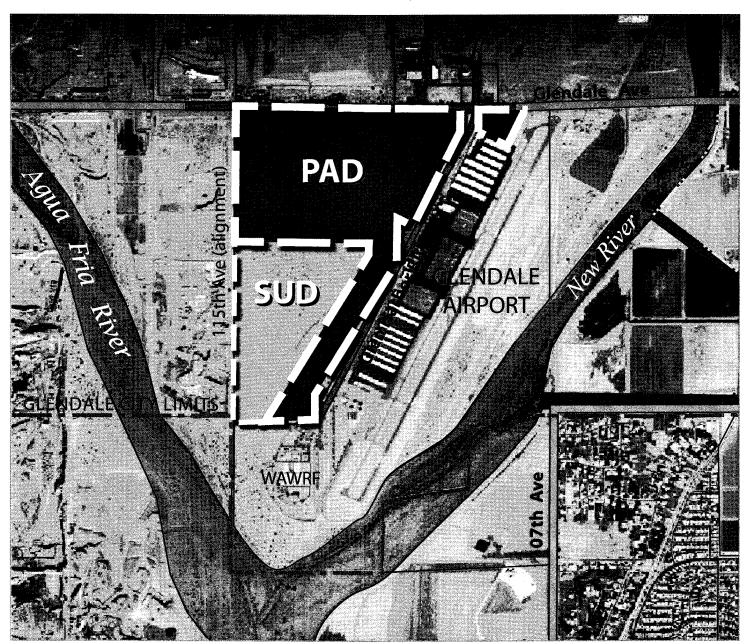


# COPPERWING

AT GLENDALE AIRPORT

CITY OF GLENDALE, ARIZONA



## PLANNED AREA DEVELOPMENT

CASE # ZON08-14 & ZON08-15 & GPA 08-09, 11401 W. GLENDALE AVENUE

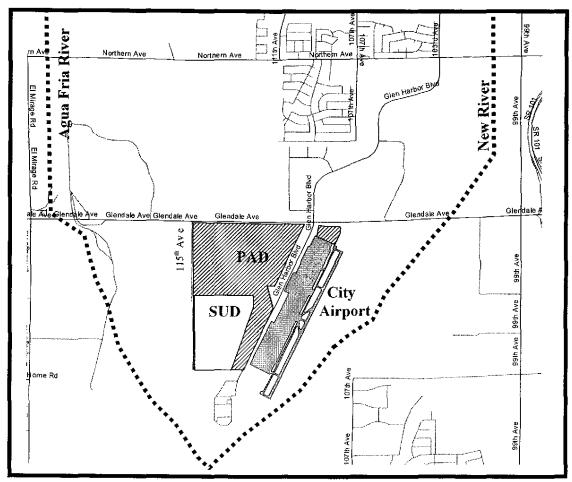
Submitted: June 27, 2008

Revised: September 5, 2008; November 19,2008; December 31, 2008;

February 20, 2009; July 15,2009



# JOHN F. LONG FAMILY REVOCABLE LIVING TRUST



# PLANNED AREA DEVELOPMENT CITY OF GLENDALE, ARIZONA

11401 West Glendale Avenue Yucca District Case No. ZON08-14

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February 20, 2009, July 15, 2009

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7/15/2009

## Section 1 Introduction / Site Analysis

## 1.1 Request

The John F. Long Family Revocable Living Trust (the "Long family") owns the undeveloped industrial property located at the southwest and southeast corner of Glendale Avenue and Glen Harbor Boulevard bounded by the Glendale Municipal Airport (the "Airport") to the east, 115<sup>th</sup> Avenue to the west, Glendale Avenue to the north, and the City West Area Water Reclamation Facility (the "WAWRF") to the south. Attached is a vicinity map and legal description of the property (see **Exhibit A**). The property is within the incorporated limits of the City of Glendale (the "City"). However, the areas generally west of 115<sup>th</sup> Avenue and west of the property are within unincorporated Maricopa County. The site is approximately 316.8 acres and currently zoned M-1, Light Industrial as shown on the City Zoning Map (see **Exhibit B**).

The purpose of this application is to request a Planned Area Development Overlay on approximately 217.5 acres of the property pursuant to Section 5.900 of the City Zoning Ordinance to develop an airpark branded as Copperwing at Glendale Airport (the "PAD"). Included under a separate application, the Long family requests a concurrent request for a Minor General Plan Amendment from Light Industry to Business Park for the 217.5 acres of the PAD. Included under another separate application, is a request to rezone the remaining 99.3 acres of the site as Special Use District Overlay (the "SUD") for an interim phased mining and excavation use. It is the intent of the Long family to incrementally expand the airpark to the south as CEMEX completes the reclamation of each individual area within the excavation site.

Copperwing at Glendale Airport will provide a master planned development that offers a variety of commercial, office, and light industrial uses, as well as an option for some specialty residential focused on occupants who have or operate aircraft. The PAD will include two distinct land use designations. The PAD Zoning Plan and initial Master Development Plan (see Exhibit C) provides 132.3 acres of Planned Business Park (the "Business Park") located near Glendale Avenue and 79.5 acres of Planned Light Industrial (the "Light Industrial") located along the southern portion of the site. Development will occur in multiple phases. As development occurs, parcels may be combined or reconfigured to accommodate different users.

## 1.2 Vision/Objective

The vision for this PAD began over 40 years ago when the Long family purchased this site adjoining the Airport. For the Long family, who has a long tradition and interest in the built-environment of the Glendale area, the challenge of this undeveloped land adjacent to the Airport is to transform it into a development that strengthens the economic impacts of the aviation activities at the Airport and the spin-off impacts in the form of jobs and spending that support the non-aviation businesses in a fiscally prudent manner, consistent with the Long family's longstanding practices. That means identifying a reliable mechanism to finance the installation of necessary

infrastructure without coming to the City for support or overwhelming the site with private debt.

The success in maximizing these economic impacts relies on development on and off the Airport. The City Airport focuses on aviation uses. These aviation uses include management, air charter services, training, aircraft rental, hangars for shading, and maintenance. Off the Airport, the City has its own vision. This includes designation to the west and around the Airport for employment-generating uses as industrial, manufacturing and business park developments that transition to more entertainment, corporate office and mixed use developments east of Loop 101. Development off the Airport began in 1989 with development of the 383-acres north of the Airport, the Glendale Business Park. However, it was not until after 1999 that the Glendale Business Park began to attract the attention of businesses like Serta Mattress and Coca Cola. More recently, entertainment and mixed use development has occurred east of Loop 101 with the University of Phoenix Stadium and mixed use development of West Gate leading the way. This success has seen areas between the Airport and Loop 101, originally envisioned for business park development, become planned for entertainment and mixed uses. This includes the Spring Training Facility and Main Street by Rightpath Limited Development Group.

The objective of this PAD is to provide a master planned development that because of its unique advantage adjoining the Airport and its large size can provide the light industrial employment envisioned along with aviation and non-aviation uses that will service the local business community and foster external economic revenue. The synergy is already in motion on the east side of Loop 101 between Northern Avenue and Camelback Road as an entertainment, retail, and urban residential hub. This PAD will provide the City the opportunity to foster the high quality commercial and industrial employment base envisioned on the west side of Loop 101. Some of the goals of this PAD to meet this objective include the following:

- Encourage development that is consistent with the Western Area Plan policies
- Create effective use of land and circulation systems.
- Encourage a mixture of commercial and office uses while enabling the use of light industrial uses.
- Encourage innovative development to ensure versatility.
- Conform to applicable building codes, including the 2006 IRC, IBC, IMC, UPC, 2005 NEC and 2003 IFC with City of Glendale amendments.
- Provide requirements and guidelines for development. Guidelines are statements that set forth general and not absolute expectations of the developer or the City, and supersede the City's Commercial Design Expectations.

## 1.3 General Plan and Other Area Plan Designations

The City General Plan designates the Site as Light Industry and it lies within the designated Western Growth Area (See Exhibit D). Bordering the property are predominately heavy industrial designations, including the sand and gravel operation on the west side of 115<sup>th</sup> Avenue designated Heavy Industry and the City Landfill and Airport designated as a Public Facility. North of the property along Glendale Avenue are areas designated Business Park, with portions of the intersection of Glen Harbor Boulevard and Glendale Avenue designated Planned Commercial. This PAD complies with the City General Plan in several ways.

- Consistency with the Light Industrial designation. At build-out, light industrial uses will cover approximately 178.8 acres and be the primary component of the 316.8-acre development. The PAD will provide the employment-generating uses proposed on this site.
- Minor General Plan Amendment. To address the business park development and commercial uses of the Business Park land use of the PAD, the Long family requests a Minor General Plan Amendment from Light Industry to Business Park for the 217.5 acres of the PAD. Details on the compliance to the General Plan and other Area Plan designations are available in the narrative for the Minor General Plan Amendment under a separate and concurrent application.

The City Western Area Plan is a specific plan for the area generally bounded by 83<sup>rd</sup> Avenue on the east, 115<sup>th</sup> Avenue on the west, Northern Avenue on the north, and Camelback Road on the south (see **Exhibit E**). The Long family site lies fully within this Area Plan along its western edge. The Future Land Use Plan identifies the site as Light Industry. This Area Plan identifies the west side of Loop 101 as an employment center called the "Airpark Character Area." This PAD complies with this Area Plan in several ways.

- The target market for the Airpark Character Area includes a mix of business park development, office, airport, light manufacturing, and commercial land uses. This is exactly what the PAD will provide this area of the City.
- The Future Land Use Plan categorizes Business Park and Light Industry as one type of use. This is likely because both uses complement one another. The Western Area Plan recognizes that to foster desired economic growth the City needs to encourage flexibility and variation in uses and design. This is precisely the reason the Western Area Plan requires approval of a Development Master Plan. Approval of the Development Master Plan with this PAD will ensure development of the Long property is not piecemeal and includes basic site guidelines that support the goals of the Western Area Plan.

 The Business Park designation at the intersection of Glen Harbor Boulevard and Glendale Avenue responds to the guideline of the Area Plan for development of high quality commercial near this intersection. Commercial and office uses near this intersection provide a better opportunity to incorporate pedestrian amenities and other design elements to create a strong corporate gateway.

#### 1.4 Airport Master Plan

Except for the following, the ongoing City 2008 Airport Master Plan Study (the "Study") does not directly address the site since it is not technically a part of the Airport. Under the Recommended Master Plan Concept, the Study shows hangar-related uses for the approximate 6.1 acres of the site east of Glen Harbor Boulevard. To best realize the employment and sales tax generating goals of the City, the PAD designates this property as Business Park for target uses of a commercial or office nature. This property has traditional prime frontage at the intersection of Glendale Avenue and Glen Harbor Boulevard leading into the adjoining Airport, providing optimal traffic flow for businesses to locate on this parcel. The Study indicates target uses at the Airport of aviation related services (such as corporate jet maintenance or instruction schools) and uses requiring access to airport users or facilities as a key element in their business (such as aircraft parts fabrication or custom distribution services). Although this PAD may include aviation-related uses, the target uses in the PAD will be manufacturing and assembly uses (such as precision component fabricators and food manufacturers) within the Light Industrial category. The target uses in the Business Park category will include research and product development, professional office, wholesale sales and distribution, and hospitality uses.

