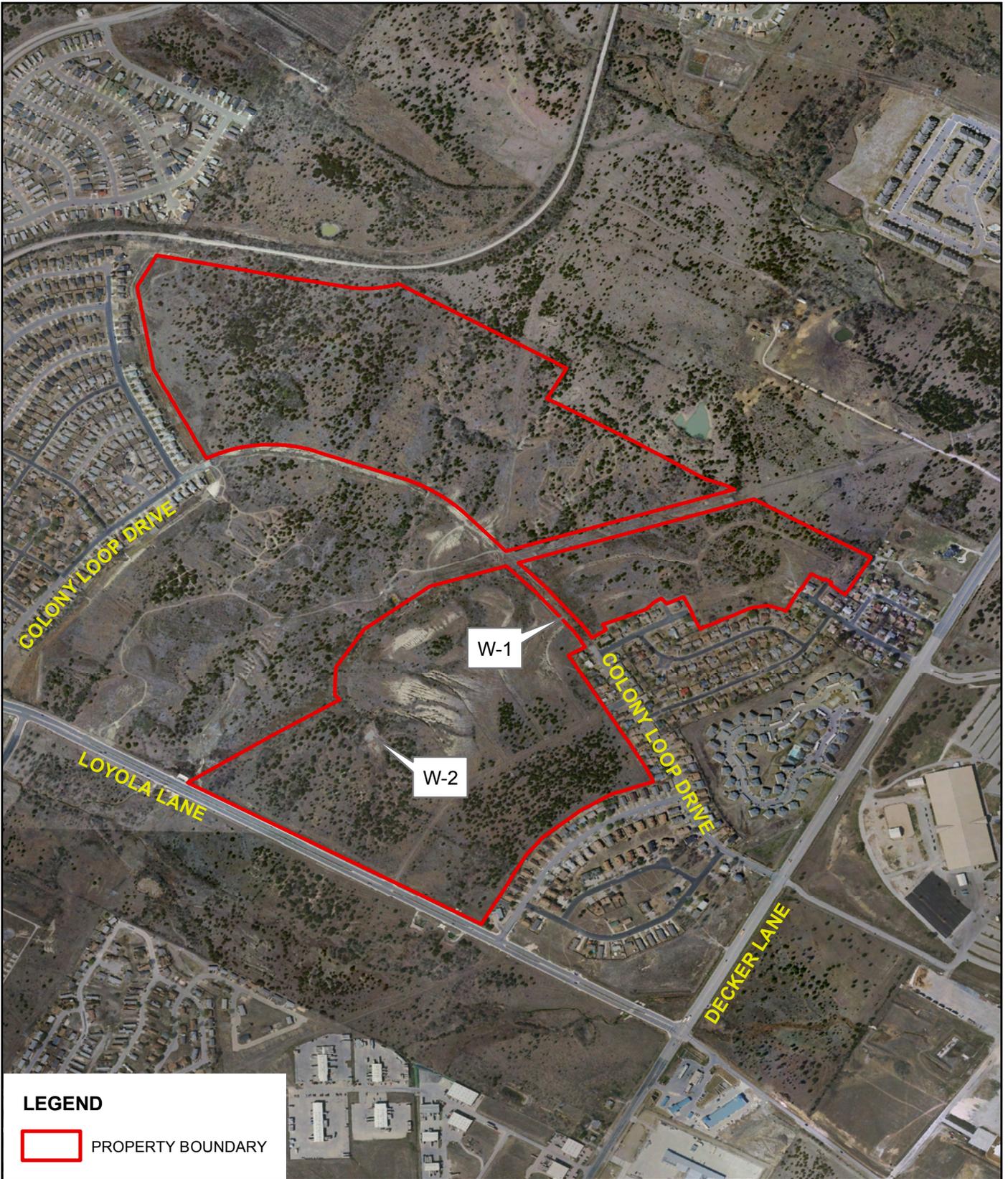
Should any on-site wells be revealed that are not intended for future use, they should be capped or properly abandoned according to the Administrative Rules of the Texas Department of Licensing and Regulation (TDLR), 16 Texas Administrative Code (TAC), Chapter 76. Texas Commission on Environmental Quality (TCEQ) publication RG-347, "Landowner's Guide to Plugging Abandoned Water Wells," provides specific guidance. If a well is intended for use, it must comply with 16 TAC §76.

3.0 CRITICAL ENVIRONMENTAL FEATURES

The City of Austin definition of a critical environmental feature (CEF) includes caves, sinkholes, springs, wetlands, bluffs, canyon rimrock, water wells within the Edwards Aquifer, and significant recharge features located over the Edwards Aquifer Recharge Zone.

The Property had several drainage features; however, most appeared to be large gullies from heavy erosion of the soils on the Property. Horizon did observe 2 potential wetland CEFs. Both are mapped on Figure 1 and described on the CEF Worksheet in Appendix B, which also includes photographs of the features. The dominant wetland plant species observed within the CEFs was bushy bluestem (*Andropogon glomeratus*). Horizon also observed small spikerush (*Eleocharis parvula*) and broad-leaf cattail (*Typha latifolia*).

CEF W-1 was located within an on-site drainage on the east-central portion of the Property. The feature was approximately 340 feet long and 8 feet wide. CEF W-2 was observed downgradient of the gullies on the southern portion of the Property (Tract D). The



LEGEND

 PROPERTY BOUNDARY

MAP SOURCE: CAPCOG, 2006.

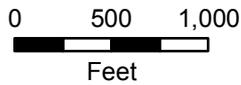


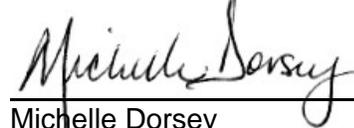
FIGURE 1

POTENTIAL CRITICAL ENVIRONMENTAL FEATURES
 COLONY PARK PROPERTY
 TRACTS B, C, & D
 AUSTIN, TRAVIS COUNTY, TEXAS

feature was approximately 165 feet wide and 300 feet long. Feature W-2 appears to be a historic stock tank that is no longer functional as an impoundment, as no standing water was present. Additionally, all wetland vegetation appeared dead and no evidence of new growth from the previous growing season was observed. It is Horizon's opinion that significant changes to the hydrology of the area have occurred as a result of development in the area, and it is unlikely that feature W-2 will continue to function as an herbaceous wetland. However, COA watershed protection personnel would need to confirm this opinion.

No other potential CEFs as defined by the City of Austin were found on or within 150 feet from the Property.

For Horizon Environmental Services, Inc.



Michelle Dorsey
Environmental Specialist

7 March 2008
Date

4.0 REFERENCES

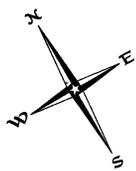
- (CAPCOG) Capital Area Council of Governments. 2006 Orthoimagery, Austin East and Manor, Texas, quarter quadrangles. CAPCOG Center for Regional Development, Austin, Texas. 2006.
- (COA) City of Austin. *Austin Watershed Regulation Areas*. Austin, Texas: City of Austin, Department of Planning and Development. 30 January 1998.
- (FEMA) Federal Emergency Management Agency. Flood Insurance Rate Map (FIRM) Panel No. 48453C0125E, Travis County, Texas. 16 June 1993.
- Garner, L.E., and K.P. Young. *Environmental Geology of the Austin Area: An Aid to Urban Planning*. Report of Investigations 86. The University of Texas at Austin, Bureau of Economic Geology. 1976.
- Gould, F.W. *Texas Plants – A Checklist and Ecological Summary*. College Station: Texas A&M University. 1975.
- (NRCS) US Department of Agriculture, Natural Resources Conservation Service. 2008a. Web Soil Survey, <<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>>. Accessed 29 January 2008.
- _____. 2008b. Soil Data Mart, <<http://soildatamart.nrcs.usda.gov/>>. Accessed 29 January 2008.
- (TCEQ) Texas Commission on Environmental Quality. Edwards Aquifer Recharge Zone Boundary Maps. 1996.
- (TWDB) Texas Water Development Board. Water Information Integration and Dissemination System. TWDB Groundwater Database (ArcIMS), <http://wiid.twdb.state.tx.us/ims/www_drl/viewer.htm?DISCL=1&>. Accessed 29 January 2008.
- (USFWS) US Department of the Interior, Fish and Wildlife Service. National Wetland Inventory Map, Austin East and Manor Quadrangles, Texas. 1993.
- (USGS) US Geological Survey. 7.5-minute series topographic maps, Austin East and Manor, Texas, quadrangles. 1988.
- (UT-BEG) University of Texas Bureau of Economic Geology, Proctor, C.V., Jr., T.E. Brown, J.H. McGowen, N.B. Waechter, and V.E. Barnes. *Geologic Atlas of Texas*, Austin Sheet, Francis Luther Whitney Memorial Edition. 1974; revised 1981.

APPENDIX A
SURVEY PLAT

SCALE: 1" = 200'

Legend

- 1/2" Iron Rod Found
- 1/2" Iron Pipe Found
- 1/2" Iron Rod Set with plastic cap imprinted with "Carson and Bush"
- ▲ 600 Nail Found
- Wire Fence
- Wood Board Fence
- Overhead Utility Line (Record Bearing and Distance)
- Wastewater Manhole
- Gas Pipeline Sign
- Fire Hydrant
- Telephone Pedestal
- Cable TV Pedestal



JAMES BURLESON SURVEY No. 19
ABSTRACT No. 4

TRACT B
92.468 ACRES

TRACT C
26.243 ACRES

TRACT A
49.889 ACRES

TRACT D
84.918 ACRES

SURVEY PLAT OF

253.518 ACRES OF LAND OUT OF THE JAMES BURLESON SURVEY No. 19 ABSTRACT No. 4 IN TRAVIS COUNTY, TEXAS, BEING COMPRISED OF THE FOLLOWING:

TRACT A: 49.889 ACRES OF LAND BEING A PORTION OF THAT CERTAIN (169.714 ACRE) TRACT OF LAND DESCRIBED AS "TRACT 1" AND AS CONVEYED TO JOHN SCARDINO AND HAYTHAM S. DAWLETT BY SPECIAL WARRANTY DEED RECORDED IN VOLUME 12136 PAGE 2467 OF THE REAL PROPERTY RECORDS OF TRAVIS COUNTY, TEXAS.

TRACT B: 92.468 ACRES OF LAND BEING A PORTION OF THAT CERTAIN (169.714 ACRE) TRACT OF LAND DESCRIBED AS "TRACT 1" AND AS CONVEYED TO JOHN SCARDINO AND HAYTHAM S. DAWLETT BY SPECIAL WARRANTY DEED RECORDED IN VOLUME 12136 PAGE 2467 OF THE REAL PROPERTY RECORDS OF TRAVIS COUNTY, TEXAS.

TRACT C: 26.243 ACRES OF LAND BEING A PORTION OF THAT CERTAIN (112.816 ACRE) TRACT OF LAND DESCRIBED AS "TRACT 2" AND AS CONVEYED TO JOHN SCARDINO AND HAYTHAM S. DAWLETT BY SPECIAL WARRANTY DEED RECORDED IN VOLUME 12136 PAGE 2467 OF THE REAL PROPERTY RECORDS OF TRAVIS COUNTY, TEXAS.

TRACT D: 84.918 ACRES OF LAND BEING A PORTION OF THAT CERTAIN (112.816 ACRE) TRACT OF LAND DESCRIBED AS "TRACT 2" AND AS CONVEYED TO JOHN SCARDINO AND HAYTHAM S. DAWLETT BY SPECIAL WARRANTY DEED RECORDED IN VOLUME 12136 PAGE 2467 OF THE REAL PROPERTY RECORDS OF TRAVIS COUNTY, TEXAS.

see accompanying Field Note Description

GF No. 01042105
TO: City of Austin
Gracy Title Company
Stewart Title Guaranty Company

THE STATE OF TEXAS

COUNTY OF TRAVIS

The undersigned does hereby certify that a survey was this day made on the ground of the property legally described hereon and is accurate to the best of my abilities and that there are no boundary line conflicts, encroachments, shortages in area, overlapping of improvements, visible utility lines, or roads in place, except as shown hereon, and said property has access to and from a dedicated road. Portions of "Tract A" and "Tract B" are within Zone A (100 Year Flood Plain) according to the Federal Emergency Management Agency Flood Insurance Rate Map Panel No. 480824 0202 E dated June 16, 1993. THIS the 20th day of JUNE, A.D. 2001.

REVISED THIS the 11th day of JULY, A.D. 2001, to reflect the recent removal of a fence along Lot 12, Block 8 Lakeside "B".

By: *Holt Carson*
Holt Carson
Registered Professional Land Surveyor No. 5166
CARSON AND BUSH
PROFESSIONAL SURVEYORS, INC.
1904 Fortview Road Austin, Texas 78704
(512)-442-0990



EASEMENT NOTES:

1. Electric Easements recorded in Volume 569 Page 18 and Volume 584 Page 272 TCDR, do not apply to these tracts of land.
2. Telephone and Telegraph Easement recorded in Volume 687 Page 98 TCDR, does not apply to these tracts of land.
3. Pipeline Easement recorded in Volume 830 Page 328 TCDR, does not apply to these tracts of land.
4. Pipeline Easement recorded in Volume 3820 Page 1 and amended in Volume 4766 Page 876 TCDR, does not apply to these tracts of land.
5. Electric/Telephone Easement recorded in Volume 4336 Page 1855 and Volume 4336 Page 1857 TCDR, do not apply to these tracts of land.

APPENDIX B
WETLAND CEF WORKSHEET
AND
ON-SITE PHOTOGRAPHS

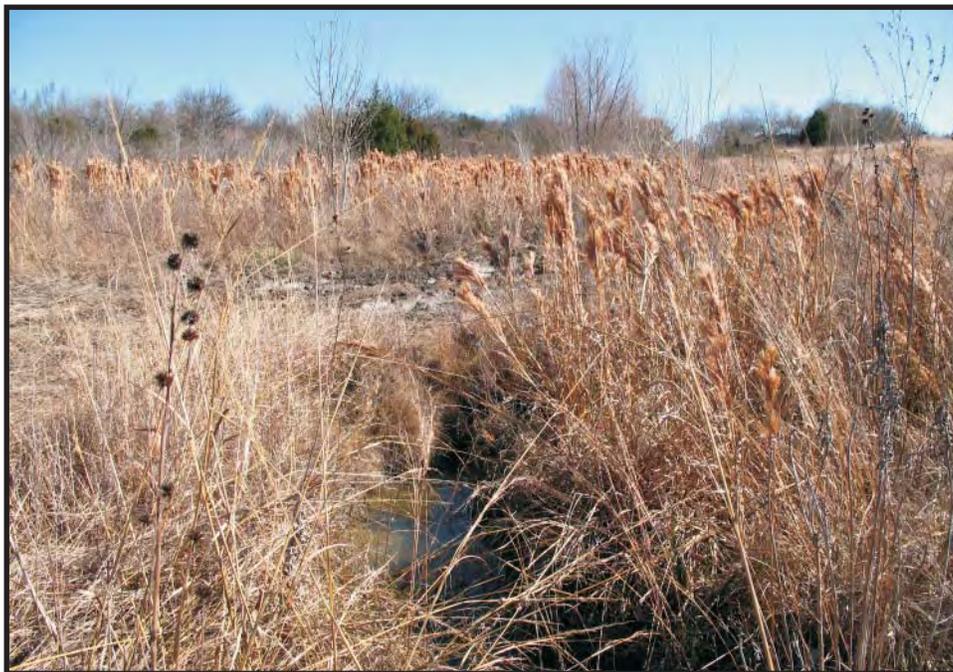


PHOTO 1

**View of CEF W-1 located on the
central portion of the Property**



PHOTO 2

**View of CEF W-2 located on the
southern portion of the Property**

Appendix D

TRANSPORTATION CRITERIA MANUAL TABLE 9-1

**TABLE 9-1
PARKING LOT AND GARAGE CRITERIA**

A	B	C	D		E	F	
Angle of Parking (degrees)	Width of Stall	Depth of Stall 90° to Aisle	Width of Aisle		Width of Stall Parallel to Aisle	Module Width	
			One Way	Two Way		One Way	Two Way
Standard Parking Spaces							
30	8'6"	16'	13'	--	17'	45'	--
30	9'	16'	12'	--	18'	44'	--
45	8'6"	17'	16'	--	12'	50'	--
45	9'	17'	14'	--	12'9"	48'	--
60	8'6"	18'6"	17'	--	9'10"	54'	--
60	9'	18'6"	16'	--	10'5"	53'	--
75	8'6"	18'6"	21'	--	8'10"	58'	--
75	9'	18'6"	18'	--	9'4"	55'	--
90	8'6"	17'6"	--	27'	8'6"	--	62'
90	9'	17'6"	--	25'	9'	--	60'
Compact Parking Spaces							
45	7'6"	15'11"	13'	18'	10'7"	45'	50'
60	7'6"	16'8"	18'	--	8'8"	52'	--
75	7'6"	16'5"	18'	--	7'10"	51'	--
90	7'6"	15'	--	18'	7'6"	--	48'
Parallel Parking Spaces							
0	8'6"	8'6" (Width)	12'6"	25'	22' (Length)	30'	42'

Appendix E

**PRELIMINARY GEOTECHNICAL STUDY
(HVJ ASSOCIATES)**

**PRELIMINARY GEOTECHNICAL INVESTIGATION AND
DESIGN RECOMMENDATION REPORT
COLONY PARK DEVELOPMENT
AUSTIN, TEXAS**

DRAFT

**SUBMITTED TO:
LJA ENGINEERING & SURVEYING, INC.**

**BY
HVJ ASSOCIATES, INC.
MARCH 11, 2008**

REPORT NO AG 07 16360



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March 11, 2008

Mr. Danny Miller, P.E.
LJA Engineering & Surveying, Inc.
5316 Highway 290 West, Suite 150
Austin, Texas 78735

Re: Preliminary Geotechnical Investigation – Colony Park Development
Owner: Austin Housing Finance Corporation
HVJ Project No. AG 07 16360

Dear Mr. Miller:

Submitted herein is the report of our preliminary geotechnical investigation and design recommendations for the above referenced project. This study was performed in accordance with our proposal number AG 07 16360 dated July 19, 2007.

It has been a pleasure to work for you on this project and we appreciate the opportunity to be of service. Please notify us if there are questions or if we may be of further assistance.

Sincerely,
HVJ ASSOCIATES, INC.

DRAFT

Jason Schwarz, P.E.
Project Manager

DRAFT

Yonghoon Lee, E.I.T.
Staff Engineer

Copies submitted: 2

The seal appearing on this document was authorized by Jason Schwarz, P.E. 99343 on March 11, 2008. Alteration of a sealed document without proper notification to the responsible engineer is an offense under the Texas Engineering Practice Act.

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I EXECUTIVE SUMMARY

HVJ Associates, Inc. was retained by LJA Engineering & Surveying, Inc to perform a preliminary geotechnical investigation and design recommendations for the proposed development in Austin, Texas. The site is located on the northeast intersection of Loyola Lane and Colony Loop Drive. The project includes construction of single family homes along with associated structures such as detention ponds, roads, and foundations. This report includes the result from the preliminary geotechnical investigation and design recommendations for the proposed construction.

Twenty soil borings were drilled to approximately 20.0 ft below the existing ground surface to perform the subsurface investigation. A brief summary of the investigational findings and pertinent recommendations are as follows:

1. Based on the field investigation, the subsurface soils encountered in the borings generally consisted of fat clay overlying claystone to the boring termination depth. Laboratory test results indicated the subgrade soils have high expansive characteristics based on the range in soils types. The existing moisture contents indicate the soils are in a relatively dry state and the soil swelling will be moderate to high.
2. Groundwater was not encountered during drilling operations. However, it should be noted that groundwater elevation may fluctuate seasonally in response to rainfall and climate condition.
3. Preliminary design and construction recommendations for detention ponds, roads, and building foundation design parameters were provided. The recommendations should be considered general, not specific for the site since detailed plans for the structures were not available at the time of this study.
4. The City of Austin pavement design program, MFPS, was used for the preliminary designs for the required pavement cross sections. The resulting designs are summarized below:

Location	Flexible Pavement Section
Collector Street	4" Hot Mix Asphaltic Concrete (HMAC) 13" Crushed Limestone Base 8" Lime Stabilized Subgrade
Residential Roads	2" Hot Mix Asphaltic Concrete (HMAC) 10" Crushed Limestone Base

Please note that this executive summary does not fully relate HVJ's findings and opinions. These findings and opinions are only presented through the full report.

1. INTRODUCTION

1.1 General

HVJ Associates, Inc. was retained by LJA Engineering & Surveying, Inc to perform a preliminary geotechnical investigation for the proposed project in Austin, Texas. The site is located on the northeast intersection of Loyola Lane and Colony Loop Drive. The project includes construction of single family homes along with associated structures including detention ponds, road pavements, and foundations within approximately 202 acres of the Colony Park tract. The site location is shown in Vicinity Map on Plate 1.

This report includes geotechnical investigational findings, and recommendations for excavation, fill placement/compaction, the slope stability of detention ponds, pavement design, and foundation design.

1.2 Scope of Work

The primary objectives of this study were to gather information on subsurface conditions and to develop a preliminary design and construction recommendations for the proposed structures. The objectives were accomplished by:

1. Drilling soil borings to determine the subsurface stratigraphy and to obtain samples for laboratory testing;
2. Performing laboratory tests to determine physical and engineering characteristics of the soils; and
3. Performing engineering analyses to develop design recommendations for the structures.

The scope of work only includes preliminary geotechnical investigation related to the proposed structures as described above. At the time of the investigation, the exact locations of detention ponds, roads, and buildings were not known. Therefore, general recommendations are provided in this report.

Subsequent sections of this report contain descriptions of the subsurface exploration, laboratory-testing program, general site and subsurface conditions, and design and construction recommendations for the structures.

2. SUBSURFACE EXPLORATION

2.1 General

The field exploration program for the project was conducted on February 25th through 27th, 2008. Twenty soil borings were drilled to the termination depth of 20.0 feet below existing grade. Drilling was performed with truck-mounted equipment using dry auger techniques at the approximate locations shown in Plan of Borings on Plate 3. The boring logs are presented on Plates 4 through 23. Key to terms and symbols are shown on Plates 24A and 24B.

2.2 Sampling Methods

Cohesive soils were sampled by pushing with a three-inch, thin-walled (Shelby) tube sampler in general accordance with ASTM D1587 standard.

Each sample was removed from the sampler in the field, carefully examined, and then classified and sealed in plastic bags for further testing in HVJ's laboratory.

2.3 Borehole Completion

All project borings were backfilled with bentonite chips upon completion of drilling.

2.4 Groundwater Observation

Groundwater observations were performed during drilling operations.

3. LABORATORY TESTING

Select soil samples were tested in the laboratory to determine physical and engineering properties applicable to the project. All tests were performed in accordance with ASTM procedures.

Index property tests including moisture contents, Atterberg limits and percent passing No. 200 sieve were assigned to verify field classification of the cohesive soils by the Unified Soils Classification System. Unconfined compression strength tests were performed to estimate shear strength of select soil samples. The laboratory test results are presented on the boring logs and included in Plates 4 through 23. Also, the laboratory test results summary is presented in Appendix A.

Laboratory test results indicated the subgrade soils have generally high expansive characteristics based on the range in soils types. The existing moisture contents indicate the soils are in a relatively dry state and the soil swelling will be moderate to high.

4. SITE CHARACTERIZATION

4.1 General Geology

According to the Geologic Atlas of Texas, Austin Sheet (University of Texas Bureau of Economic Geology, 1974) and Environmental Geology of the Austin Area: An Aid to Urban Planning (University of Texas Bureau of Economic Geology, 1976), the proposed alignments are located on Alluvium and Taylor Group.

The alluvium is floodplain deposits consisting of brown sands, gravels, silts, and clays near creeks or low lying areas. The silt and clay are calcareous to the surface, dark gray to dark brown. The sand is largely quartz and the gravels are siliceous, mostly chert, quartzite, limestone, and petrified wood.

The Taylor Group has been divided into three formations, based on Keith Young (1965), from bottom to top: Sprinkle, Pecan Gap, and Bergstrom. The formations consist of calcareous, montmorillonitic, highly overconsolidated clay, marly clay, and clay shale varying in color and calcium carbonate content. It is highly plastic, with high swelling potential, and very unstable. When left exposed to the air, it will slake. Thickness of the Taylor Group ranges from approximately 50 feet thick in the area of southeast Austin to approximately 300 feet thick in the area of Walnut Creek.

Based on mapped fault locations, no fault exist within the project limit as shown in the Geology Map on Plate 2.

4.2 Soil Stratigraphy

Based on the field investigation, the subsurface soils encountered in the borings generally consisted of fat clay overlying claystone to the boring termination depth. Detailed descriptions of the materials encountered in the borings are given on the boring logs presented in Plates 4 through 23.

4.3 Groundwater

Groundwater was not encountered during drilling operations. Groundwater depths determined during drilling typically do not accurately reflect the true groundwater conditions, and therefore should be only considered as approximate. Also groundwater may fluctuate seasonally in response to rainfall and climatic conditions.

5. FOUNDATION RECOMMENDATIONS

5.1 General

Colony Park Development will involve construction of single family homes. Based on site characterization study, the subsurface of the site generally consists of fat clays, which have high potential of swelling or shrinking. In this section, engineering characteristics of swelling and shrinking soils are discussed, and relevant recommendations for foundation selections and design are provided.

5.2 Expansive Soil

One of the major design factors for lightly loaded structures in the Austin area is the shrinking and swelling potential of fine-grained soils. The shrink/swell movements can be estimated through the use of the Plasticity Index (PI). Generally, the higher the PI of a material, the greater the potential for soil movements during moisture changes.

Shrink-swell movement occurs in response to soil moisture content changes. Moisture changes occur beneath the slab due to seasonal changes in the relative amount of rainfall and evaporation potential. These variations cause cyclic changes in soil moisture. Also, fluctuation in soil moisture results from the construction of a slab-on-grade floor due to the presence of the slab/vapor barrier/grade beam system. The installation of the slab, vapor barrier, and grade beams reduces the natural moisture transfer from the subsurface beneath the building and generally causes the soil moisture content to increase in the soil beneath the building after construction. Another significant cause of soil moisture change is changes in vegetation, particularly trees, associated with landscaping. Landscape automatic sprinkler systems can also add moisture.