## 1.5 Existing Zoning

The existing zoning on the Long property is M-1, Light Industrial. With approximately 56-percent of the land area of the PAD designated for light industrial use, the majority of the Copperwing at Glendale Airport already complies with the entitled zoning. However, the Long family requests zoning for a PAD to develop a wider mix of generally less intensive industrial and commercial uses currently outside the M-1 permitted use categories. This PAD will encourage creative use of the site as an economic hub for both the City and national/global markets through the unique connection opportunities with the Airport.

## 1.6 Surrounding Properties

The proposed PAD and SUD are compatible to nearby existing and planned uses. The location of the Long property is in a highly industrialized and undeveloped area of the City (see **Exhibit F**).

The Airport adjoins the property to the east and southeast. The City owns approximately 407 acres of industrial land where the Airport sits. Access to the current facilities at the Airport is via Glen Harbor Boulevard. This street and approximate 120-

foot tall high voltage transmission lines run along the west side of the Airport property creating a man-made buffer between the Long property and the Airport. Except for a 100-space overflow parking lot and the 6.1-acre parcel at the intersection of Glendale Avenue and Glen Harbor Boulevard, all the existing and planned development on the Airport property will occur east and southeast of Glen Harbor Boulevard. This proximity to the Airport provides many opportunities for other uses in addition to the existing light industrial zoning on the property. In part, this is because the Airport has a limited amount of land to accommodate the direct aircraft-related capacity needs that may include, and is not limited to, extending the runway lengths using an Engineered Materials Arresting System, creating wider separation between the runway and taxiways, adding more taxiways, a replacement air traffic control tower, among other design elements related to the movement of aircraft that removes this land from employment and other revenue-producing uses.

The WAWRF exists to the south. It is on 80 acres, with the water treatment plant occupying approximately 15 acres. The proposed light industrial uses in the PAD that adjoin the WAWRF are compatible uses to the heavy industrial use of a public water treatment plant. Access to the WAWRF exists along Glen Harbor Boulevard. No disruption of this access will occur by approval of the PAD. The proximity to the WAWRF provides potential revenue opportunity for the City in providing reclaimed wastewater to certain industrial and business park users. Besides irrigation and aquifer recharge, reclaimed water opportunity exists in processes like plant wash down and operations requiring processing and cooling of water. The recent expansion of the WAWRF treatment capacity of 4.3 million gallons per day to 10 million gallons per day will accommodate the wastewater produced by this project.

Gravel Resources operates a sand and gravel operation on the 160 acres located to the west in unincorporated Maricopa County. This facility is a heavy industrial use with access via 115<sup>th</sup> Avenue. The City General Plan designates this use for Heavy Industry. With future operation and reclamation of the Gravel Resources site unknown, the PAD proposes to develop the land adjoining 115<sup>th</sup> Avenue at the south end of the PAD in later phases. This deferred development also relates to the projected ten year operation of the interim CEMEX sand and gravel facility the Long family proposes under the concurrent Special Use District application.

The City operates a landfill on approximately 388 acres north of the site across Glendale Avenue. It is the dominant visual feature of the area, taller and more massive than any other object in the area. Although no specific plans exist for reclamation of the landfill due to its long lifecycle, we envision no conflicts between the proposed PAD and the landfill or its future reuse. In addition, no conflicts are apparent between the PAD and the City's new Public Safety Training Facility west of the landfill. The Glendale Avenue right-of-way at 130 feet in width will amply buffer both uses from the Long property and potential nuisances.

In addition to the business park development on the Airport, two proposed developments are near the site. The Main Street PAD will be located on approximately 166 acres bounded by Glendale Avenue, New River, Bethany Home Road, and Loop 101. It is a mixed use project for retail, entertainment, golf course, residential and

lodging with allowable heights between 120 to 150 feet compared to this PAD's maximum height of 60 feet. At about a third of a mile and more away from the Site, no conflicts are apparent. If anything, this PAD will provide employment opportunities for residents and potential business services for this development. The Glendale Spring Training Facility will be located south of the Airport off Camelback Road approximately a third of a mile southeast of the Site. It will contain training facilities for the Los Angeles Dodgers and Chicago White Sox that will occupy a large percentage of the land area. However, future plans may include residential, hotel with 18-hole golf course, and retail development. Again, there are no apparent conflicts as the City sewer plant, New River, and the Airport buffer this training facility from the Long property.

Luke Air Force Base, at over 1200 acres, is approximately three miles to the west of the Long property. With Glendale Avenue being the main east route into the base and having a large amount of drive-by traffic as evidenced by the City traffic count data (see **Exhibit G**); this provides a strong customer base to support the commercial and office component of the PAD.

No homeowner associations or neighborhood groups are near the Long property. The large expanse of adjacent industrial uses and the confluence of the intermittent Agua Fria and New River further south of the property buffer this site from the existing residential uses. The nearest existing residential developments of Country Meadows Unit 9 to the northeast and Thoroughbred Farms to the southeast are each approximately one half of a mile or more away from the PAD site. Wigwam Creek North to the southwest is one mile from the PAD site. This isolation from residential uses is another key geographic advantage of this site.

## 2.1 Purpose

The PAD will establish commercial and industrial employment areas to support the goals of the City's Western Area Plan. The Master Development Plan will encourage employment generating uses and promote opportunity for increased revenue generation for the airpark businesses and the Airport. Located west and east between Luke Air Force Base and the City Municipal Airport respectively, the design intent is to transition higher employment density uses north closer to Glendale Avenue. This PAD will allow for flexibility in the types of uses because, except for a small portion of the PAD located east of Glen Harbor Boulevard, the site is outside the 65 decibel and higher noise contours that restrict certain uses or require sound attenuation measures.

There are two land use categories proposed within the PAD: Business Park and Light Industrial. **Table 1**, Land Use Summary depicts the percentage of each land use category to the total area for the project.

•			
Land Use Category	Gross Acreage	Percentage of total Area	
Business Park	132.3	42%	
Light Industrial	79.5	25%	
SUD (Future Light Industrial)	99.3	31%	
Right-of-way	5.7	2%	
Totals	316.8	100%	

Table 1: PAD Land Use Summary

In order to support the development of the project, the Long family and CEMEX have agreed to mine and reclaim the southern 99.3 acres of the site. The southern 99.3 acres is the subject of a separate concurrent Special Use District application, and is therefore not a part of the legal description for this initial application for the project.

## 2.2 General Requirements

#### 2.2.1 Health and Safety

A. Uses or operations of products shall be permitted unless such uses are or may become obnoxious or offensive by reason of the emission of odor, dust, smoke, noise, gas fumes, cinders, vibrations, glare, refuse, or air or water pollution. Applicable mitigation measures will be taken to avoid any of the above nuisances which may negatively affect the safety of aircraft operation at the City Municipal Airport and Luke Air Force Base.

- B. No use shall result in the discharge of any waste materials to any water course, dry wells, storm sewers, or ditch.
- C. No use shall result in the creation of traffic hazards for undue congestion of any public street.
- D. No use shall create a physical hazard by reason of fire, explosions, or use of radioactive materials or any similar cause of property in the same or adjacent properties.
- E. Explosive or hazardous processes require approval by Glendale Fire Department that all manufacturing, storage, and waste processes meet all safety and environmental standards as administered by the department.

#### 2.2.2 Visibility

A. All uses shall be conducted within an enclosed building unless otherwise permitted. Outside storage of materials and equipment related to the primary activity is permitted provided that the outside storage area is screened by a wall pursuant to this PAD.

#### 2.2.3 Other

- A. Any use or uses within the PAD are allowable on utility easements, including the 460-foot wide electric transmission line easement, within the PAD in accordance with applicable health and safety provisions.
- B. Dining, hospitality, or other related businesses within the PAD may obtain a liquor license pursuant to City of Glendale and State of Arizona requirements.

#### 2.3 Business Park

#### 2.3.1 Purpose

The Business Park category will target administrative and research industries; offices; light manufacturing; associated warehousing, distribution, and assembly uses; and a variety of commercial/office support services. It is anticipated that many of the types of businesses may relate to construction due to the large undeveloped residential and industrial designated areas west of Loop 101. These businesses may include wholesale and retail sales to contractors and the general public. Closer to Glendale Avenue, this category will target a spectrum of consumer needs, including supportive uses (i.e. restaurants, hotels, real estate offices, etc.). The uses within this category will primarily respond to the needs generated by the nearby Airport, Glen-Harbor Airpark, heavy industrial businesses, Luke Air Force Base, and commuting traffic along Glendale Avenue.

The intent of this category is to accommodate integrated or freestanding uses within an enclosed building. Uses related to consumer needs will be

oriented to the major street frontages, primarily Glendale Avenue, Glen Harbor Boulevard, and major internal streets within the PAD.

#### 2.3.2 Permitted Uses

- A. Offices for professional, administrative, clerical, financial, medical, or other business or professional services.
- B. Laboratories for research and product development.
- Medical and dental clinics and laboratories.
- D. Manufacturing or assembly of finished products, so long as the primary use of the property is not the basic processing and compounding of raw materials.
- E. Motion picture production, recording studios, radio and television broadcast studios, but not including transmitter towers.
- F. Health clubs, including gymnasiums, indoor pool, sauna, spa or hot tub facilities, racquetball, handball and other similar indoor sports activities.
- G. Commercial, trade, or business schools.
- H. Full service restaurants.
- Financial institutions.
- J. Business support services.
- K. Child care center.
- L. Hospitality Uses, including motels or hotels including conference or convention facilities, full service restaurants, bar or cocktail lounge, live entertainment, and related retail and service uses incidental thereto.
- M. Wholesale sales and distribution of finished goods.
- N. Outdoor sales and displays when the products and services are customary, accessory, and incidental to those sold and displayed in a primary business being conducted in a permanent building on the property. No outdoor sales or display shall interfere with pedestrian access ways, fire lanes, required parking spaces, driveways, landscape areas, or traffic visibility at driveway entries and street intersections.
- O. Manufacturing, compounding, processing or treatment of products incidental to a retail store or business, and where all such completed products are sold at retail on the premises.
- P. Retail stores:

- General merchandising, including variety and specialty stores.
- 2. Food.
- 3. Apparel and accessories.
- 4. Home and office furnishings.
- Hardware stores.
- Q. Personal Services.
  - 1. Small appliance repair shops for computer and office equipment.
  - 2. Laundry, cleaning, and dry-cleaning establishments, limited as follows:
    - a. Maximum of one thousand (1,000) square feet of floor area to be occupied by or devoted to machinery to be used for laundry, cleaning, dyeing, and finishing work.
    - Retail service to individual customers only and no wholesaling of any commodity or service shall be permitted.
- R. Automotive rental offices, including related on-site storage of rental cars.

#### 2.3.3 Uses Subject to a Conditional Use Permit

- Self-storage facilities, for storage purposes only.
- B. Automobile, boat, motorcycle, and recreational vehicle dealerships.
- C. Single-user monopole wireless communication facilities.
- D. Wireless communication facilities-alternative design tower.
- E. Convenience uses.
  - 1. No more than five (5) convenience uses shall be allowed in the PAD.
  - 2. Convenience uses are commercial activities, which have relatively high traffic generation compared to other commercial uses. A use is designated as a "convenience use" if the method of operation includes one (1) or more of the following characteristics:
    - a. Retail gasoline is sold.
    - b. The primary business is the sale of food or drink for consumption, either on or off premises, over a counter, or from an outdoor service window or automobile drive-thru service window. Of the food or

- drink sold, at least 20 percent is in disposable, carry out, or edible containers.
- c. Stores less than seven thousand five hundred (7,500) square feet where food and drink is sold primarily for consumption off premises, as in fast food restaurants.
- d. Car washes (self-service and/or automated).
- e. Any commercial use with service designed to be accessed by occupants of a vehicle, including uses with a drive-thru window.
- 3. No stand alone retail gasoline sales or car washes shall be permitted. These uses are allowable only with convenience stores.
- 4. Drive-thru service windows shall be on the internal side of convenience uses and architecturally integrated into the building.
- 5. All site walls, screen walls or pump island canopies and other outdoor covered areas shall be architecturally integrated with the building by using similar material, color and detailing.
- Convenience uses shall share similar design elements to reflect the character of nearby buildings within the PAD. This may include landscaping, architectural features, form, material, and color.

#### 2.3.4 Prohibited Uses

- A. Small appliance repair, except shops for the repair of computer or office equipment.
- B. Veterinary clinics.

## 2.4 Light Industrial

#### 2.4.1 Purpose

The Light Industrial category will target industries involving light manufacturing, assembling, warehousing, distribution services, and wholesale activities of medium intensity compatible with adjacent properties. Uses may include aeronautical, agricultural, military, and other similar types of sales, manufacturing and services. Aeronautical uses may include manufacturing, whole aircraft and parts distributing, aircraft parts rebuilding/servicing, flight school offices, and similar operations. As in the Business Park category, this land use may include accessory wholesale and retail sales and commercial/office support services. The category allows manufacturing or assembly of finished products so long as the primary use of the property is not the basic processing and compounding of raw materials.

#### 2.4.2 Permitted Uses

- A. Manufacturing and Assembly.
  - Food processing and kindred products, except: fish canning and curing, meat products, and rendering or refining of fats and oils.
  - 2. Textile mill products not including dyeing or finishing.
  - 3. Leather and leather products.
  - 4. Stone, clay and glass products.
  - 5. Fabricated metal products.
  - Machinery.
  - 7. Electrical machinery, equipment, and supplies.
  - 8. Transportation equipment.
  - 9. Wood products, finished.
- B. Non-Manufacturing.
  - Wholesalers, except those involving explosives, fowl, fish, or seafood.
  - Lumber and building material yards.
  - 3. Contract construction.
  - 4. Trucking and warehousing.
  - 5. Recycling centers or automated collection center.
  - Recreational vehicle storage facilities.
  - 7. Laundry, dry cleaning, and dyeing establishments, retail or wholesale, including bulk storage.
- C. Support.
  - 1. Administrative offices directly related to a permitted use.
  - Full service restaurants.
  - 3. Business Support Services- office supply, photocopy, and delivery services.
  - 4. Trade or business schools.
- D. Outdoor sales and displays when the products and services are customary, accessory, and incidental to those sold and displayed in a primary business being conducted in a permanent building on the property. No outdoor sales or display shall interfere with pedestrian access ways, fire lanes, required parking spaces, driveways, landscape areas, or traffic visibility at driveway entries and street intersections.

- E. Commercial aviation businesses such as aircraft repair, aircraft sales and service, and air charter services.
- F. Retail showrooms and design and furnishing centers.
- G. Commercial kennels, animal shelters, and veterinary hospitals with outdoor boarding or exercise facilities.

#### 2.4.3 Uses Subject to a Conditional Use Permit

- A. Single-user monopole wireless communication facilities.
- B. Wireless communication facilities-alternative design tower.

## 2.5 Uses Subject to Conditions within all Districts

- **2.5.1** Live entertainment facilities which include music by more than one musician, or dancing included as part of a Hospitality or Restaurant Use within Business Park.
  - A. The dance floor may not exceed one-eighth (1/8) of the total floor area.
  - B. No adult entertainment uses permitted.
  - C. The closing time of the dance floor shall be simultaneous with the closing of the bar or cocktail lounge.
- **2.5.2** Temporary office and construction trailers, subject to administrative review by the City of Glendale Planning Department.
- 2.5.3 Wireless Communication Facilities.
  - General Provisions to all wireless communication facilities.
    - The facility shall have an identification plaque no larger than twelve (12) inches by twelve (12) inches permanently affixed which clearly identifies the name, address, and emergency phone number of the provider.
    - The minimum setbacks for the zoning district shall apply to all towers, equipment shelters, and accessory buildings. The dimensions of the entire lot or parcel shall apply and not the dimensions of the leased area.
    - 3. Adequate screening from off-site views shall be required at the time of Design Review
    - 4. Any monopole, tower, or alternative tower structure which is not used for six (6) months shall be removed by the property owner. The removal shall occur within ninety (90) days of the end of such six (6) month period. If the alternative tower structure includes an

- extension or replacement of the original structure, the structure shall be returned to the original height and condition.
- All monopoles and alternative design towers shall obtain a Conditional Use Permit from the City of Glendale.
- Building mounted antennas.
  - 1. Antennas shall not extend above the height of the wall on which they are located or integrated.
  - 2. Antennas shall not project more than 12 inches from the existing building wall.
  - Equipment shelters may locate on the building roof if screened from view of surrounding properties.
- C. Rooftop mounted antennas.
  - 1. Antennas shall not extend above more than ten feet above the existing building height.
  - 2. Antenna array scale and visibility shall be minimized.
  - 3. Equipment shelters may locate on the building roof if screened from view of surrounding properties.
- D. Alternative tower structure, including mounted antennas which utilize existing light pole or electric utility pole.
  - 1. Maximum additional height permitted by extension of an existing pole or by replacement pole is 15 feet.
  - 2. Maximum increase in pole diameter from the existing pole by the replacement pole is 50 percent.
  - 3. Maximum width of the antenna array shall be four feet.
  - 4. The related equipment shelter must be located on property developed for non-residential use or in public right-of-way subject to approval of the City of Glendale Engineer or designee.

#### E. Monopoles.

- 1. Monopoles must be separated by a minimum distance of one-quarter (1/4) mile from any other monopole.
- 2. Monopoles must be setback from Glendale Avenue a minimum of 150 feet.
- Monopole towers and antennas shall not be illuminated or display warning lights unless required by the Federal Aviation Administration or other federal or state authority.

- 4. Any access road to a monopole site shall be paved.
- 5. One paved parking space shall be provided on site unless otherwise provided on adjacent property.
- Unless otherwise approved, single user monopoles shall not exceed a height of 65 feet and monopoles designed for co-location shall not exceed a height of 80 feet.
- 7. All monopoles over 65 feet in height shall be constructed to allow for collocation by other wireless providers.

## 2.6 Allowable Accessory Uses within all Districts

- Uses which are customary and incidental to the principal use of the property.
- Amateur radio tower.
- Satellite earth station.
- Fences and walls, including screened outside storage.

#### 2.7 Prohibited Uses within all Districts

- Billboards.
- Adult businesses.
- Tattoo parlors and piercing establishments.
- Check cashing or deferred presentment establishments.
- Pawn shops.
- Commercial parking lots or long term storage lots.
- Shelter-care facilities.
- Thrift stores.
- Lodges or fraternal organizations.
- Billiard halls.
- Private recreational clubs.
- Automotive maintenance or repair.
- Plant nurseries.
- Emergency medical care facility twenty-four (24) hour operations.
- Seasonal Sales.

- Churches.
- Nursing Homes.
- Any single retail use that is greater than seventy-five thousand (75,000) square feet of gross floor area.
- Appliance, furniture, and household equipment rentals.
- Bar or cocktail lounge, live entertainment, and barbershops and beauty salons not incidental with a hospitality use.
- Mortuaries.
- Residential.

## Section 3 Development Standards

The development standards for each of the land use categories establish the best balance between the needs of the specific industries and the compatibility with adjacent properties, City Zoning Ordinance, and Western Area Plan. **Table 2** provides the development standards for the PAD.

Table 2: PAD Development Standards

Development Standards	Business Park	Light Industrial
Minimum Net Lot Area	half acre	half acre
Maximum Lot Area, Width, and Depth	Not Applicable	Not Applicable
Minimum Building Setback		
Front Setback	25 feet	25 feet
Rear Setback	15 feet	15 feet
Side Setback	15 feet	15 feet
Street Side Setback	25 feet	25 feet
Maximum Structure Height	60 feet	60 feet
(1)(2)	5 stories	5 stories
Maximum Floor Area Ratio (FAR)	0.5	0.5
Minimum Distance Between	Per City of Glendale	Per City of Glendale
Structures	Building and Fire Codes	Building and Fire Codes
Minimum Open Space/ On- Site Landscaping (3)	20%	10%(4)
Minimum Landscape Setback	25' along Glendale	25' along Glendale
(5)	Avenue; 20' along	Avenue; 20' along
	Glen Harbor	Glen Harbor
	Boulevard; 10' along all other streets	Boulevard; 10' along all other streets

- (1) Maximum height is the vertical distance measured from the finished grade level to the highest level of the building exclusive of elevator /stair penthouses when not on the perimeter face of the building, mechanical screening devices, vegetation, mechanical equipment, and portions of the structure related to identification of hazards to aircraft.
- (2) As may be applicable by the Federal Aviation Administration (FAA) regulations, an FAA Determination of No Hazard related to the maximum height of a proposed structure shall be obtained prior to the City of Glendale issuing a building permit or construction of such structure. Nothing herein prohibits the developer from obtaining such FAA approval for all or part of the PAD. It is also understood that the FAA will not require approval for structures under a certain height.
- (3) As a percentage of total net area.

- (4) For all development within the Light Industrial category, landscaped areas shall be provided on the site in an amount equal to or greater than 10% of the ground floor area of all buildings, or 5% of the net site area, whichever is greater.
- (5) Landscape setbacks shall be measured from the property line that may only be broken by driveways, project monument signage, project entry features, screen walls and other utility or traffic improvements customarily located adjacent to a street. No parking shall be permitted within this area.