The shrink-swell movement may be assessed by estimating Potential Vertical Rise (PVR). The PVR represents the potential ability of a soil material at a specific density, moisture and loading condition to swell. PVR values were calculated by the TEX 124-E method for the upper 15 feet of soils at the site, using average condition and worst condition (dry state), respectively and summarized in the table below. The existing moisture content values at this site indicate that the soils are in a relatively dry state. It indicates the potential movement of the soils that may be realized if the soils are wetted up from a relatively dry condition. The PVR value is provided to demonstrate the relative severity of the swell potential of the clays at the site; however, we do not intend that the value be used directly as a design parameter. The actual amount of swell the buildings may experience depends on many variables, such as the time of construction or construction methods, which are not known at the time of this study.

Boring #	PVR at average condition (inch)	PVR at dry condition (inches)	PVR at dry condition (inches) with removal and replacement*
B-1	4.38	6.38	0.83
B-2	3.64	5.41	0.78
B-3	5.49	7.36	0.89
B-4	3.97	5.92	0.81
B-5	4.94	6.88	0.86
B-6	3.53	5.23	0.77
B-7	4.94	6.88	0.86
B-8	3.97	5.92	0.81
B-9	4.52	6.52	0.84
B-10	3.74	5.59	0.79
B-11	4.66	6.64	0.85
B-12	4.25	6.23	0.82
B-13	3.64	5.41	0.78
B-14	6.18	7.95	0.93
B-15	4.94	6.88	0.86
B-16	7.16	8.49	0.96
B-17	4.25	6.23	0.82
B-18	4.52	6.52	0.84
B-19	5.07	7.01	0.87
B-20	4.38	6.38	0.83
Average	4.61	6.49	0.84

* Removal and replacement of 14-foot thick natural soils with fill materials of which a liquid limit is 35% and a plasticity index is 15%.

5.3 Building Foundation Selection

Foundations for the structure must satisfy two basic design criteria. First, the bearing pressure transmitted to the foundation soils should not exceed the allowable bearing pressure computed with

an adequate factor of safety. Second, foundation movement due to soil volume change must be within desirable limits.

Based on the criteria above, slab on grade, spread footings, drilled shafts with under-reamed footings, and structural (suspended) floor slabs, are recommended as described below.

5.4 Stiffened Beam and Slab Foundation

Based on our geotechnical investigation, the project site generally consists of highly expansive clays up to the boring termination depth of 20.0 feet. The proposed houses are lightly loaded structures and can be supported by a stiffened beam and slab foundation. A stiffened beam and slab foundation is a slab-on-grade constructed of select fill material, wherein the slab is designed to transfer structural loads to the bearing stratum, and resist differential soil movements.

Beams criss-crossing the interior and around the perimeter provide the stiffening to create a rigid system which may resist the structural loads as well as the external forces generated by the expansive clay soils. A properly designed slab will distribute the loads of the building over a large area and will provide low contact stresses and a large factor of safety against shear failure. All grade beams and floor slabs should be adequately reinforced to minimize cracking as normal movements occur in the foundation soils. A moisture barrier of polyethylene sheeting or similar material should be placed between the slab and the subgrade soils to retard moisture migration through the slab. The structural engineer must determine the beam depth, spacing, and reinforcement based on the slab configuration, anticipated structural loading, and the allowable differential settlement.

The grade beams and stiffening beams founded in the clay or select fill material may be sized as not to exceed a maximum pressure of 2,500 pounds per square foot.

5.5 Spread Footing Foundations

As an alternative to the use of stiffened beam and slab foundations spread footings may be used. Spread footings can adequately support the loads of the lightly loaded structures. In general, it is recommended that the spread footings be founded on the stratum of gravelly sand, sand, and clayey sand below the fat clay. However, the recommended type of materials was not encountered, only fat clays. Consequently, it is recommended that fat clays be excavated and replaced with select fill to a proper depth, where the surcharge from the fill adequately prevents swelling, and the spread footings be founded on the select fill. The footings should be sized for an allowable bearing capacity of 4,000 pounds per square foot. The grade beams used in conjunction with spread footings are discussed in Section 5.7.

5.6 Drilled Pier Foundation Design

The proposed structures may use a drilled pier foundation with under-reamed piers and a suspended slab. Settlements will be negligible for a properly constructed drilled pier foundation. The drilled piers should have an under-reamed or belled end which shall be founded in the very stiff to hard clay at a minimum depth of 15 feet. This depth appears to be below the depth of significant moisture change and the effect of vertical movement in the upper soils will be reduced. The footings should be designed for an allowable net total load pressure of 9,000 pounds per square foot (psf).

If additional load carrying capacity is required, the piers can be designed for a combination of end-bearing and skin friction provided the total load is distributed equally between the two mechanisms. An allowable skin friction value of 300 pounds per square foot is recommended for sizing shafts in contact with the high plasticity clay. It is recommended that the upper 15.0 feet of the soil be non-contributing to the skin friction of the shaft.

Uplift forces will act on drilled shafts as the clay soils surrounding the shaft swell, creating tensile stresses in the concrete that must be resisted by the steel reinforcing structure. One method of estimating the potential uplift force on each of the piers uses the following equation.

$$U_p = 60,000d$$

where

$$U_p = \text{uplift loads, lbs.}$$

$$d = \text{shaft diameter, ft.}$$

This equation is based on the assumption that the clay soils within the upper 15 feet of the final ground surface contribute to uplift forces acting on the drilled piers. A 15 to 20 foot active zone is considered to be appropriate for naturally occurring seasonal changes in soil moisture content. Events such as ponding of water from inadequate drainage, excessive lawn irrigation, and broken utility lines next to the foundation may effectively increase the active zone depth and result in unanticipated uplift forces and movements.

Each shaft should be provided with sufficient vertical steel reinforcement extending from the top to within six inches of the bottom of the piers to resist tension stresses created by swelling soil uplift. This recommendation should not preclude the use of additional reinforcement for lateral load considerations or axial compression or minimal reinforcement required by codes.

5.7 Grade Beams

Due to the highly expansive clays at this site, the grade beams used in conjunction with spread footings and drilled piers should be protected from the expansive clay soils. A minimum void space of eight inches should be maintained between the grade beam and the soils. Commercially available cardboard void boxes should be sufficient to create the required void. This void space allows movement of the soils below the grade beams without distressing the structural system.

We recommend that exterior grade beams should be at least 24 inches deep, and that interior beams should be at least 18 inches deep. The purpose of the grade beam is to both stiffen the floor slab and to transmit the structural loads to the drilled shaft foundation system bearing on volumetrically stable soils. However, in the absence of special measures such as void boxes, the grade beams will be subjected to shrink-swell loads from the soil beneath the grade beams.

5.8 Floor Slabs – Drilled Pier

The clay soils at the proposed locations of buildings are considered to have a high potential for volume change with changes in moisture content. The best means of eliminating these yearly cyclic floor movements is to use a suspended floor system, in which the floor slabs are structurally suspended and isolated from the expansive subgrade with a minimum of eight inches of void.

5.9 Drilled Footing Construction Considerations.

Pier excavations should be checked for size and to see that the proper penetration into competent soil stratum is obtained and that the foundation surface is free of loose material. Accurate records of the foundation depths and size should be obtained during the construction operations. Foundation concrete should be placed as soon as practical in the same work day after completion of the drilling operations in order to reduce the possibility of water leaks occurring through casings and to avoid the necessity for additional clean out operations.

Groundwater was not encountered in the borings during drilling operations. It should be noted that groundwater levels may vary due to rainfall and other seasonal changes. The contractor should be prepared to dewater the footing excavation to keep the hole clean and dry for this project if water is encountered during construction.

Drilled shaft construction and installation should follow ACI 336.1-89. A few specific recommendations follow.

1. Drilled shaft excavations should be inspected for verticality and side sloughing. Verticality is specified at one inch in ten feet of the shaft length, and should be checked to the full depth of dry augering prior to introducing drilling mud or fluids.
2. Before placing concrete, the pier bottom should be cleaned out with a drilling bucket in order to remove any sediments that may not be displaced by the concrete. The shaft bottoms should be cleaned with a "clean-out" bucket until rotation on the bottom without crowd (i.e. penetration under force) produces little spoil. Probing after clean-out is essential to verify the condition of the base of the shaft.
3. Concrete placement should be accomplished as directed in City of Austin Standard Specification Item 420. The tremie pipe diameter should be at least eight times as large as the largest concrete aggregate size.
4. A computation of the final concrete volume for each shaft should be made. Shafts taking an unreasonably high or low volume of concrete should be cored to check their integrity.
5. Shaft excavations should not be made within three shaft diameters (edge to edge) of shafts which have been concreted within the last 24 hours.

5.10 Drilled Pier Spacing

The spacing between centers of piers should be at least 3 times the bell diameter. The minimum clear spacing between any two under-ream bells should be at least one diameter of the size of the bell. If piers are placed closer, stress concentrations will occur beneath the piers that may exceed the allowable bearing capacity. If a spacing less than three diameters is planned, HVJ Associates, Inc. should be contacted to assess group capacity.

5.11 Building Settlement

With the indicated bearing pressures and loads, settlement is estimated to be less than one (1) inch at the following conditions.

1. An allowable bearing pressure of 2,500 psf for a stiffened beam and slab foundation.
2. The allowable bearing pressure of 4,000 psf is used with a minimum of 14-foot of natural fat clay removed and replaced with select fill material.
3. The drilled pier is founded in very stiff to hard clay at a minimum depth of 15 feet below existing grade and the allowable unit end bearing of 9,000 psf with under-reamed piers and a suspended slab.

Differential settlement will result from variances in subsurface conditions, loading conditions and construction procedures, such as cleanliness of the bearing area. Differential movement between adjacent columns is estimated to be approximately one-half of the total settlement.

5.12 Building Pad Preparation

- The building area should be stripped of all vegetation or other deleterious materials.
- If slab-on-grade is selected, remove at least fourteen feet of existing highly plastic clay material to a minimum of five feet beyond the edge of the building line and replace with select structural fill material.
- The top six inches of the exposed subgrade should be scarified and compacted to greater than 95 percent of the maximum dry density and at ± 3 % of optimum as determined by TxDOT TEX-114-E compaction test
- The site should be proof rolled with heavy equipment to evidence any soft spots in the subgrade. The soft spots should be excavated to firm soil and the excavated soils replaced with select fill.

5.13 Select Structural Fill

Select fill should consist of a non-expansive, well graded soil with sufficient binder material for compaction purposes. Crushed limestone meeting the specifications of 1995 TxDOT Item 247, Type A, Grade 3 or better may be used, or alternatively, the following specification may be used as a guide:

Maximum Aggregate.....	3 inches
Percent Retained on #4 Sieve	25-50
Percent Retained on #40 Sieve	50-75
Plasticity Index.....	5-15
Non-Organic	

Select fill material should be compacted to a minimum of 95% of TEX-113-E maximum dry density near optimum moisture content. A maximum compacted lift thickness of six inches should be specified, with each lift tested for compliance prior to the addition of subsequent lifts.

5.14 Drainage Materials

Materials used for drainage purposes behind subsurface walls should consist of ASTM-C-33-82, Size 67 gravel aggregate. This material should be compacted to a minimum of 95% of TEX-113-E. Back-washing is not considered to be an acceptable method of backfilling and compacting.

5.15 Foundation Monitoring

We recommend that any fill placed beneath the structure be monitored to determine compliance with the plasticity and compaction requirements discussed above by an accredited construction materials testing laboratory. HVJ Associates would be pleased to provide this service.

It is recommended that each pier and/or beam excavation be monitored by the Project Engineer, Architect, or Owner's Representative prior to placing concrete. The excavation should be checked to verify that a) the piers and/or beams have been constructed to the specified dimensions at the correct depth and into appropriate stratum as recommended in this report, b) the piers and/or beams are concentric with pier shafts or columns, and c) the loose cuttings and any soft-compressible materials have been removed from the bottom of the excavation. Placement of concrete should be accomplished as soon as possible to reduce changes in the state of the stress and caving of the foundation soils. The contractor should not pour piers and/or beams without the prior acceptance by the Project Engineer, Architect, or Owner's Representative.

6. PAVEMENT DESIGN

6.1 General

The proposed project includes single family dwellings with a collector street and a majority of residential streets. The proposed traffic load is not yet defined, but due to the type of development and zoning, vehicular traffic will have a small component of truck traffic, mainly during construction of the housing. We estimate the truck traffic to be less than 5% throughout the life of the pavement. At the issuance of this report we do not have Average Daily Traffic (ADT) volumes per day. The following recommendations are based on typical collector streets, and residential streets we have recommended in swelling soils.

6.2 Pavement Sections

The predominant subgrade soil materials identified in the project borings are highly plastic, fat clay. The fat clay soil types are not recommended as a base directly under the wearing surface. These clays have potentially high to very high expansion characteristics and practically impervious drainage characteristics.

Since the soils investigation for the project site indicates more than two feet of expansive subgrade with Plasticity Indices greater than 25, additional measures are required to reduce the effect of swelling soils on pavement performance, as well as provide a working platform for construction equipment and a moisture barrier to aid in keeping water out of the base. It is recommended that the top eight inches of the finished subgrade be stabilized with hydrated lime for collector streets. The resulting pavement thickness designs for flexible and rigid pavement alternatives are summarized below:

Location	Flexible Pavement Section
Collector Street	4" Hot Mix Asphaltic Concrete (HMAC) 13" Crushed Limestone Base 8" Lime Stabilized Subgrade
Residential Roads	2" Hot Mix Asphaltic Concrete (HMAC) 10" Crushed Limestone Base

It is important that proper perimeter drainage be provided so that infiltration of subgrade water from unpaved areas surrounding the pavement is minimized, or if this is not possible, curbs should extend through base and into the subgrade. Extending the base layer beyond the pavement edge will also provide better edge support and reduce the potential for edge cracks.