#### 4.1 Purpose

The various uses within the PAD will provide adequate parking to meet the needs of the employees and business patrons. Parking lot design will follow traditional City approaches for the office or commercial businesses geared to consumer needs, including minimizing excess unused parking areas and reducing the scale of parking areas through landscaping and by breaking these areas into smaller areas. However, for the other uses within the PAD, parking lot design will factor in the unique operational characteristics for these uses. This may include the need for larger parking and drive areas to accommodate the wide turning radius for semi-trucks and related equipment, the greater spacing of landscaping or lighting within and along the perimeter of these areas to maintain safe clearances and visibility, among others.

## 4.2 General Requirements

- 4.2.1 Each parking space shall be at least ten feet wide and 20 feet deep, except that parking spaces at an angle of 60 degrees or less may be nine feet wide. Of the parking spaces ten feet wide and 20 feet deep, two feet maximum may overhang onto on-site landscaped areas or on-site sidewalks if bumper curbs are provided. The sidewalk should be wide enough to maintain a minimum four foot clear walkway. In addition, compact parking spaces measuring no smaller than 8.5 feet wide by 18 feet may be allowable provided these spaces are located in the lowest use areas of the site, as along the perimeter, and make up no more than five percent of the required number of parking spaces.
- **4.2.2** Unless otherwise noted in this PAD, all parking areas shall comply with the City Engineering Design Guidelines.
- **4.2.3** All parking spaces and driveway areas serving such parking spaces shall be surfaced with concrete, asphalt, paving blocks, or other approved surface by the City Engineer.
- **4.2.4** Required parking shall be provided on-site or on contiguous lots.
- **4.2.5** No part of any vehicle may overhang into a public sidewalk or within five feet of a street curb where no sidewalk exists.
- **4.2.6** Landscaping and screening of parking lots shall be in accordance to this PAD.
- **4.2.7** Parking lots shall be designed in groupings no larger than 200 spaces, with groupings up to 350 spaces if approved by the City Planning Director, or designee. Larger lots shall be divided by buildings, plazas, landscape features or pedestrian amenities.

- 4.2.8 Convenience uses having a vehicle pick up window shall provide a drive-thru lane with a minimum storage for six vehicles at 20 feet per vehicle. A pharmacy related drive-thru lane shall provide a drive-thru lane with a minimum storage for three vehicles at 20 feet per vehicle. The drive-thru lane shall not encroach upon or block driveways parking spaces.
- **4.2.9** Parking reductions related to transit, shared parking, or other similar circumstances may be allowable based on a professional parking study prepared by a registered engineer and approved by the City Planning Director or designee.
- **4.2.10** Canopy or shade-type parking structures are allowable. These structures shall be finished with colors that match or complement the buildings on the site.

## 4.3 Parking Requirements by Use

- 4.3.1 Manufacturing, assembly wholesale, warehouse uses shall require a minimum of one parking space per 600 square feet. Any associated office or retail for these uses shall require a minimum of one parking space per 250 square feet.
- **4.3.2** Hospitality uses shall require a minimum of one parking space per room, with associated uses as restaurant and meeting rooms at a minimum of one parking space per 200 square feet.
- **4.3.3** All other uses a minimum of one parking space per 250 square feet.

## 5.1 Purpose

Outdoor lighting within the PAD is to incorporate lighting where it is essential for circulation and safety as in providing higher light structures for drives and lower structures near parking spaces and pedestrian areas, with thoughtful placement to maximize visual interest for more aesthetic purposes as in accenting architectural features and landscape.

#### 5.2 Requirements

- **5.2.1** Parking lot light fixtures shall not exceed a height of 25 feet, including the pole and base.
- **5.2.2** Outdoor lighting fixtures shall be fully shielded, except for the following:
  - A. Fluorescent type lamp fixtures used to illuminate outdoor advertising signs mounted at the top of the sign structure may be partially shielded.
  - B. Low pressure sodium fixtures.
  - C. Incandescent fixtures of 150 watts or less, or other lamp sources 70 watts or less, excluding tungsten halogen lamps.
- 5.2.3 Lighting shall be directed downward to minimize glare onto adjoining properties, public streets, or potential interference with aircraft operation in the area, except indirect lighting used to illuminate landscaping, buildings and architectural features provided such lighting is properly shielded or of a low wattage.
- **5.2.4** Design of the outdoor lighting fixtures shall complement the architecture of the building.
- **5.2.5** Unless otherwise noted in this PAD, all lighting shall meet the City of Glendale Outdoor Light Control Ordinance.

## Section 6 Screening, Walls and Fences

## 6.1 Purpose

The intent is to encourage visual openness without the use of walls or fences. However, based on the predominantly heavy commercial and industrial nature of the PAD, walls and fences will be necessary for safety, security and screening.

## 6.2 Requirements

- **6.2.1** Any wall or fence exceeding six feet in height requires approval of fence construction plans with the City to ensure structural stability.
- **6.2.2** Screening shall be established from primary lines of site (i.e. freeways, streets, primary entry drives and common amenity areas).
- **6.2.3** Unless designed as part of any designated outdoor storage or loading/unloading areas or service bays, perimeter walls are allowable to a height of six feet or less.
- 6.2.4 Mechanical and Related Equipment
  - A. All mechanical structures and appurtenances shall be screened from view by an earth berm, wall, landscaping, or any combination thereof.
  - B. Screening shall be provided for all exterior components of plumbing, processing, heat, cooling and ventilation systems preventing lines of site from adjacent buildings.
  - Roof mounted units shall be screened.

#### 6.2.5 Refuse Collection

- D. All refuse enclosures shall comply with the standard detail of this PAD (see **Exhibit H**) and be a minimum of six feet in height.
- E. All refuse from any site shall be accumulated in an approved container provided by the City of Glendale or a licensed refuse company.
- F. Refuse collection areas shall be located on the site where it is least visible to the public.
- G. No refuse collection area shall be permitted between the street and respective setback line.
- H. Enclosures shall meet the requirements of the City of Glendale.
- I. All waste and refuse shall be frequently and regularly removed from the site and refuse collection areas properly maintained in a neat and clean manner.

#### **6.2.6** Outdoor Storage

- J. All outdoor storage areas for materials, equipment, and related items shall be screened by a wall, landscaping, berms, or any combination thereof to a minimum height of eight feet.
- K. Outdoor storage areas shall be located on the site where it is least visible to the public.
- L. All outdoor enclosures shall be made of durable materials that are complimentary in finish and color to the adjacent main building.
- M. No outdoor storage area shall be permitted between the street and respective setback line.
- N. All material within the storage area shall not extend above the height of the screen wall.

#### 6.2.7 Parking Area

- O. All on-site parking areas along a street frontage shall be screened from view by a wall, landscaping, berms, or any combination thereof to a minimum height of four feet.
- P. Intermittent landscaping shall be a permissible substitute for walls and berms described herein, so long as the parking lot frontage for which landscaping is used does not exceed 25 percent of the total parking lot frontage.

#### **6.2.8** Loading/unloading areas or service bays (the "Loading Areas")

- All Loading Areas shall be screened by a wall, landscaping, berms, or any combination thereof to a minimum height of eight feet.
- Loading Areas shall be designed as an integral part of the structure.
- No loading or unloading shall occur on the street or in parking areas.
- Loading Areas shall be located on the least visible area of the structure.
- Q. Rear Loading Areas is preferred.
- R. Adequate space shall be provided for maneuvering so that trucks will only drive forward when entering or leaving the site.

#### 6.3 Guidelines

- **6.3.1** Walls and fences should complement the finish and color of the primary building.
- **6.3.2** Enhanced design and construction is encouraged to complement the primary building. The design and construction may achieve this by matching the color and materials of the primary building.
- **6.3.3** Break up the lineal expanse of walls and fences and create variations along streets, which may be achieved by a variety of means, such as but not limited to staggered centerlines, pilasters, varying heights, extra plant materials, alternating materials, patterns, breaks, or other suitable means.

# Section 7 Signs

## 7.1 Purpose

Signage within the PAD will be appropriately scaled, well-designed, and integrated into the surrounding buildings, streetscape and landscape of the development.

## 7.2 Requirements

**4.3.4** Signage will comply with the City of Glendale Sign Code, with a Master Sign Plan submitted at the time of design review.

## 8.1 Purpose

This PAD intends to create an attractive, quality appearance through a variety of design elements such as building forms, colors, architectural treatments and landscaping. Emphasis will be on building and site design that creates a balance between the necessary function and operation of the particular business and its various design elements to assure the PAD attracts employment generating uses as envisioned in the City Western Area Plan. These guidelines will allow for quality materials and construction and architecture and site design that will appropriately transition with the bordering uses outside the PAD to enhance the visual interest and experience at the site. Representative images have been provided (see **Exhibit I**) with the intent to communicate a general level of quality and design vocabulary. These images are for illustrative purposes only, and do not represent any specific building or buildings with the PAD.

## 8.2 Site Design Guidelines

- 8.2.1 Development of each lot and phase within the PAD will ensure adequate vehicular movement along with building layout, entrances, parking, open space, and retention compatible with adjacent development.
- 8.2.2 Minimize access points to arterial streets in accordance with the City Engineering Design Guidelines. This includes limiting curb cuts and access onto Glendale Avenue to three, including 115<sup>th</sup> Avenue, the proposed north/south collector within the PAD between 115<sup>th</sup> Avenue and Glen Harbor Boulevard, and Glen Harbor Boulevard.
- 8.2.3 Locate parking areas and driveways behind the required street setback line, except where necessary to access the site, thereby creating a more attractive street appearance by providing a view of landscaping and buildings, and minimizing the view of cars and parking areas.
- **8.2.4** Create a view of more substantial, permanent structures at intersections rather than of accessory structures, canopies, cars, and parking areas.
- **8.2.5** Where practical, place ground-mounted mechanical equipment, utility boxes, signal boxes, double check valves and other similar items in areas that minimize public visibility.

#### 8.3 Architectural Guidelines

**8.3.1** Each building will use high-quality and durable materials and will include discernible articulation on all sides to provide design continuity. This may include, and is not limited to, the use of

- differing materials, architectural detailing or similar architectural treatments, and accent features.
- **8.3.2** Design freestanding buildings and accessory structures to conform to or complement the main buildings in color, materials, architecture, and building scale.
- **8.3.3** Create visual interest through articulation of wall planes, variation of roof forms and other similar methods such as angling buildings.
- **8.3.4** Finish building details, painting or anodizing of all exposed metal, and integration and screening of mechanical elements with the building architecture.