6.3 Preparation of Subgrade

Subgrade preparation for the proposed pavement sections should consist of clearing, stripping, proof-rolling and lime stabilization. We recommend the following procedures for subgrade preparation:

1. Clear the proposed pavement area. Grubbing operations should be performed to remove root systems of any trees cleared within the limits of the proposed construction.

2. Strip the surface soil to suitable depths. Stripping should extend a minimum of two feet beyond the edge of the proposed pavement.
3. Surfaces exposed after stripping should be proof-rolled with heavy equipment, such as a loaded dump truck, to identify any underlying zones or pockets of soft soils and to remove such weak materials. If backfill is required, the fill material should meet the requirements as described earlier in this report in section 5.13.
4. Scarify the upper eight inches of exposed surface as required, mix with hydrated lime and compact it to 95 percent of maximum dry density as determined by Tex 114E at a moisture content near optimum. For estimation purposes, we recommend using eight percent hydrated lime (by dry weight). We recommend performing additional laboratory testing after subgrade has been prepared to estimate the final required lime. Lime treatment of the clay subgrade should be conducted in general accordance with City of Austin Standard Specifications Item 203.

7. SLOPE STABILITY

The majority of the project is underlain by the Taylor Group. The Taylor Group is comprised of highly-overconsolidated, upper Cretaceous marine clays. These clays and shale are characterized by a high shrink-swell capacity and a high Plasticity Index due to high montmorillite content. The weathered portions, i.e. the clay strata, exhibit downhill creep as a result of the stresses induced during repeated wetting and drying, even on slopes as flat as 11-degrees. The unweathered portion consists of a blue gray low to moderate hardness shale. When exposed, the shale will slake resulting in blocks of material sloughing off the exposed face.

The high swelling, highly plastic clays inherently present difficulties for design and construction. The contractor can expect changes in soil volume depending on drainage patterns that can adversely affect pavement, foundations, and slopes.

These clays generally have natural slopes no greater than 5:1 with residual angles of friction on the order of 11 degrees. Slopes any steeper usually exhibit downslope movements which can either be slow (creep) or fast (slumps or slides) depending on long term wetting and drying patterns.

8. DESIGN REVIEW AND LIMITATIONS

HVJ Associates, Inc. should review the design and construction plans and specifications prior to release to make certain that the pavement design criteria presented herein have been properly interpreted.

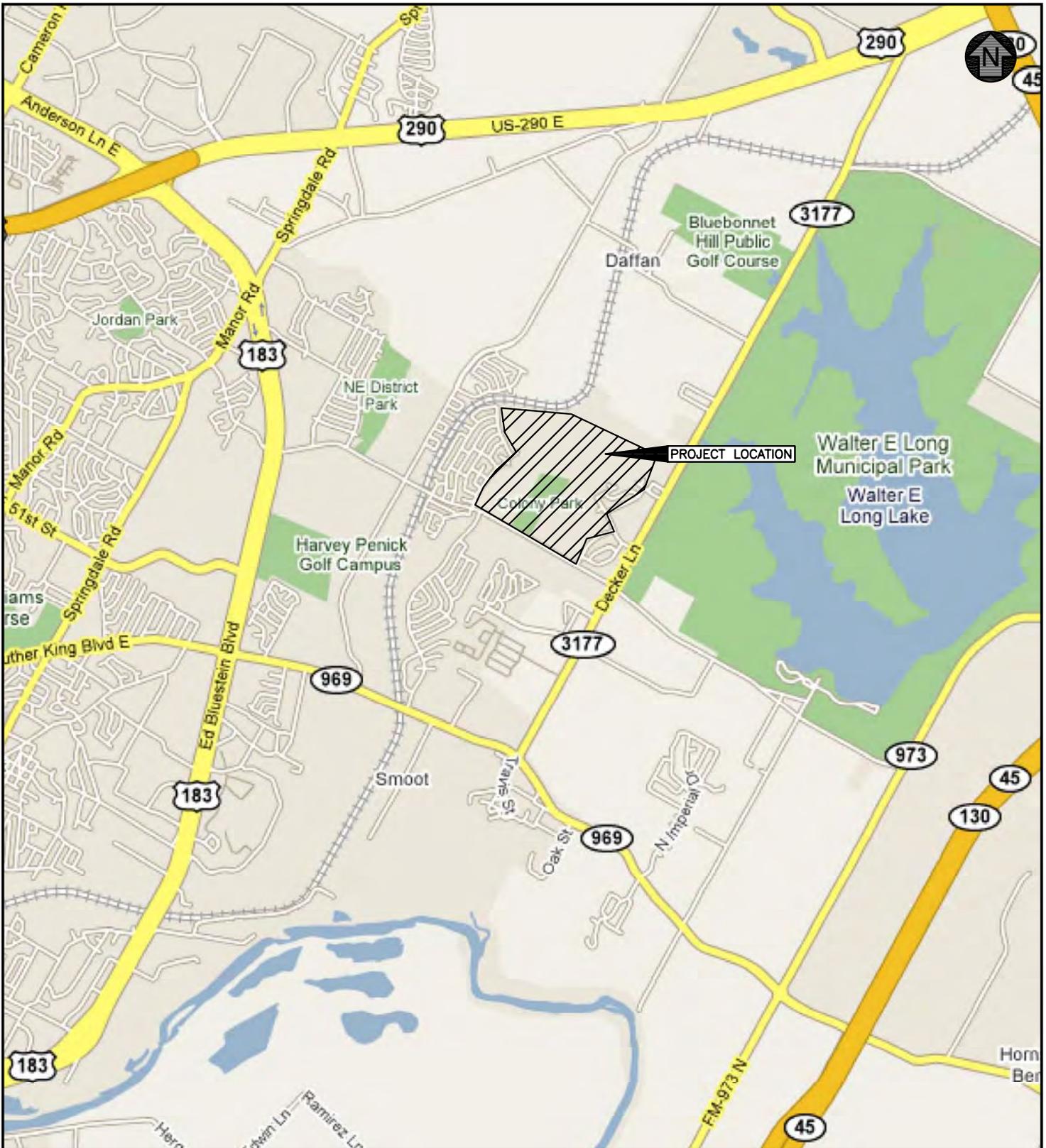
This study was performed for the exclusive use of LJA Engineering & Surveying for specific application to the Colony Park Development in Austin, Texas. HVJ Associates, Inc. has endeavored to comply with generally accepted geotechnical engineering practice common in the local area. HVJ Associates, Inc. makes no warranty, express or implied. The analyses and recommendations contained in this report are based on data obtained from subsurface exploration, laboratory testing, project information provided to HVJ Associates, Inc., and HVJ Associates, Inc.'s experience with similar soils and site conditions.

The methods used indicate subsurface conditions only at the specific location where the single sample was obtained, only at the time it was obtained, and only to the depth penetrated. The sample cannot be relied on to accurately reflect the strata variations that usually exist at locations other than the sampling location. Should any subsurface conditions other than those described in the boring

log be encountered, HVJ Associates, Inc. should be immediately notified so that further investigation and supplemental recommendations can be provided.

Subsurface conditions at the site can differ significantly from those encountered in the boring due to the natural variation of geologic conditions, which may not have been detected by the limited field boring program. In the event that any changes in the nature, design or location of the improvements are made, the conclusions and recommendations in this report should not be considered valid until the changes are reviewed and the conclusions and recommendations modified or verified in writing by HVJ Associates, Inc.

PLATES



DATE: 3/6/2008 8:55:40 AM
 FILE: P:\GEO\Projects\2007\AG 07 16360 Colony Park - LJA\CAD\VIC.dwg



MAP LOCATION



SCALE: N.T.S

DATE: 03/04/2008

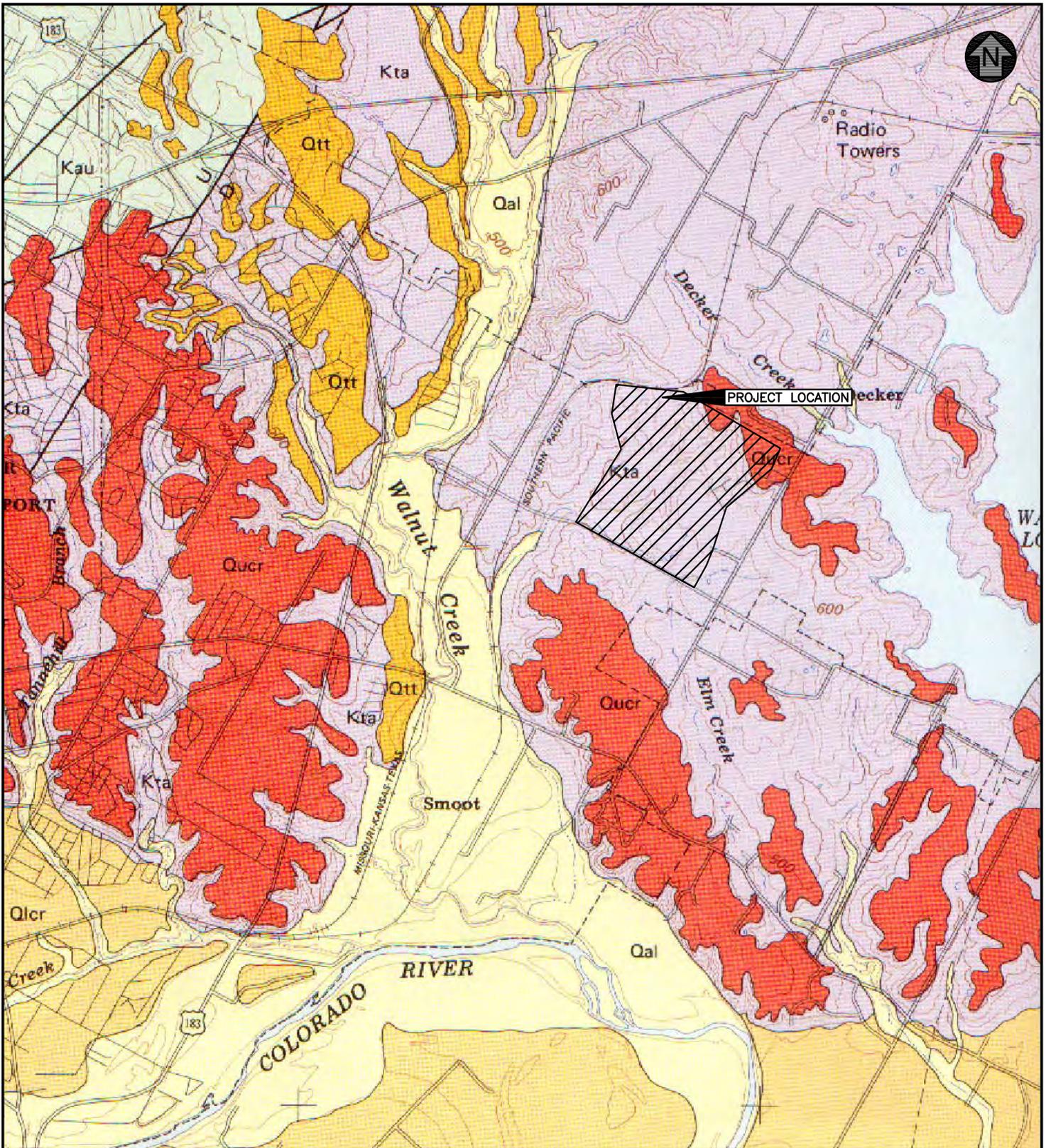
DRAWN BY: YL	PROJ. CHK: JS	APPRV. BY: JS
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VICINITY MAP
 COLONY PARK DEVELOPMENT
 AUSTIN, TEXAS

PROJECT NO.:
AG 07 16360

FILENAME:
VIC

PLATE 1



DATE: 3/6/2008 8:54:40 AM
 FILE: P:\GEO\Projects\2007\AG 07 16360 Colony Park - LJA\CAD\GEO.dwg

LEGEND

- Qal ALLUVIUM
- Qlcr LOWER COLORADO RIVER TERRACE DEPOSITS
- Qucr UPPER COLORADO RIVER TERRACE DEPOSITS
- Qtt TRIBUTARY TERRACE DEPOSITS
- Kta TAYLOR GROUP
- Kau AUSTIN GROUP