#### 8.4 Material and Color Guidelines

- **8.4.1** A palette of proposed materials and colors will be provided during the City Design Review process with each development plan application. Below is a list of guidelines to assist in designing structures within Copperwing at Glendale Airport, including allowable and prohibited building materials and colors.
- **8.4.2** Selected materials and colors should be durable and appropriate for their intended use.
- **8.4.3** Colors should relate well to one another, to the proposed building and landscaping materials, and should be appropriate to the architecture and the surroundings.
- **8.4.4** Exterior building elevations should include details such as the use of accent materials, e.g., ornamental metal, tile, brick or decorative masonry.
- **8.4.5** Use quality materials in freestanding signs to match buildings. Use individual letters for wall signs.
- 8.4.6 Allowable Building Materials
  - ACM (Architectural Composite Metal) Panels
  - Architectural steel
  - Aluminum
  - Brick
  - Cast in place, tilt-up or pre-cast concrete
  - Ceramic tile
  - Concrete masonry units with architectural features, such as split face block
  - Corrugated metal
  - Fabric and other non-reflective material
  - Granite, marble or other natural stone

- Non-reflective glass
- Other similar materials approved by the City Planning Director or designee.

## 8.4.7 Prohibited Building Material and Colors

- Highly-reflective materials or glare inducing colors.
- Large expanses of reflective glass
- Wood, except for limited use as in architectural accents.
- Pre-engineered metal-sided buildings, except for aircraft hangars.

## 9.1 Purpose

The intent of the landscaping is to unify the development through native vegetation, articulating site entrances, creation of shaded employee outdoor areas where feasible, screening service areas or structures, and providing visual interest. Landscaping along the streetscape will be emphasized along Glendale Avenue and Glen Harbor Boulevard. Landscaping along interior street frontages will be designed to minimize interference with commercial and industrial traffic. Attached is the Conceptual Landscape Plan (see Exhibit J).

## 9.2 Requirements

- **9.2.1** Unless otherwise noted in this PAD, all landscaping and buffering shall comply with the West Glendale Avenue Design Plan and City of Glendale Landscape Ordinance.
- **9.2.2** Landscape setbacks and open space shall comply with the requirements in Table 2 of this PAD.
- **9.2.3** Minimum quantity of trees, shrubs, and groundcover on development sites.
  - Landscaping within street frontages shall include trees, shrubs, and vegetative groundcover in an amount equal to or greater than one tree and three shrubs for each 30 feet of street frontage, and vegetative groundcover occupying a minimum of 60 percent of the total street frontage landscaped area. Unless otherwise permitted by the City Planning Director or designee, these minimum required numbers of plants shall be within the right-of-way and landscaped setback pursuant to Table 2 of this PAD.
  - On-site areas for all applicable development projects shall contain at least one landscape planter, not less than 200 square feet in area with a minimum width of five feet measured from back of curb, for every 12 parking spaces provided on site.
  - The area of the above requirements may be used to satisfy the minimum open space requirements in Table 2 of this PAD.

#### 9.3 Guidelines

- **9.3.1** Where outdoor seating areas occur, provide with shade, trash receptacles and other features to encourage pedestrian use. Orient for winter sun and include seasonal color in plantings.
- **9.3.2** Provide for water conservation in landscape design. Locate any consumption vegetation and water features in pedestrian areas.

- **9.3.3** Select plant materials that are suited for the proposed use and compatible with proposed architecture in color, texture, scale and environmental requirements.
- **9.3.4** Within the Business Park category, provide planters with canopy trees between parking aisles for shade and visual relief of asphalt areas.
- **9.3.5** Use special paving materials for pedestrian areas and crossings. Coordinate paving materials with building materials.
- **9.3.6** Design retention areas to meet technical requirements while still providing attractive landscaped areas with a natural appearance.
- 9.3.7 Provide special accent planting around freestanding signs.
- **9.3.8** Provide a landscape design which will maintain site visibility adjacent to driveways and intersections.
- 9.3.9 Select streetscape plants that are native or adaptive species with year-round interest and minimal required maintenance. This PAD provides a list of species with a variety of forms, textures, and colors in order to have a broad and diverse palette (see Exhibit K).

#### Section 10 Circulation

#### 10.1 Purpose

A key element of this PAD is providing an efficient circulation system to move traffic to and through the business park while establishing a high quality image and identity for the business park as a major center of commerce and employment.

#### 10.2 Vehicular

The existing circulation to the Long Property is from Glendale Avenue, with access to the site from 115<sup>th</sup> Avenue. Glen Harbor Boulevard runs along the east side of the Long property, with no current driveway access directly to the site.

Glendale Avenue is currently designed with two travel lanes in each direction and a center turning lane west of Loop 101. It is the only west-east access to the property. It provides access from Loop 101 located approximately 1.5 miles to the east, with continued access further east to the east side of the City. It provides access west of the site for approximately three miles where at this point Glendale Avenue terminates at Litchfield Road due to Luke Air Force Base and picks up again continuing west to the Loop 303. Litchfield Road is a north-south road serving connection to Interstate 10 to the south and U.S. Highway 89/60 to the north, with traffic expected to take the shorter route to Interstate 10 via Loop 101. Glendale Avenue between Loop 101 and Litchfield Road is within City limits and designated as a Major Arterial. The City Arterial Street Section Map denotes Glendale Avenue between 67<sup>th</sup> Avenue and 115<sup>th</sup> Avenue for three lanes in each direction with a median (see Exhibit L). A Major Arterial in the City has an ultimate right-of-way width of 130 feet and 140 feet at the street intersection. The current half width of right-of-way adjoining the Long property is approximately 55 feet.

115<sup>th</sup> Avenue is currently designed with a travel lane in each direction at a total pavement width varying about 24 feet. 115<sup>th</sup> Avenue provides north-south access to the site. However, this roadway primarily serves the local needs of area. 115<sup>th</sup> Avenue provides direct access to the City landfill. It provides access to the Gravel Resources sand and gravel operation west of the PAD where the road terminates at the entrance to this facility. Constraints exist to extend 115<sup>th</sup> Avenue from Glendale Avenue south to Camelback Road due to the Agua Fria River and north to Northern Avenue due to the City landfill. 115<sup>th</sup> Avenue north of Glendale Avenue is within the City, while the roadway south adjoining the Long property is within unincorporated Maricopa County. The existing right-of-way width west and east of the centerline is 40 feet for an approximate distance of 1,265 feet south of Glendale Avenue. The width of the right-of-way south of this point for a distance of approximately 3,960 feet to the south property line of the Long property is 33 feet on each side of the centerline. There is a strip of land seven feet in width owned by the Long family located outside City limits east of the right-of-way. This seven-foot wide strip of land was created in 1983 when the City annexed

the Long family property and excluded the land 40 feet in width east of the centerline of 115<sup>th</sup> Avenue. The existing pavement is predominately located west of the centerline.

Glen Harbor Boulevard is currently designed with two travel lanes in each direction with median/turn lanes both south and north of Glendale Avenue. This road terminates at the WAWRF and Airport south of Glendale Avenue and lies within the Airport property, a City-owned parcel. The road meanders through the Glendale Business Park north of Glendale Avenue where it terminates at Northern Avenue. Northern Avenue continues to Loop 101 to the east and other regional connections to the west. These regional connections include Interstate 10 and the future Loop 303. The Western Area Plan designates Glen Harbor Boulevard north of Glendale Avenue as an Arterial. The Western Area Plan indicates a proposed collector connection through the Long property to be determined in conjunction with future development. This collector will provide secondary access to the Airport. Currently, Glen Harbor Boulevard is the only access. This access will benefit the City by relieving congestion at the Glen Harbor Boulevard and Glendale Avenue intersection and provide an alternate means of emergency access into the Airport and WAWRF.

Future circulation improvements will include fee title dedication of ten feet of right-of-way along Glendale Avenue to comply with the City's Major Arterial standard for a 65-foot half-width of right-of-way. As demonstrated by appropriate traffic studies and the City of Glendale's West Avenue Design Plan, additional lane, traffic signal and other off-site improvements may occur adjoining the Long property along Glendale Avenue, Glen Harbor Boulevard, and 115<sup>th</sup> Avenue. The dedications, specifications and standards of these right-of-way improvements will be in accordance with the future traffic study. In compliance to the Western Area Major Street System Plan, a new street will provide access from Glen Harbor Boulevard from the Airport to Glendale Avenue through the Long property. A Conceptual Circulation Plan is provided with this PAD (see Exhibit M). All streets shown on the Conceptual Circulation Plan are proposed public streets, excluding the private drive for emergency and maintenance purposes connecting the internal street system of the PAD with the southern portion of Glen Harbor Boulevard. Additional local streets and drives other than those illustrated on the Conceptual Circulation Plan may occur at such time individual parcels develop. At the developer's discretion, these streets and drives will be either public or private. All streets and drives will comply with appropriate City standards or outcome of the approved traffic study. Access will meet City of Glendale Fire Department standards.

#### 10.3 Pedestrian

No pedestrian sidewalks currently exist along Glendale Avenue or Glen Harbor Boulevard adjacent to the Long property. Provision for sidewalk right-of-way along Glendale Avenue is included with the fee title dedication in Phase One of this PAD for a total right-of-way width from the Section line of 65 feet. Pedestrian improvements along Glendale Avenue or Glen Harbor Boulevard are unwarranted until the need arises. For example, the new Public Safety Training Facility northwest of the PAD constructed applicable internal sidewalks and no perimeter sidewalks along Glendale Avenue. Even when sidewalks may be warranted, the pedestrian connections between the PAD and

nearby uses as the Airport or future transit connection may not merit complete perimeter sidewalk and related improvements based on the type and location of uses in the area. Many of the existing and planned uses near the PAD are heavy industrial in nature or generate no off-site pedestrian activity. These uses have a long time horizon. The City landfill and sand and gravel operation adjoining the PAD to the west are two such examples. The Master Facility Plan approved by the Arizona Department of Environmental Quality for the City Landfill indicates an estimated life span to 2046 or beyond for operation of the landfill. The timing and specifications of any sidewalk and related off-site improvements will be based upon the outcome of the traffic study and West Glendale Avenue Design Plan.

#### 10.4 Transit

Glendale Avenue west to Luke Air Force Base currently provides bus service. Future plans may include light rail service to the adjoining City Airport. Any bus shelter opportunities adjoining Glendale Avenue will be based upon the outcome of the future traffic study and West Glendale Avenue Design Plan. No provisions for improved bus shelter or pedestrian sidewalks are envisioned as part of this PAD during the initial and first phase of development.

## Section 11 Dry Utilities and Services

#### 11.1 Electric, Gas, Phone, Cable

Utilities services will include:

- Electrical service by APS, and
- · Phone service by Qwest,

Utilities services may include:

- · Natural gas service by Southwest Gas, and
- Cable television by Cox Communications

Above ground high voltage electric transmission lines at approximately 120 feet in height and an underground gas line cross the Long property (see **Exhibit N**). These utilities cross the Long property at Glendale Avenue approximately 1,200 feet west of Glen Harbor Boulevard. These transmission lines travel directly south to the Airport property where the lines travel southwesterly generally along the east property line of the Long site. Various electric utility easements occur along the above-described transmission line corridor. The total easement width is 460 feet. An underground natural gas line lies within the northern portion of the Long property within this 460-foot electric utility easement. However, the gas line travels directly south from Glendale Avenue through the Airport. Dry utility and services will be determined at the time of development.

## 11.2 School and Library

As the PAD will include no residential, there is no need to address school and library facilities.

## 11.3 Public Safety – Fire and Police

The nearest existing fire and police station is the Gateway Public Safety Facility located at 6261 N. 83<sup>rd</sup> Avenue near Maryland Avenue. Additionally, the City recently opened the Public Safety Training Facility at 11550 West Glendale Avenue a few feet northwest of the PAD which provides a public safety presence in the area. Also, this Facility and the amount of City-owned property along Glendale Avenue provides future opportunity for a station or sub-station should a need arise. The PAD provides for no public safety station or substation facilities as the Gateway Public Safety Facility is projected to handle the capacity needs for the area including the PAD.

## Section 12 Grading and Drainage

The existing topography of the Long property is relatively flat with a slight southwesterly slope from the intersection of Glen Harbor Boulevard and Glendale Avenue toward the Agua Fria River (see **Exhibit O**). The elevation on the site ranges from 1060 feet to 1035 feet.

The site consists of undeveloped desert with scattered grass, shrubs and trees. Several dirt trails and some shallow drainage ways cross the site. The northwest portion of the site contains asphalt paved roadways, concrete slabs/foundations and utility stubs from a former use as a mobile home park as shown by the current aerial (see **Exhibit P**). The Long property is outside the 100-year floodplain (See **Exhibit Q**). Storm water occurs in a sheet flow pattern toward the confluence of the New and Agua Fria Rivers where it flows south to the Gila River. Storm water absorbed into the soil travels to the groundwater table located at an approximate depth of 100 feet below ground. A preliminary geotechnical investigation has been done on the property, the most recent in March 2008 prepared by Speedie and Associates (see **Exhibit R**).

The Site will be graded to provide storm water storage for the run off produced by the 100-year, 2 hour rainfall event or the first flush "first half inch" where applicable for the developed portions of the site. These storm water basins and drainage conveyance systems will be integrated into the development of open spaces, both active and passive, and the roadways of the development as described in the attached Conceptual Master Drainage Plan (see **Exhibit S**). Additional details of the grading and drainage will occur with the platting of the PAD and individual development of the lots. Future consideration may allow a drainage easement through the WAWRF property south of the PAD provided such an easement will not conflict with future sewer plant expansion projects.

## Section 13 Subsidence, Fissures, and Seismic Activity

Groundwater depletion, due to groundwater pumping, has caused land subsidence and earth fissures in numerous alluvial basins in southern Arizona. The Speedie and Associates report found no evidence of subsidence or fissures on the Long property. The closest documented earth fissure to the site is approximately two miles west of the site near Luke Air Force Base.

The property lies within the Sonoran zone for seismic activity, a zone characterized by sparse seismicity and few faults. No faults were found on or adjacent to the property according to the Speedie and Associates report.

No additional structural improvements will be required based on the low presence of subsidence, fissures, and seismic activity in the area.

The water system design criterion for the PAD will be based on the City of Glendale Design Guidelines for Site Development and Infrastructure Construction and the ADEQ Engineering Bulletin No. 10. All public water line materials shall be per City of Glendale requirements and installed at a depth of 36-inches or greater. Onsite fire hydrants will have a maximum spacing of 300-feet with at least one hydrant per 100,000 square feet of coverage. The valves will have a maximum spacing of 300-feet. The site is located in one pressure zone with the water distribution and 100-year water supply provided by the City of Glendale. There is an existing 12-inch diameter water main in Glendale Avenue, along the north boundary. There is also an existing 12-inch diameter water main in Glen Harbor Boulevard, along the east boundary. Please refer to the attached Conceptual Master Water & Wastewater Plan for additional information (see Exhibit T)

## Section 11 Wastewater System

The wastewater system design criterion for the PAD will be based on the City of Glendale Design Guidelines for Site Development and Infrastructure Construction and the ADEQ Engineering Bulletin No. 11. On-site sewer lines will be PVC SDR 35, installed typically at a depth of 5-feet or greater. Manholes shall have a maximum spacing of 400 feet for 8-inch or 10-inch sewers and 500 feet for 12-inch to 21 inch sewers. There is an existing 12-inch sanitary sewer line in Glen Harbor Boulevard that serves the Glendale Airport and properties to the north. A lift station may be necessary to serve the capacity needs of the businesses within the PAD. Please refer to the attached Conceptual Water & Wastewater Master Plan for additional information (see Exhibit T)

## Section 12 Schedule for Development - Phasing

Development of the PAD will occur in multiple phases (see **Exhibit U**). The initial phase is the requested sand and gravel operation under a concurrent application to the PAD which will occur roughly in the location of Phase Four. This initial phase will provide a "pay for itself" financing mechanism enabling the Long family to start the early phases of construction. It is for a Special Use Overlay District for the southern 99.3 acres of the total 316.8 acres of the Long property. The duration of the sand and gravel operation is a maximum of ten years. Appropriate emergency all-weather access load roads will be constructed as part of the initial phase pursuant to City of Glendale Fire Department standards. The Long family will seek incremental expansion of this PAD as this SUD acreage is reclaimed. Actual timing of the phases will depend on market conditions and absorption. **Table 4** shows the anticipated phasing schedule.

Table 3: PAD Phasing Schedule

Phase	Anticipated Start of	Anticipated Build-Out
	Construction Date	Date
Initial- Sand & Gravel	2009	2019
One	2009	2015
Two	2012	2015
Three	2015	2020
Four	2020	2025

Appropriate on-site improvements will be constructed at the time each lot is developed with a specific user. Phasing of off-site half-street improvements adjacent to the site will be determined at the time of development and as stipulated for this PAD as this is a market-driven project. Timing and design of such improvements will come later in the development process which may include an updated traffic study, master water and wastewater plans, platting, and other related documents. However, certain general statements about the phasing of particular off-site improvements are possible at this zoning stage as indicated in **Table 4**.

Table 4: Off-Site Phasing Schedule

Improvement	Anticipated Phase
Dedication of additional right-of-way and improvements along	One
Glendale Avenue	
Dedication of additional right-of-way along 115 <sup>th</sup> Avenue	One
Dedication of additional right-of-way and improvements along	Two and Four
Glen Harbor Boulevard	
Right-of-way improvements for 115 <sup>th</sup> Avenue	Three and Four

## **Section 13 Development Master Plan Process**

The initial Master Development Plan with this PAD establishes the overall vision for this PAD. As specific businesses and uses are not known at this time, an additional administrative review process will be added to any review procedures established by Code, Covenants and Restrictions for the PAD established by the Long family and the normal City of Glendale review process (the "Design Review") outlined in Section 3.600, Design Review, of the City Zoning Ordinance (See **Exhibit V**). This additional administrative review process will ensure that the final land use mix and site plan are consistent with the quality, character and intent of this PAD. The additional process will be comprised of the following requirements:

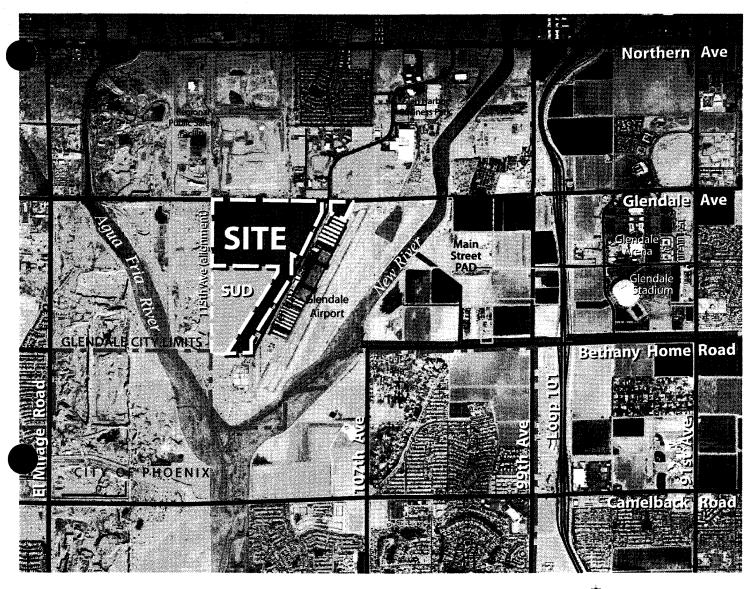
- Submittal of a separate Development Master Plan shall occur when a Design Review or Conditional Use Permit application is filed for a specific user, building or group of buildings. The applicant, without the filing of either a Design Review or Conditional Use Permit application, may file a Development Master Plan. If a Development Master Plan is filed without a Design Review or Conditional Use Permit application, the Plan shall be processed in the same manner as a Design Review application.
- 2. The area depicted within the Development Master Plan shall be limited to the site plan for the Design Review or Conditional Use Permit project, along with proposed land uses, representative building locations, circulation (vehicle, bicycle, pedestrian), open spaces, parking and landscaping of the parcels adjoining the subject project to the extent those parcels are undeveloped at the time the Design Review or Conditional Use Permit is filed.
- 3. The Development Master Plan shall illustrate how the specific land use that is the subject to the Design Review or Conditional Use Permit application can be successfully integrated with the planned land uses, circulation, open space and landscaping identified for the adjoining, undeveloped parcels.
- 4. At the time of application, the City Planning Director, or designee, has the authority to determine that the Development Master Plan can show less area of the adjoining undeveloped parcels provided this smaller area satisfies the intent of how the adjoining parcel(s) are integrated with the planned land uses, circulation, open space and landscaping identified for the adjoining, undeveloped parcels.
- 5. The Development Master Plan shall be approved simultaneously with the Design Review application or prior to the Conditional Use Permit going to public hearing.
- 6. A Development Master Plan may be amended as part of the review and approval of a Design Review application or Conditional Use Permit. A Development Master Plan may be amended, if requested by the property owner, or designee, without the filing of either a

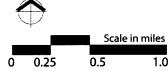
- Design Review or Conditional Use Permit application, and shall be processed in the same manner as a Design Review application.
- 7. The Development Master Plan requirement may be waived by the Planning Director, or designee, if sufficient portions of the PAD have been developed or have been approved through the Design Review or Conditional Use Permit process, thus establishing land uses and/or building patterns and negating the need for a Development Master Plan.

#### Section 14 PAD Amendments

Amendments to the PAD may be necessary from time to time to reflect changes in market conditions, development financing, specific requirements of a user, and other similar unknown circumstances. As changes or adjustments become necessary, such changes shall, unless otherwise required by applicable law, be effectuated as a minor change to the PAD through the administrative approval of the City's Planning Director, or designee, pursuant to the Development Master Plan Process described in this PAD which, after approval, shall be attached to the PAD as an addendum and become a part hereof. Minor changes shall not require notice or public hearings. Major changes shall be reviewed by the City Planning and Zoning Commission and approved by the City Council subject to City notice and hearing requirements.