MAP LOCATION

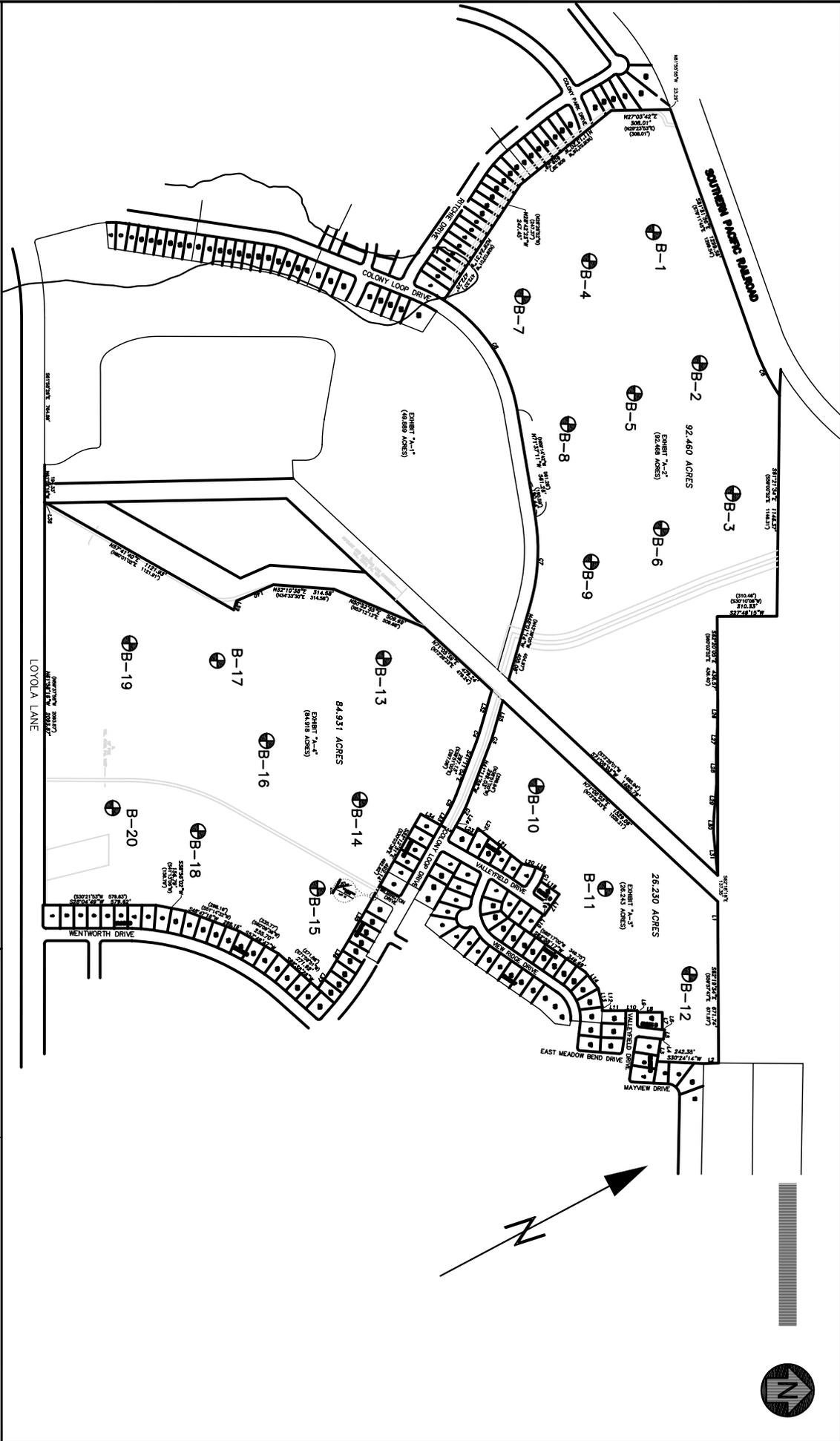


SCALE: N.T.S
 DATE: 03/04/2008

DRAWN BY: YL	PROJ. CHK: JS	APPRV. BY: JS
-----------------	------------------	------------------

GEOLOGY MAP
 COLONY PARK DEVELOPMENT
 AUSTIN, TEXAS

PROJECT NO.: AG 07 16360	FILENAME: GEO	PLATE 2
-----------------------------	------------------	---------



HVJ
 ASSOCIATES

SCALE:	N.T.S.
DATE:	03/06/2008
DRAWN BY:	YL
PROJ. CHK:	JS
APPRV. BY:	JS

PLAN OF BORINGS
 COLONY PARK DEVELOPMENT
 AUSTIN, TEXAS

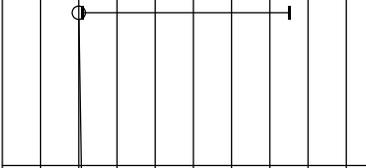
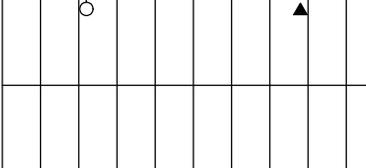
PROJECT NO.:	AG 07 16360	FILENAME:	POB	PLATE	3
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LOG OF BORING

Project: Colony Park Development
 Boring No.: B-1
 Groundwater during drilling: ---
 Groundwater after drilling: ---

Date: 2/25/2008
 Northing: --
 Easting: --

Project No.: AG 07 16360
 Elevation:
 Station: --
 Offset: --

ELEV. DEPTH, FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	SOIL/ROCK CLASSIFICATION	% PASSING NO. 200 SIEVE	DRY DENSITY PCF	<div style="text-align: center;"> SHEAR STRENGTH, TSF ● ■ ▲ * 0.5 1.0 1.5 2.0 </div> <div style="text-align: center;"> MOISTURE ○ CONTENT, % PLASTIC LIMIT ┆ LIQUID LIMIT 10 20 30 40 50 60 70 80 90 </div>
0		Dark greenish gray, hard, FAT CLAY (CH) . (Taylor Group) - with gravel at 2'			
5		Grayish green, hard, FAT CLAY (CH) . (Taylor Group)	96		
10		Grayish green, low hardness, CLAYSTONE with calcareous deposits; gypsiferous. (Taylor Group)	103		
15					
20					
25					
30					
35					

Shear Types: ● = Hand Penet. ■ = Torvane ▲ = Unconf. Comp. * = UU Triaxial

See Plate 3 for boring location.

PLATE 4

LOG OF SOIL BORING AG 07 16360 COLONY PARK TRACT.GPJ HVJ.GDT 3/10/08

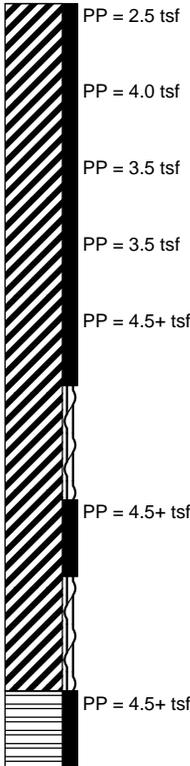
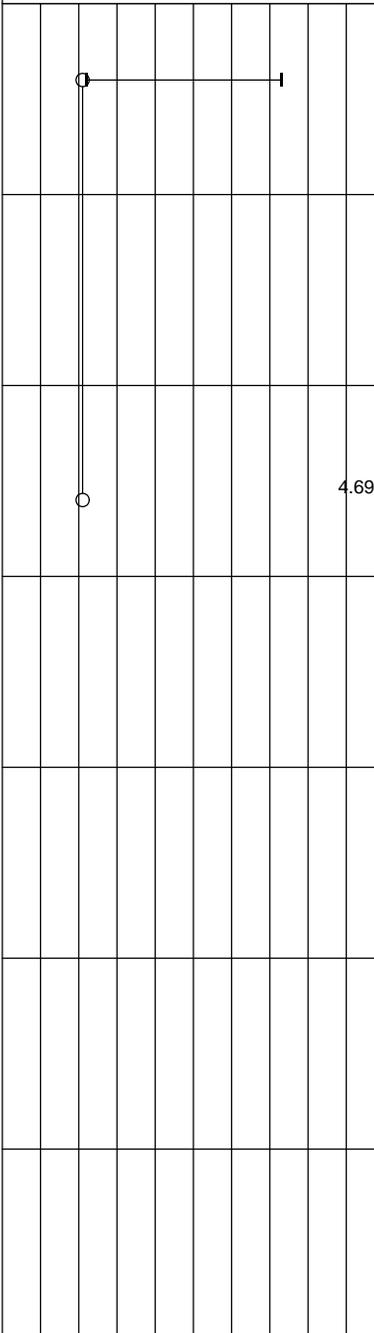


LOG OF BORING

Project: Colony Park Development
 Boring No.: B-4
 Groundwater during drilling: ---
 Groundwater after drilling: ---

Date: 2/26/2008
 Northing: --
 Easting: --

Project No.: AG 07 16360
 Elevation:
 Station: --
 Offset: --

ELEV. DEPTH, FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	SOIL/ROCK CLASSIFICATION	% PASSING NO. 200 SIEVE	DRY DENSITY PCF	<div style="text-align: center;"> SHEAR STRENGTH, TSF ● ■ ▲ * 0.5 1.0 1.5 2.0 </div> <div style="text-align: center;"> MOISTURE ○ CONTENT, % PLASTIC LIMIT LIQUID LIMIT 10 20 30 40 50 60 70 80 90 </div>
0	 <p>PP = 2.5 tsf PP = 4.0 tsf PP = 3.5 tsf PP = 3.5 tsf PP = 4.5+ tsf PP = 4.5+ tsf PP = 4.5+ tsf</p>	Greenish gray, stiff to hard, FAT CLAY (CH) . (Taylor Group) - hard Dark gray, low hardness, CLAYSTONE . (Taylor Group)	98	107	 <p style="text-align: right;">4.69</p>

Shear Types: ● = Hand Penet. ■ = Torvane ▲ = Unconf. Comp. * = UU Triaxial

See Plate 3 for boring location.

PLATE 7

LOG OF SOIL BORING AG 07 16360 COLONY PARK TRACT.GPJ HVJ.GDT 3/10/08

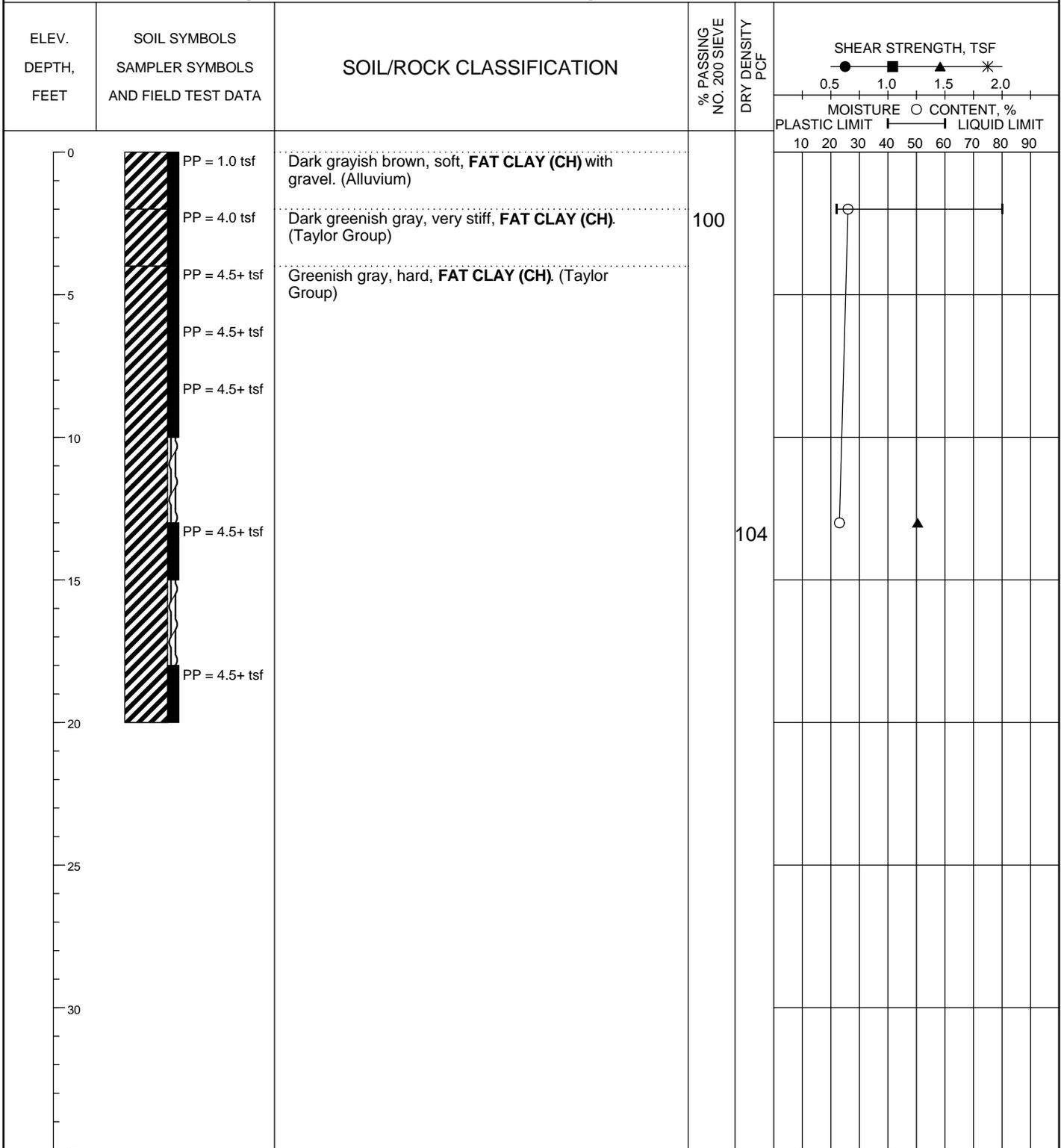


LOG OF BORING

Project: Colony Park Development
 Boring No.: B-5
 Groundwater during drilling: ---
 Groundwater after drilling: ---

Date: 2/26/2008
 Northing: --
 Easting: --

Project No.: AG 07 16360
 Elevation:
 Station: --
 Offset: --



Shear Types: ● = Hand Penet. ■ = Torvane ▲ = Unconf. Comp. * = UU Triaxial

See Plate 3 for boring location.