A major change to the PAD includes substantial alterations to the list of permitted uses or circulation as set forth in this PAD. All other changes will be considered minor. Examples of minor changes may include a change in the types of uses provided it does not substantially increase intensity, a change in the boundaries of development phases, moving around the geographic location of any of the land use categories, and additions, deletions or modifications to the guidelines of the PAD provided these changes support the Vision/Objective of the PAD.





ASE # ZON08-14 & ZON08-15 11401 W. GLENDALE AVENUE



EXHIBIT A
Vicincity Map

John T. Long



## **Legal Description**

A parcel of land located within the Northwest, Northeast, Southeast and Southwest Quarters of Section 7, Township 2 North, Range 1 East, of the Gila and Salt River Meridian, Maricopa County, Arizona, more particularly described as follows:

Commencing at the Northwest Corner of said Section 7;

Thence S89°15'46"E, a distance of 2,583.32 feet, along the North line of the Northwest Quarter of said Section 7, to the North Quarter Corner thereof;

Thence S89°16'04"E, a distance of 1,151.29 feet, along the North line of the Northeast Quarter of said Section 7, to a point;

Thence leaving said North line, S00°43'56"W, a distance of 374.36 feet, to a point;

Thence S26°13'56"W, a distance of 1,755.60 feet, to a point;

Thence N63°46'04"W, a distance of 292.58 feet, to a point;

Thence S01°00'03"W, a distance of 743.76 feet, to a point:

Thence S31°51'48"W, a distance of 2,585.56 feet, to a point;

Thence S00°17'11"W, a distance of 421.28 feet, to a point on the South line of the Southwest Quarter of said Section 7:

Thence S87°39'23"W, a distance of 822.96 feet, along said South line, to a point;

Thence leaving said South line, N31°51'48"E, a distance of 3,280.14 feet, to a point;

Thence N01°00'04"E, a distance of 192.65 feet, to a point;

Thence N89°30'12"W, a distance of 2,210.60 feet, to a point on a line 33.00 feet easterly and parallel to the West Line of the Northwest Quarter of said Section 7 to a point;

Thence continuing along said line 33.00 feet easterly and parallel to the West Line of the Northwest Quarter of said Section 7, N00°30'02"E, a distance of 944.12 feet to a point on the South Line of the Northwest Quarter of the Northwest Quarter of said Section 7;

Thence continuing along the South Line of the Northwest Quarter of the Northwest Quarter of said Section 7, N89°07′23″E, a distance of 7.00 feet to a point on a line 40.00 feet easterly and parallel to the West Line of the Northwest Quarter of said Section 7:

Thence continuing along said line 40.00 feet easterly and parallel to the West Line of the Northwest Quarter of said Section 7, N00°30'02"E, a distance of 1219.96 feet to a point on the South Line of the North 100 feet of the Northwest Quarter of said Section 7;

Thence continuing along the South Line of the North 100 feet of the Northwest Quarter of said Section 7, N89°15'46"W, a distance of 40.00 feet to a point on the West Line of the Northwest Quarter of said Section 7;

Thence continuing along the said West Line; N00°30'02"E, a distance of 100.00 feet to the Northwest Corner of said Section 7 and the Point of Beginning;

#### Together with:

A parcel of land located within the Northeast Quarter of Section 7, Township 2 North, Range 1 East, of the Gila and Salt River Meridian, Maricopa County, Arizona, more particularly described as follows:

Commencing at the North Quarter Corner of Section 7; Thence S89°16'04"E, a distance of 1,451.29 feet, along the North Line of the Northeast Quarter of said Section 7, to Point of Beginning;

Thence continuing along said North line, S89°16'04"E, a distance of 760.23 feet, to a point;

Thence leaving said North line, S00°43'56"W, a distance of 33.00 feet, to a point;

Thence S26°13'56"W, a distance of 635.40 feet, to a point;

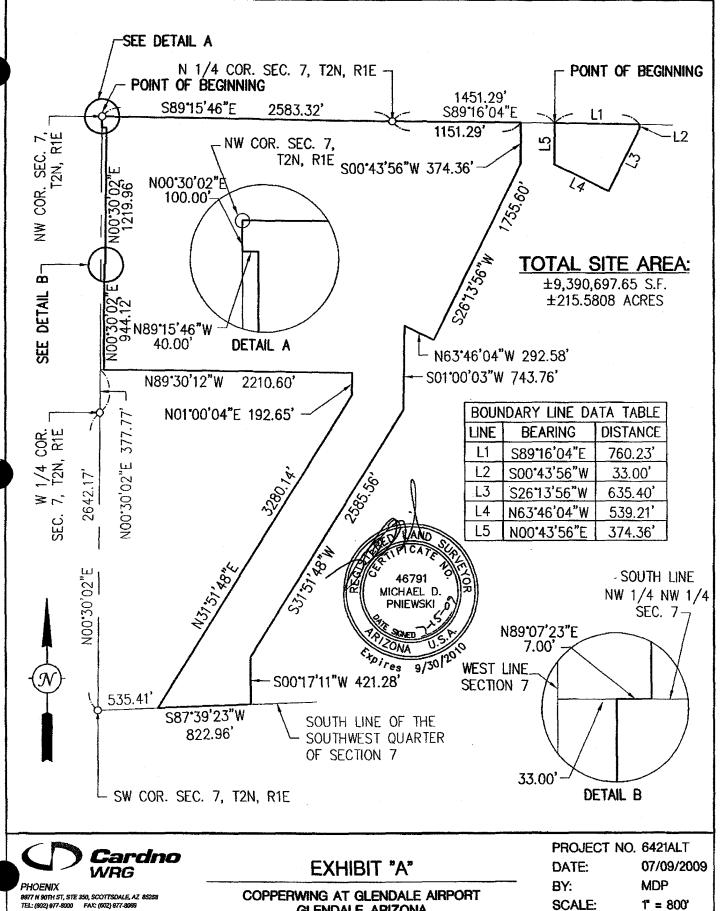
Thence N63°46'04"W, a distance of 539.21 feet, to a point;

Thence N00°43'56"E a distance of 374.36 feet, to a point on said North line and the Point of Beginning.

MICHAEL D.

Dires 9/30/20

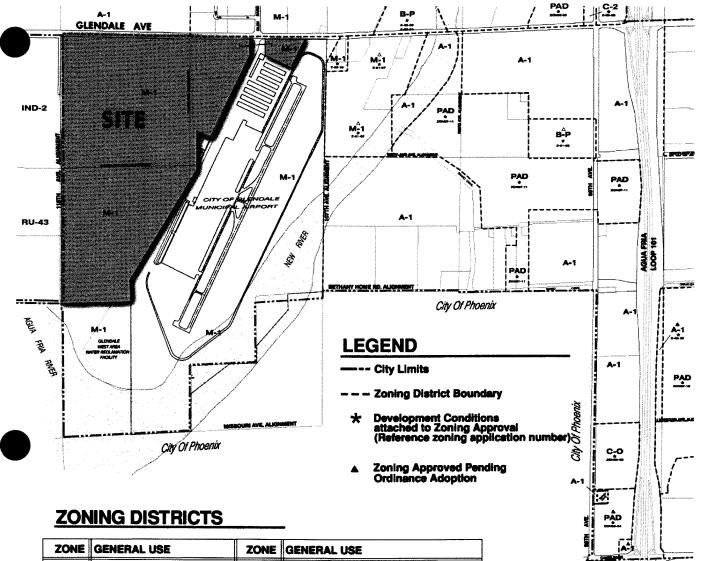
Total area of both parcels contains 9,390,698 square feet or 215.5808 acres, more or less.



GLENDALE, ARIZONA

SHEET NO. 1 OF 1

WWW.CBIOHOMYLCOM PLANNERS + ENGINEERS + LANDSCAPE ARCHITECTS + SURVEYORS



CONE GENERAL USE	ZONE	GENERAL USE
A-1 RR-90 RR-45 RR-45 RR-45 RR-47 RR-90 RR-45 RR-10 RR-47 RR-10 RR-18 RR-19 RR	R-O C-O G-O PR SC C-1 C-2 C-3 BP M-1 M-2 PAD PRD MH SU HP AIO	Residential Office Commercial Office General Office Pedestrain Retail Shopping Center Neighborhood Commercial General Commercial Heavy Commercial Business Park Light Industrial Heavy Industrial Planned Area Development

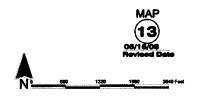


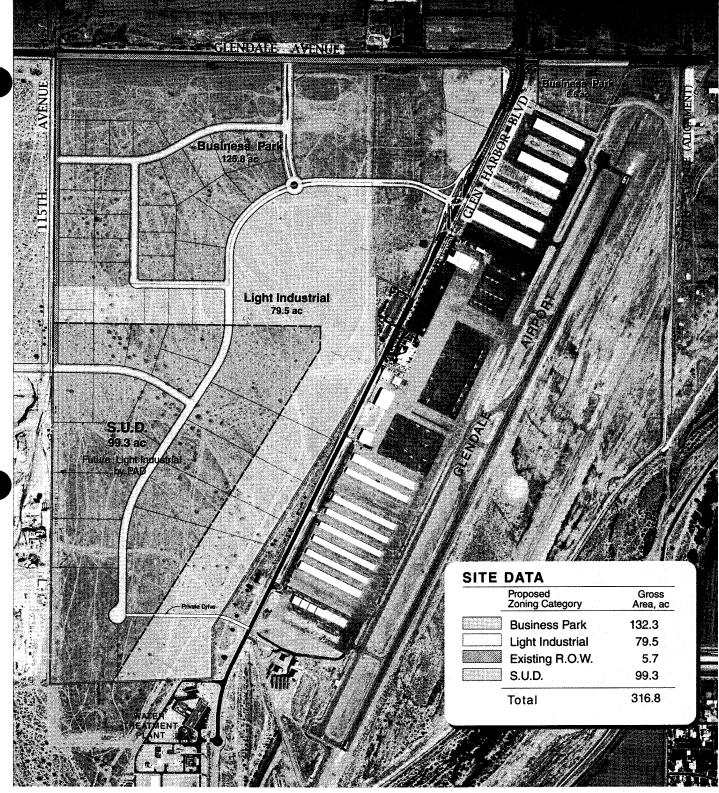


EXHIBIT B
Vicinity Map

CASE # ZON08-14 & ZON08-15 11401 W. GLENDALE AVENUE

John T Long





#### Notes:

- The alignment and location of the parcels and roadways is conceptual and subject to change.
- The S.U.D. is for mining and extraction with future PAD intent for Light Industrial.