PLATE 8

LOG OF SOIL BORING AG 07 16360 COLONY PARK TRACT.GPJ HVJ.GDT 3/10/08

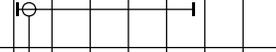


LOG OF BORING

Project: Colony Park Development
 Boring No.: B-6
 Groundwater during drilling: ---
 Groundwater after drilling: ---

Date: 2/26/2008
 Northing: --
 Easting: --

Project No.: AG 07 16360
 Elevation:
 Station: --
 Offset: --

ELEV. DEPTH, FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	SOIL/ROCK CLASSIFICATION	% PASSING NO. 200 SIEVE	DRY DENSITY PCF	<div style="text-align: center;"> SHEAR STRENGTH, TSF ● ■ ▲ * 0.5 1.0 1.5 2.0 </div> <div style="text-align: center;"> MOISTURE ○ CONTENT, % PLASTIC LIMIT ——— LIQUID LIMIT 10 20 30 40 50 60 70 80 90 </div>
0		PP = 1.5 tsf Dark brown, soft, FAT CLAY (CH) with gravel. (Alluvium)			
5	PP = 4.5+ tsf PP = 4.5+ tsf PP = 4.0 tsf PP = 4.5+ tsf	Grayish green, very stiff to hard, FAT CLAY (CH) with calcareous deposits; gypsiferous. (Taylor Group)	99		
10	PP = 4.5+ tsf PP = 4.5+ tsf			104	
15	PP = 4.5+ tsf				
20	PP = 4.5+ tsf				3.01
25					
30					
35					

Shear Types: ● = Hand Penet. ■ = Torvane ▲ = Unconf. Comp. * = UU Triaxial

See Plate 3 for boring location.

PLATE 9

LOG OF SOIL BORING AG 07 16360 COLONY PARK TRACT.GPJ HVJ.GDT 3/10/08



LOG OF BORING

Project: Colony Park Development
 Boring No.: B-7
 Groundwater during drilling: ---
 Groundwater after drilling: ---

Date: 2/25/2008
 Northing: --
 Easting: --

Project No.: AG 07 16360
 Elevation:
 Station: --
 Offset: --

ELEV. DEPTH, FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	SOIL/ROCK CLASSIFICATION	% PASSING NO. 200 SIEVE	DRY DENSITY PCF	<div style="text-align: center;"> SHEAR STRENGTH, TSF ● ■ ▲ ✱ 0.5 1.0 1.5 2.0 MOISTURE ○ CONTENT, % PLASTIC LIMIT ———— LIQUID LIMIT 10 20 30 40 50 60 70 80 90 </div>	
0		Dark greenish gray, hard, FAT CLAY (CH) ; gypsiferous. (Taylor Group)				
5		Greenish gray, hard, FAT CLAY (CH) . (Taylor Group)	91	104		
10		Dark gray, low hardness, CLAYSTONE with clay seams. (Taylor Group)				
15						
20						
35						

Shear Types: ● = Hand Penet. ■ = Torvane ▲ = Unconf. Comp. ✱ = UU Triaxial

See Plate 3 for boring location.

PLATE 10

LOG OF SOIL BORING AG 07 16360 COLONY PARK TRACT.GPJ HVJ.GDT 3/10/08

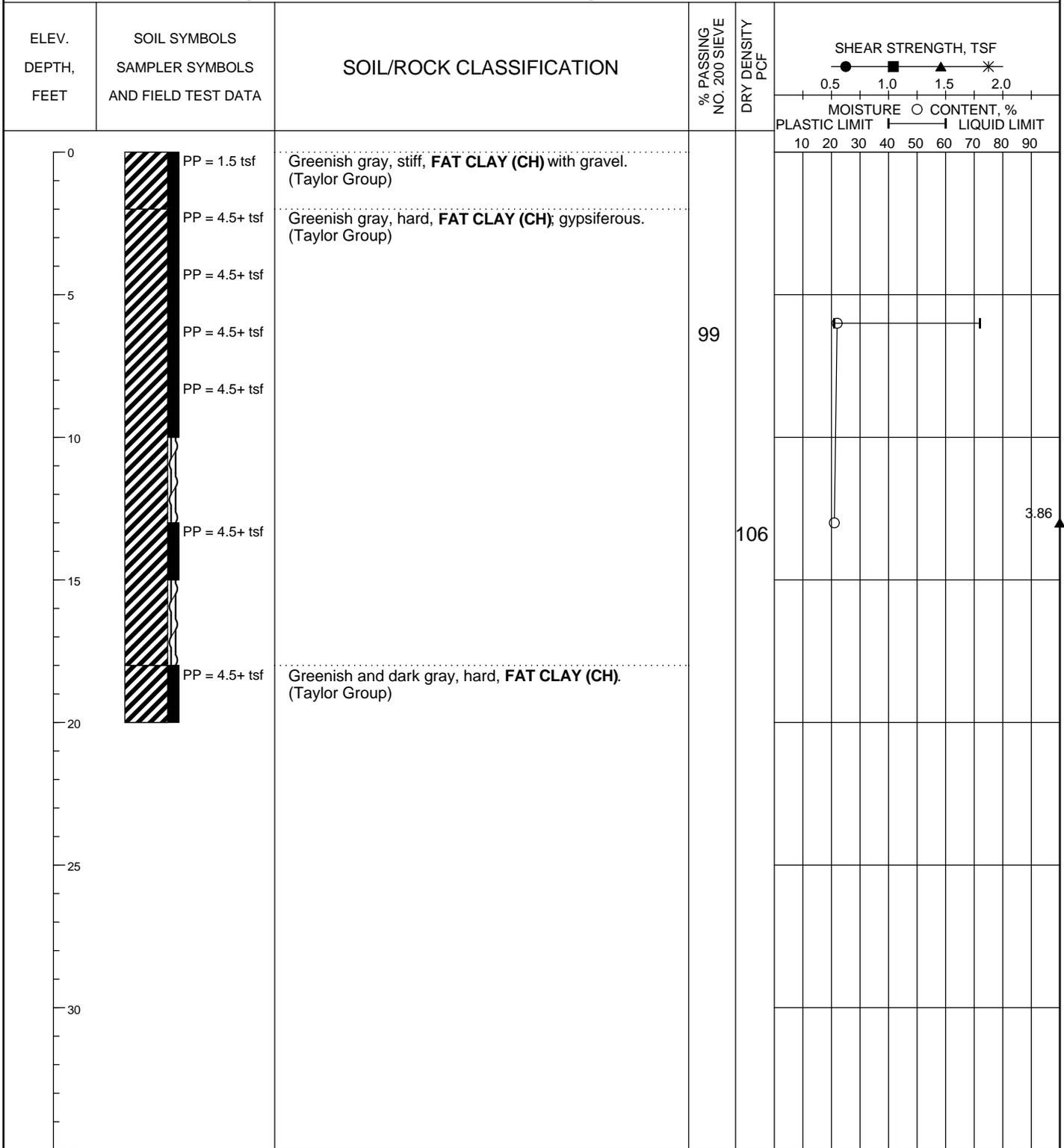


LOG OF BORING

Project: Colony Park Development
 Boring No.: B-8
 Groundwater during drilling: ---
 Groundwater after drilling: ---

Date: 2/26/2008
 Northing: --
 Easting: --

Project No.: AG 07 16360
 Elevation:
 Station: --
 Offset: --



LOG OF SOIL BORING AG 07 16360 COLONY PARK TRACT.GPJ HVJ.GDT 3/10/08

Shear Types: ● = Hand Penet. ■ = Torvane ▲ = Unconf. Comp. * = UU Triaxial

See Plate 3 for boring location.

PLATE 11



LOG OF BORING

Project: Colony Park Development
 Boring No.: B-9
 Groundwater during drilling: ---
 Groundwater after drilling: ---

Date: 2/26/2008
 Northing: --
 Easting: --

Project No.: AG 07 16360
 Elevation:
 Station: --
 Offset: --

ELEV. DEPTH, FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	SOIL/ROCK CLASSIFICATION	% PASSING NO. 200 SIEVE	DRY DENSITY PCF	<div style="text-align: center;"> SHEAR STRENGTH, TSF ● ■ ▲ * 0.5 1.0 1.5 2.0 MOISTURE ○ CONTENT, % PLASTIC LIMIT ┆ ┆ LIQUID LIMIT 10 20 30 40 50 60 70 80 90 </div>
0		Dark greenish gray, stiff to hard, FAT CLAY (CH) ; gypsiferous. (Taylor Group) Greenish gray, hard, FAT CLAY (CH) with orangish brown silt layers throughout. (Taylor Group) - gypsiferous	99	104	

Shear Types: ● = Hand Penet. ■ = Torvane ▲ = Unconf. Comp. * = UU Triaxial

See Plate 3 for boring location.

PLATE 12

LOG OF SOIL BORING AG 07 16360 COLONY PARK TRACT.GPJ HVJ.GDT 3/10/08

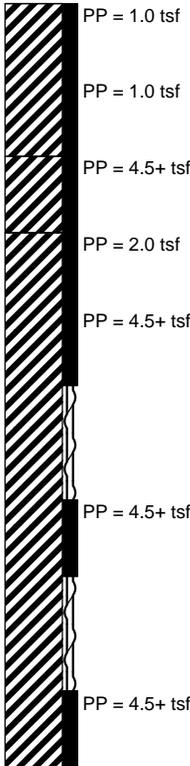
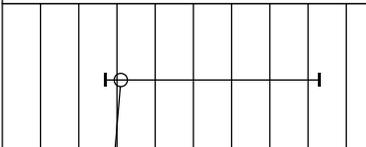
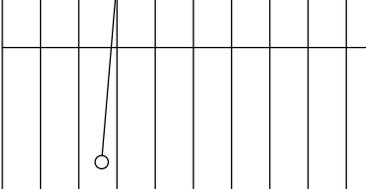


LOG OF BORING

Project: Colony Park Development
 Boring No.: B-11
 Groundwater during drilling: ---
 Groundwater after drilling: ---

Date: 2/27/2008
 Northing: --
 Easting: --

Project No.: AG 07 16360
 Elevation:
 Station: --
 Offset: --

ELEV. DEPTH, FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	SOIL/ROCK CLASSIFICATION	% PASSING NO. 200 SIEVE	DRY DENSITY PCF	<div style="text-align: center;"> SHEAR STRENGTH, TSF ● ■ ▲ ✱ 0.5 1.0 1.5 2.0 </div> <div style="text-align: center;"> MOISTURE ○ CONTENT, % PLASTIC LIMIT ─── LIQUID LIMIT 10 20 30 40 50 60 70 80 90 </div>
0		Dark grayish brown, soft, SANDY FAT CLAY (CH) with organics. (Alluvium)	71		
5	PP = 4.5+ tsf PP = 2.0 tsf PP = 4.5+ tsf	Dark grayish brown, stiff to hard, FAT CLAY (CH) with calcareous deposits. (Alluvium)			
10	PP = 4.5+ tsf	Greenish gray, hard, FAT CLAY (CH) with orange clay layers; gypsiferous. (Taylor Group)		101	
15	PP = 4.5+ tsf				
20	PP = 4.5+ tsf				
25					
30					
35					

Shear Types: ● = Hand Penet. ■ = Torvane ▲ = Unconf. Comp. ✱ = UU Triaxial

See Plate 3 for boring location.

PLATE 14

LOG OF SOIL BORING AG 07 16360 COLONY PARK TRACT.GPJ HVJ.GDT 3/10/08



LOG OF BORING

Project: Colony Park Development
 Boring No.: B-13
 Groundwater during drilling: ---
 Groundwater after drilling: ---

Date: 2/25/2008
 Northing: --
 Easting: --

Project No.: AG 07 16360
 Elevation:
 Station: --
 Offset: --

ELEV. DEPTH, FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	SOIL/ROCK CLASSIFICATION	% PASSING NO. 200 SIEVE	DRY DENSITY PCF	<div style="text-align: center;"> SHEAR STRENGTH, TSF ● ■ ▲ ✱ 0.5 1.0 1.5 2.0 MOISTURE ○ CONTENT, % PLASTIC LIMIT ———— LIQUID LIMIT 10 20 30 40 50 60 70 80 90 </div>
0		Grayish green, soft to stiff, FAT CLAY (CH) . (Taylor Group)			
5		Grayish green, hard, FAT CLAY (CH) with calcareous deposits; gypsiferous. (Taylor Group)	98		
10		Orange and gray, low hardness, CLAYSTONE . (Taylor Group)		108	
15		Dark gray, low hardness, CLAYSTONE . (Taylor Group)			
20					
25					
30					
35					

Shear Types: ● = Hand Penet. ■ = Torvane ▲ = Unconf. Comp. ✱ = UU Triaxial

See Plate 3 for boring location.

PLATE 16

LOG OF SOIL BORING AG 07 16360 COLONY PARK TRACT.GPJ HVJ.GDT 3/10/08



LOG OF BORING

Project: Colony Park Development
 Boring No.: B-14
 Groundwater during drilling: ---
 Groundwater after drilling: ---

Date: 2/25/2008
 Northing: --
 Easting: --

Project No.: AG 07 16360
 Elevation:
 Station: --
 Offset: --

ELEV. DEPTH, FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	SOIL/ROCK CLASSIFICATION	% PASSING NO. 200 SIEVE	DRY DENSITY PCF	<div style="text-align: center;"> SHEAR STRENGTH, TSF ● ■ ▲ ✱ 0.5 1.0 1.5 2.0 MOISTURE ○ CONTENT, % PLASTIC LIMIT ┆ LIQUID LIMIT 10 20 30 40 50 60 70 80 90 </div>
0	PP = 1.0 tsf	Dark gray, soft, FAT CLAY (CH) with gravel. (Alluvium)			
5	PP = 3.0 tsf PP = 4.0 tsf PP = 3.0 tsf PP = 4.0 tsf	Grayish green, very stiff, FAT CLAY (CH) with orange clay layers; gypsiferous. (Taylor Group)	99		○
10	PP = 4.5+ tsf			121	○ ▲
15	PP = 4.5+ tsf	Dark gray, low hardness, CLAYSTONE . (Taylor Group)			
20					
25					
30					
35					

Shear Types: ● = Hand Penet. ■ = Torvane ▲ = Unconf. Comp. ✱ = UU Triaxial

See Plate 3 for boring location.

PLATE 17

LOG OF SOIL BORING AG 07 16360 COLONY PARK TRACT.GPJ HVJ.GDT 3/10/08



LOG OF BORING

Project: Colony Park Development
 Boring No.: B-15
 Groundwater during drilling: ---
 Groundwater after drilling: ---

Date: 2/25/2008
 Northing: --
 Easting: --

Project No.: AG 07 16360
 Elevation:
 Station: --
 Offset: --

ELEV. DEPTH, FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	SOIL/ROCK CLASSIFICATION	% PASSING NO. 200 SIEVE	DRY DENSITY PCF	<div style="text-align: center;"> SHEAR STRENGTH, TSF ● ■ ▲ ✱ 0.5 1.0 1.5 2.0 MOISTURE ○ CONTENT, % PLASTIC LIMIT ——— LIQUID LIMIT 10 20 30 40 50 60 70 80 90 </div>
0		Dark grayish brown, soft to hard, FAT CLAY (CH) with gravel. (Alluvium)	87	125	○ ———
5		Grayish green, hard, FAT CLAY (CH) with calcareous deposits; gypsiferous. (Taylor Group)			○ ——— ▲
10					
15					
20					
25					
30					
35					

Shear Types: ● = Hand Penet. ■ = Torvane ▲ = Unconf. Comp. ✱ = UU Triaxial

See Plate 3 for boring location.

PLATE 18

LOG OF SOIL BORING AG 07 16360 COLONY PARK TRACT.GPJ HVJ.GDT 3/10/08

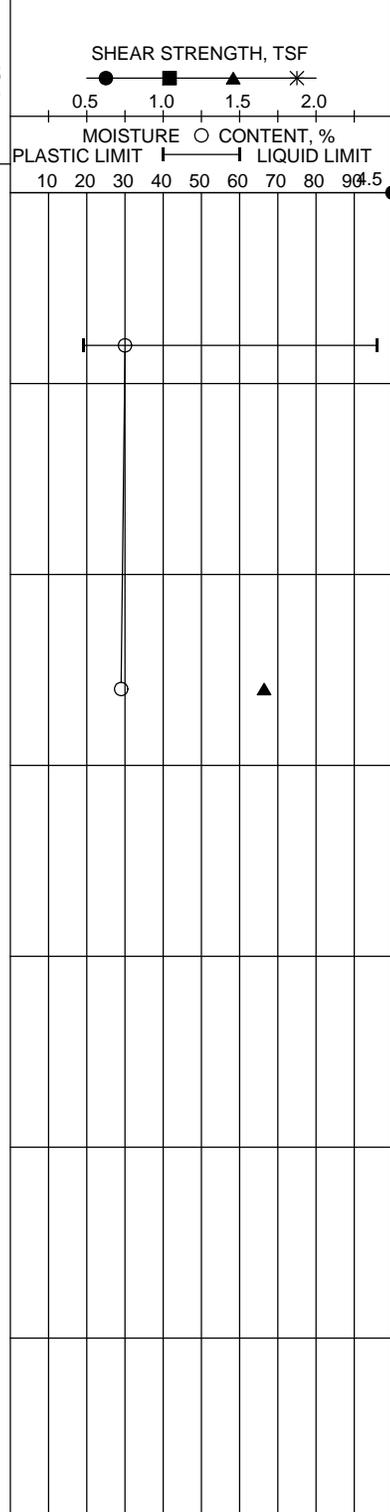


LOG OF BORING

Project: Colony Park Development
 Boring No.: B-16
 Groundwater during drilling: ---
 Groundwater after drilling: ---

Date: 2/27/2008
 Northing: --
 Easting: --

Project No.: AG 07 16360
 Elevation:
 Station: --
 Offset: --

ELEV. DEPTH, FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	SOIL/ROCK CLASSIFICATION	% PASSING NO. 200 SIEVE	DRY DENSITY PCF	<div style="text-align: center;"> SHEAR STRENGTH, TSF ● ■ ▲ * 0.5 1.0 1.5 2.0 MOISTURE ○ CONTENT, % PLASTIC LIMIT ┆ LIQUID LIMIT 10 20 30 40 50 60 70 80 90 95 </div>
0		Greenish gray, stiff, FAT CLAY (CH) with orange clay layers. (Taylor Group)			
5	PP = 1.5 tsf		99		
10	PP = 2.0 tsf				
15	PP = 4.5+ tsf	Grayish green, very stiff, FAT CLAY (CH) with calcareous deposits; gypsiferous. (Taylor Group)	97		
20	PP = 4.5+ tsf				
25	PP = 4.5+ tsf				
30	PP = 4.0 tsf				
35					

Shear Types: ● = Hand Penet. ■ = Torvane ▲ = Unconf. Comp. * = UU Triaxial

See Plate 3 for boring location.

PLATE 19

LOG OF SOIL BORING AG 07 16360 COLONY PARK TRACT.GPJ HVJ.GDT 3/10/08

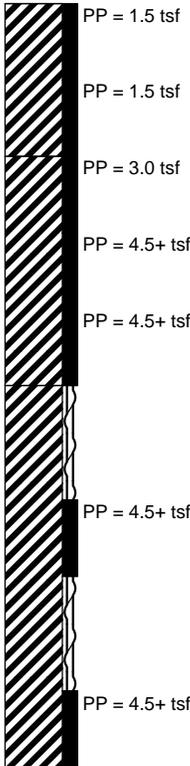


LOG OF BORING

Project: Colony Park Development
 Boring No.: B-17
 Groundwater during drilling: ---
 Groundwater after drilling: ---

Date: 2/27/2008
 Northing: --
 Easting: --

Project No.: AG 07 16360
 Elevation:
 Station: --
 Offset: --

ELEV. DEPTH, FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	SOIL/ROCK CLASSIFICATION	% PASSING NO. 200 SIEVE	DRY DENSITY PCF	<div style="text-align: center;"> SHEAR STRENGTH, TSF ● ■ ▲ * 0.5 1.0 1.5 2.0 </div> <div style="text-align: center;"> MOISTURE ○ CONTENT, % PLASTIC LIMIT LIQUID LIMIT 10 20 30 40 50 60 70 80 90 </div>
0		Greenish gray, stiff, FAT CLAY (CH) . (Taylor Group)			
5		Grayish green and orange, very stiff to hard, FAT CLAY (CH) . (Taylor Group)		100	
10		Tannish green, hard, FAT CLAY (CH) . (Taylor Group)			
15				104	
20					
25					
30					
35					

Shear Types: ● = Hand Penet. ■ = Torvane ▲ = Unconf. Comp. * = UU Triaxial

See Plate 3 for boring location.

PLATE 20

LOG OF SOIL BORING AG 07 16360 COLONY PARK TRACT.GPJ HVJ.GDT 3/10/08



LOG OF BORING

Project: Colony Park Development
 Boring No.: B-18
 Groundwater during drilling: ---
 Groundwater after drilling: ---

Date: 2/25/2008
 Northing: --
 Easting: --

Project No.: AG 07 16360
 Elevation:
 Station: --
 Offset: --

ELEV. DEPTH, FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	SOIL/ROCK CLASSIFICATION	% PASSING NO. 200 SIEVE	DRY DENSITY PCF	<div style="text-align: center;"> SHEAR STRENGTH, TSF ● ■ ▲ * 0.5 1.0 1.5 2.0 </div> <div style="text-align: center;"> MOISTURE ○ CONTENT, % PLASTIC LIMIT LIQUID LIMIT 10 20 30 40 50 60 70 80 90 </div>
0		Dark brown, stiff to hard, FAT CLAY (CH) with gravel. (Alluvium)			
5		Greenish gray, stiff, FAT CLAY (CH) ; gypsiferous. (Taylor Group) - with calcareous deposits	99		
10		Grayish green, very stiff to hard, FAT CLAY (CH) . (Taylor Group)		95	
15					
20					
25					
30					
35					

Shear Types: ● = Hand Penet. ■ = Torvane ▲ = Unconf. Comp. * = UU Triaxial

See Plate 3 for boring location.

PLATE 21

LOG OF SOIL BORING AG 07 16360 COLONY PARK TRACT.GPJ HVJ.GDT 3/10/08

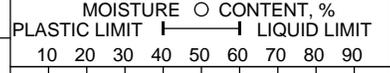
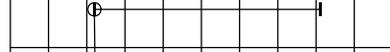


LOG OF BORING

Project: Colony Park Development
 Boring No.: B-19
 Groundwater during drilling: ---
 Groundwater after drilling: ---

Date: 2/27/2008
 Northing: --
 Easting: --

Project No.: AG 07 16360
 Elevation:
 Station: --
 Offset: --

ELEV. DEPTH, FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	SOIL/ROCK CLASSIFICATION	% PASSING NO. 200 SIEVE	DRY DENSITY PCF	<div style="text-align: center;"> SHEAR STRENGTH, TSF  </div> <div style="text-align: center;"> MOISTURE CONTENT, % PLASTIC LIMIT LIQUID LIMIT  </div>
0	 PP = 4.5+ tsf	Dark greenish brown, hard, FAT CLAY (CH) . (Taylor Group)			
	 PP = 4.5+ tsf	- with gravel			
5	 PP = 4.0 tsf PP = 4.5+ tsf	Greenish gray, very stiff to hard, FAT CLAY (CH) . (Taylor Group)	97		
10	 PP = 4.5+ tsf	- reddish brown layers			
15	 PP = 4.5+ tsf PP = 4.5+ tsf	- claystone layers from 13.2' to 13.7'		108	
20	 PP = 4.5+ tsf	- reddish brown silt layers with gypsum			
25		Dark gray, low hardness, CLAYSTONE . (Taylor Group)			
30					
35					

Shear Types: ● = Hand Penet. ■ = Torvane ▲ = Unconf. Comp. * = UU Triaxial

See Plate 3 for boring location.

PLATE 22

LOG OF SOIL BORING AG 07 16360 COLONY PARK TRACT.GPJ HVJ.GDT 3/10/08



LOG OF BORING

Project: Colony Park Development
 Boring No.: B-20
 Groundwater during drilling: ---
 Groundwater after drilling: ---

Date: 2/25/2008
 Northing: --
 Easting: --

Project No.: AG 07 16360
 Elevation:
 Station: --
 Offset: --

ELEV. DEPTH, FEET	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	SOIL/ROCK CLASSIFICATION	% PASSING NO. 200 SIEVE	DRY DENSITY PCF	<div style="text-align: center;"> SHEAR STRENGTH, TSF ● ■ ▲ ✱ 0.5 1.0 1.5 2.0 MOISTURE ○ CONTENT, % PLASTIC LIMIT LIQUID LIMIT 10 20 30 40 50 60 70 80 90 </div>
0	PP = 3.0 tsf	Dark greenish gray, very stiff, FAT CLAY (CH) with gravel. (Alluvium)			
5	PP = 3.0 tsf PP = 3.0 tsf PP = 4.5+ tsf PP = 4.5+ tsf	Grayish and orangish green, very stiff, FAT CLAY (CH) . (Taylor Group) Orangish green, very stiff to hard, FAT CLAY (CH) . (Taylor Group)	99		○ —————
10	PP = 4.5+ tsf	Tannish green, hard, FAT CLAY (CH) . (Taylor Group)			
15	PP = 4.5+ tsf			104	○ ————— 2.65 ↑
20	PP = 4.5+ tsf				
25					
30					
35					

Shear Types: ● = Hand Penet. ■ = Torvane ▲ = Unconf. Comp. ✱ = UU Triaxial

See Plate 3 for boring location.

PLATE 23

LOG OF SOIL BORING AG 07 16360 COLONY PARK TRACT.GPJ HVJ.GDT 3/10/08



SOIL SYMBOLS

Soil Types



Clay



Silt



Sand



Fill

Modifiers



Clayey



Silty



Sandy Clay



Cemented

Construction Materials



Asphaltic Concrete



Stabilized Base

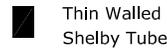


Fill or Debris



Base

SAMPLER TYPES



Thin Walled Shelby Tube



No Recovery



Split Barrel



Auger



Liner Tube



Jar Sample

WATER LEVEL SYMBOLS



Groundwater level determined during drilling operations



Groundwater level after drilling in open borehole or piezometer

SOIL GRAIN SIZE

Classification

Clay
Silt
Sand
Gravel
Cobble
Boulder

Particle Size

< 0.002 mm
0.002 - 0.075 mm
0.075 - 4.75 mm
4.75 - 75 mm
75 - 200 mm
> 200 mm

Particle Size or Sieve No. (U.S. Standard)

< 0.002 mm
0.002 mm - #200 sieve
#200 sieve - #4 sieve
#4 sieve - 3 in.
3 in. - 8 in.
> 8 in.

DENSITY OF COHESIONLESS SOILS

Descriptive Term	Penetration Resistance "N" * Blows/Foot
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	> 50

CONSISTENCY OF COHESIVE SOILS

Consistency	Undrained Shear Strength (tsf)
Very Soft	0 - 0.125
Soft	0.125 - 0.25
Firm	0.25 - 0.5
Stiff	0.5 - 1.0
Very Stiff	1.0 - 2.0
Hard	> 2.0

PENETRATION RESISTANCE

3/6 Blows required to penetrate each of three consecutive 6-inch increments per ASTM D-1586 *
50/4" If more than 50 blows are required, driving is discontinued and penetration at 50 blows is noted
0/18" Sampler penetrated full depth under weight of drill rods and hammer

* The N value is taken as the blows required to penetrate the final 12 inches

TERMS DESCRIBING SOIL STRUCTURE

Slickensided Fracture planes appear polished or glossy, sometimes striated
Fissured Breaks along definite planes of fracture with little resistance to fracturing
Inclusion Small pockets of different soils, such as small lenses of sand scattered through a mass of clay
Parting Inclusion less than 1/4 inch thick extending through the sample
Seam Inclusion 1/4 inch to 3 inches thick extending through the sample
Layer Inclusion greater than 3 inches thick extending through the sample
Laminated Soil sample composed of alternating partings of different soil type
Stratified Soil sample composed of alternating seams or layers of different soil type

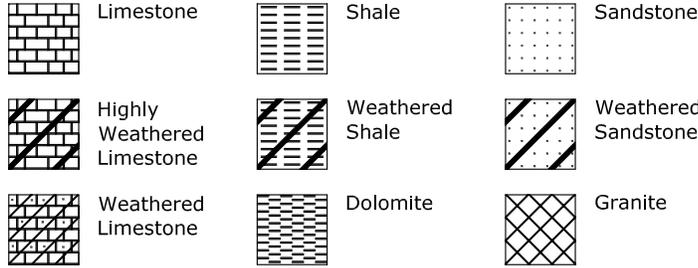
Intermixed Soil sample composed of pockets of different soil type and laminated or stratified structure is not evident
Calcareous Having appreciable quantities of calcium carbonate
Ferrous Having appreciable quantities of iron
Nodule A small mass of irregular shape



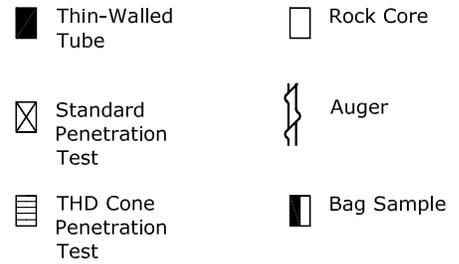
PROJECT NO.:
AG 07 16360
DRAWING NO.:
PLATE 24A

KEY TO TERMS AND SYMBOLS
USED ON BORING LOGS FOR SOIL

ROCK TYPES



SAMPLER TYPES



SOLUTION AND VOID CONDITIONS

Void	Interstice; a general term for pore space or other openings in rock.
Cavities	Small solutional concavities.
Vuggy	Containing small cavities, usually lined with a mineral of different composition from that of the surrounding rock.
Vesicular	Containing numerous small, unlined cavities, formed by expansion of gas bubbles or steam during solidification of the rock.
Porous	Containing pores, interstices, or other openings which may or may not interconnect.
Cavernous	Containing cavities or caverns, sometimes quite large. Most frequent in limestones and dolomites.

HARDNESS

Friable	Crumbles under hand pressure
Low Hardness	Can be carved with a knife
Moderately Hard	Can be scratched easily with a knife
Very Hard	Cannot be scratched with a knife

WEATHERING GRADES OF ROCKMASS⁽¹⁾

Slightly	Discoloration indicates weathering of rock material and discontinuity surfaces.
Moderately	Less than half of the rock material is decomposed or disintegrated to a soil.
Highly	More than half of the rock material is decomposed or disintegrated to a soil.
Completely	All rock material is decomposed and/or disintegrated into soil. The original mass structure is still largely intact.
Residual Soil	All rock material is converted to soil. The mass structure and material fabric are destroyed.

JOINT DESCRIPTION

SPACING		INCLINATION		SURFACES	
Very Close	<2"	Horizontal	0-5	Slickensided	Polished, grooved
Close	2"-12"	Shallow	5-35	Smooth	Planar
Medium Close	12"-3'	Moderate	35-65	Irregular	Undulating or granular
Wide	>3'	Steep	65-85	Rough	Jagged or pitted
		Vertical	85-90		

REFERENCES:

- (1) British Standard (1981) Code of Practice for Site Investigation, BS 5930.
- (2) The Bridge Div., Tx. Highway Dept. Foundation Exploration & Design Manual, 2nd Division, revised June, 1974.

Information on each boring log is a compilation of subsurface conditions and soil and rock classifications obtained from the field as well as from laboratory testing of samples. Strata have been interpreted by commonly accepted procedures. The stratum lines on the logs may be transitional and approximate in nature. Water level measurements refer only to those observed at the times and places indicated, and may vary with time, geologic condition or construction activity.

BEDDING THICKNESS⁽²⁾

Very Thick	>4'
Thick	2'-4'
Thin	2"-2'
Very Thin	1/2"-2"
Laminated	0.08"-1/2"
Thinly Laminated	<0.08"



PROJECT NO.:
AG 07 16360

DRAWING NO.:
PLATE 24B

KEY TO TERMS AND SYMBOLS
USED ON BORING LOGS FOR ROCK

APPENDIX A

LABORATORY TEST RESULTS SUMMARY

LABORATORY TEST RESULTS SUMMARY

Project Name: Colony Park Development

Project Number: AG 07 16360

Boring No.	Depth (ft)	% Passing No. 200 Sieve	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)	Wet Unit Wt. (pcf)	Dry Unit Wt. (pcf)	Strength Test	Compressive Strength (tsf)	Hand Penetrometer Reading (tsf)
B-1	0.0-2.0	95.6	75	54	20.0	125.4	102.7	UC Soil	3.9	4.5+
	2.0-4.0									4.5+
	6.0-8.0									3.5
	8.0-10.0									4.5+
	13.0-15.0									4.5+
	18.0-20.0									4.5+
B-2	0.0-2.0	95.5	69	48	22.1	127.5	104.7	UC Soil	3.7	4.5+
	2.0-4.0									4.5+
	4.0-6.0									4.5+
	6.0-8.0									4.5+
	8.0-10.0									4.5+
	13.0-15.0									4.5+
18.0-20.0	4.5+									
B-3	0.0-2.0	98.5	86	62	28.9	128.8	103.1	UC Soil	6.2	1.5
	2.0-4.0									4.5+
	4.0-6.0									4.5+
	6.0-8.0									4.5+
	8.0-10.0									4.0
	13.0-15.0									4.5+
18.0-20.0	4.5+									
B-4	0.0-2.0	98.0	73	51	21.0	129.5	107.3	UC Soil	9.4	2.5
	2.0-4.0									4.0
	4.0-6.0									3.5
	6.0-8.0									4.5+
	8.0-10.0									4.5+
	13.0-15.0									4.5+
18.0-20.0	4.5+									
B-5	0.0-2.0	99.5	80	58	25.6	128.4	104.1	UC Soil	2.5	1.0
	2.0-4.0									4.0
	4.0-6.0									4.5+
	6.0-8.0									4.5+
	13.0-15.0									4.5+
	18.0-20.0									4.5+
B-6	0.0-2.0	98.7	67	47	24.0	128.2	103.6	UC Soil	6.0	1.5
	2.0-4.0									4.5+
	4.0-6.0									4.5+
	6.0-8.0									4.0
	8.0-10.0									4.5+
	13.0-15.0									4.5+
18.0-20.0	4.5+									

LABORATORY TEST RESULTS SUMMARY

Project Name: Colony Park Development

Project Number: AG 07 16360

Boring No.	Depth (ft)	% Passing No. 200 Sieve	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)	Wet Unit Wt. (pcf)	Dry Unit Wt. (pcf)	Strength Test	Compressive Strength (tsf)	Hand Penetrometer Reading (tsf)	
B-7	0.0-2.0	91.4	82	58	25.2	125.8	104.1	UC Soil	3.1	4.5+	
	2.0-4.0									4.5+	
	4.0-6.0									4.5+	
	6.0-8.0									4.5+	
	8.0-10.0									20.8	4.5+
	13.0-15.0									4.5+	
	18.0-20.0									4.5+	
B-8	0.0-2.0	98.5	72	51	21.7	129.0	106.3	UC Soil	7.7	1.5	
	2.0-4.0									4.5+	
	4.0-6.0									4.5+	
	6.0-8.0									4.5+	
	8.0-10.0									4.5+	
	13.0-15.0									21.4	4.5+
	18.0-20.0									4.5+	
B-9	0.0-2.0	98.9	75	55	23.7	127.9	104.3	UC Soil	4.8	2.0	
	2.0-4.0									4.5+	
	4.0-6.0									4.5+	
	6.0-8.0									4.5+	
	8.0-10.0									4.5+	
	13.0-15.0									22.7	4.5+
	18.0-20.0									4.5+	
B-10	0.0-2.0	97.8	70	49	25.4	130.7	106.4	UC Soil	6.3	1.0	
	2.0-4.0									2.0	
	4.0-6.0									4.5+	
	6.0-8.0									4.5+	
	8.0-10.0									4.5+	
	13.0-15.0									22.8	4.5+
	18.0-20.0									4.5+	
B-11	0.0-2.0	71.3	83	56	31.4	126.8	101.0	UC Soil	4.9	1.0	
	2.0-4.0									1.0	
	4.0-6.0									4.5+	
	6.0-8.0									2.0	
	8.0-10.0									25.5	4.5+
	13.0-15.0									4.5+	
	18.0-20.0									4.5+	
B-12	0.0-2.0	99.5	75	53	25.5	131.1	104.9	UC Soil	5.5	2.5	
	2.0-4.0									4.0	
	4.0-6.0									4.5+	
	6.0-8.0									4.5+	
	8.0-10.0									4.5+	
	13.0-15.0									25.0	4.5+
B-13	0.0-2.0	98.1	69	48	26.0	131.0	107.8	UC Soil	9.3	1.0	
	2.0-4.0									2.0	
	4.0-6.0									4.5+	
	6.0-8.0									4.5+	
	8.0-10.0									4.5+	
	13.0-15.0									21.5	4.5+
	18.0-20.0									4.5+	

LABORATORY TEST RESULTS SUMMARY

Project Name: Colony Park Development

Project Number: AG 07 16360

Boring No.	Depth (ft)	% Passing No. 200 Sieve	Liquid Limit (%)	Plasticity Index (%)	Moisture Content (%)	Wet Unit Wt. (pcf)	Dry Unit Wt. (pcf)	Strength Test	Compressive Strength (tsf)	Hand Penetrometer Reading (tsf)					
B-14	0.0-2.0	99.3	97	68	35.8					1.0					
	2.0-4.0									3.5					
	4.0-6.0									4.0					
	6.0-8.0									3.0					
	8.0-10.0									4.0					
	13.0-15.0									27.0	153.7	121.1	UC Soil	4.2	4.5+
	18.0-20.0									4.5+					
B-15	0.0-2.0	86.7	83	58	23.6					1.5					
	2.0-4.0									4.5+					
	4.0-6.0									4.5+					
	6.0-8.0									4.5+					
	8.0-10.0									4.5+					
	13.0-15.0									25.4	156.3	124.7	UC Soil	2.1	4.5+
	18.0-20.0									4.5+					
B-16	0.0-2.0	98.7	96	76	30.0					1.5					
	2.0-4.0									2.0					
	4.0-6.0									4.5+					
	6.0-8.0									4.5+					
	8.0-10.0									4.5+					
13.0-15.0	28.7	124.6	96.9	UC Soil	3.3	4.0									
B-17	0.0-2.0	99.6	75	53	27.8					1.5					
	2.0-4.0									1.5					
	4.0-6.0									3.0					
	6.0-8.0									4.5+					
	8.0-10.0									4.5+					
	13.0-15.0									25.8	130.6	103.8	UC Soil	2.3	4.5+
	18.0-20.0									4.5+					
B-18	0.0-2.0	99.4	77	55	28.1					2.5					
	2.0-4.0									2.5					
	4.0-6.0									2.0					
	6.0-8.0									2.0					
	8.0-10.0									1.5					
	13.0-15.0									28.4	122.4	95.3	UC Soil	2.3	4.5+
	18.0-20.0									4.0					
B-19	0.0-2.0	97.0	81	59	22.1					4.5+					
	2.0-4.0									4.5+					
	4.0-6.0									4.0					
	6.0-8.0									4.5+					
	13.0-15.0									23.1	132.7	107.8	UC Soil	8.0	4.5+
	18.0-20.0									4.5+					
B-20	0.0-2.0	99.3	77	54	25.2					3.0					
	2.0-4.0									3.0					
	4.0-6.0									3.0					
	6.0-8.0									4.5+					
	8.0-10.0									4.5+					
	13.0-15.0									25.4	130.1	103.8	UC Soil	5.3	4.5+
	18.0-20.0									4.5+					

Appendix F

KOCH PIPELINE PLANS