EXHIBIT C

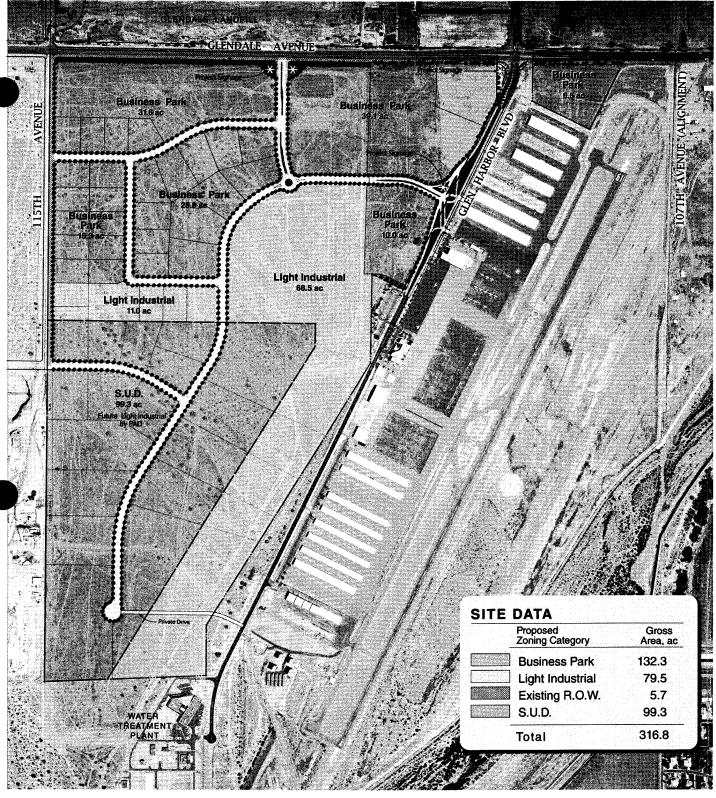
CASE # ZON08-14 & #ZON08-15 11401 W. GLENDALE AVENUE



THEALTERGROUP



P.A.D. Zoning Plan



#### Notes:

- The alignment and location of the parcels and roadways is conceptual and subject to change.
- The S.U.D. is for mining and extraction with future PAD intent for Light Industrial.



**EXHIBIT C** 

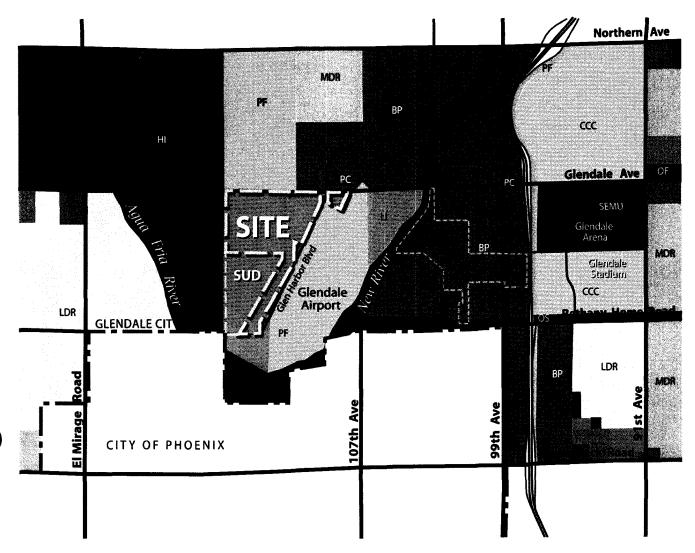
CASE # ZON08-14 & #ZON08-15 11401 W. GLENDALE AVENUE



P.A.D. Development Plan







#### LAND USE DESIGNATIONS

Corporate Commerce

Entertainment Mixed

Office

Business Park

Light Industrial

Heavy Industrial

Public Facility

Light Residential

Medium Residential

Medium-High Residential

High Density Residential

Planned Commercial

Parks and Open Space



Not to Scale

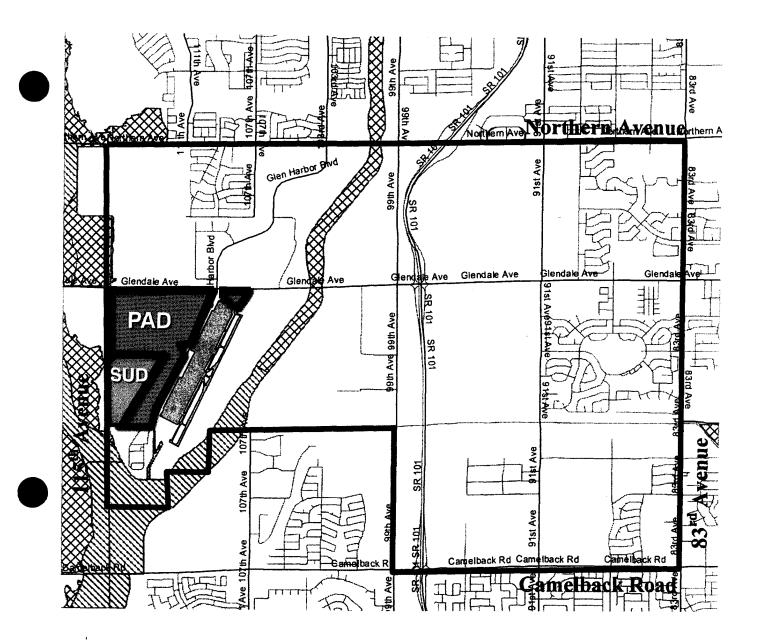


**EXHIBIT D** 

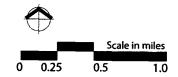
General Plan Designation Map







# Western Area Boundary Map



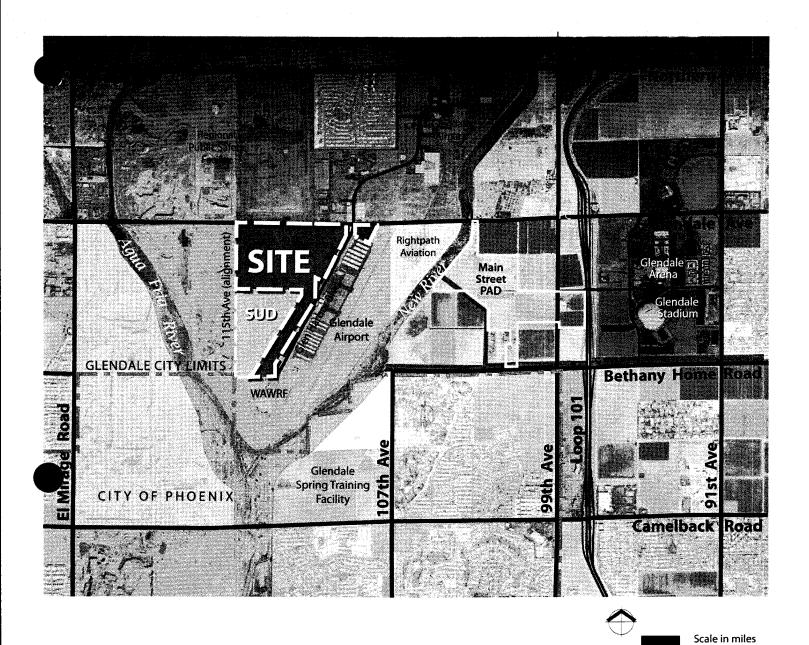
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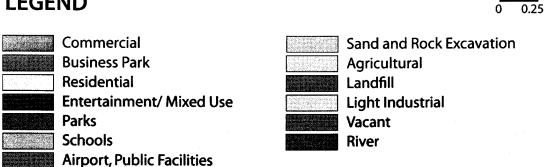
**EXHIBIT E** 

John F. Long





## **LEGEND**



**EXHIBIT F** 

1.0

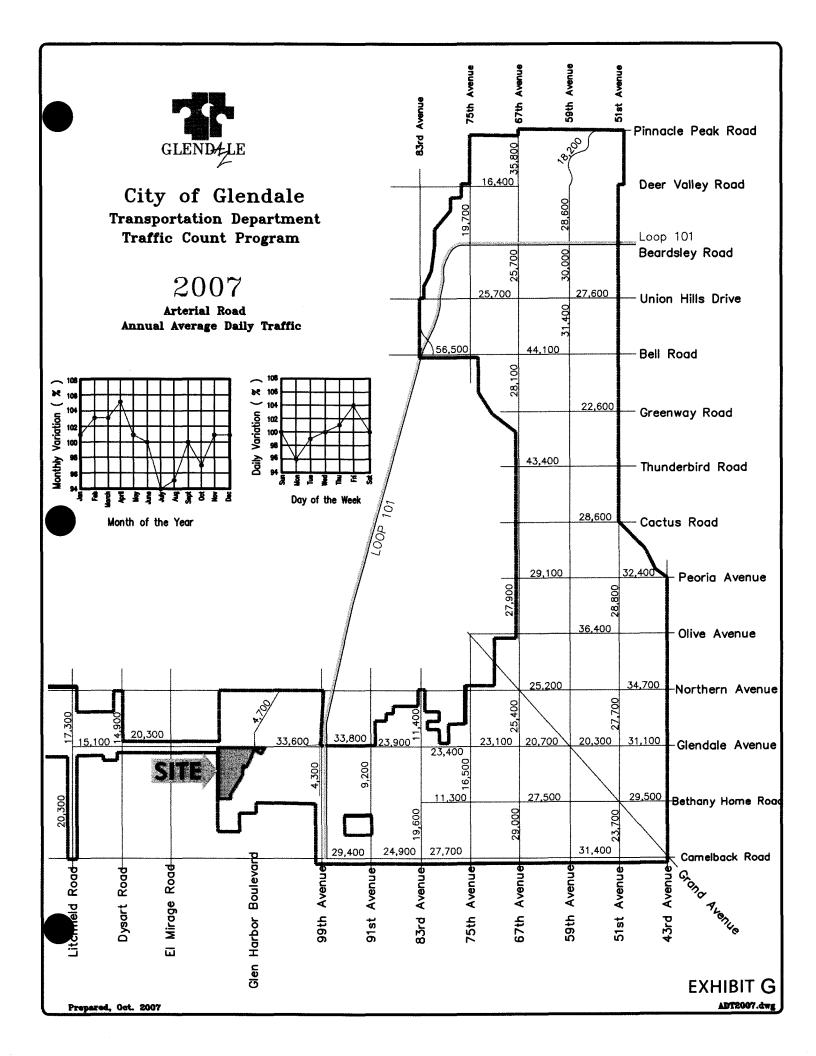
ASE # ZON08-14 & ZON08-15 11401 W. GLENDALE AVENUE COPPERWING

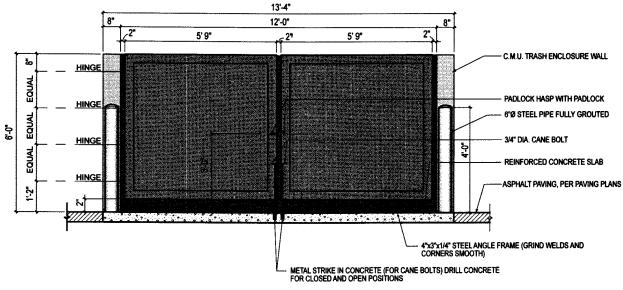
Surrounding Uses Map

John F. Long

THEALTERGROUP

H R G

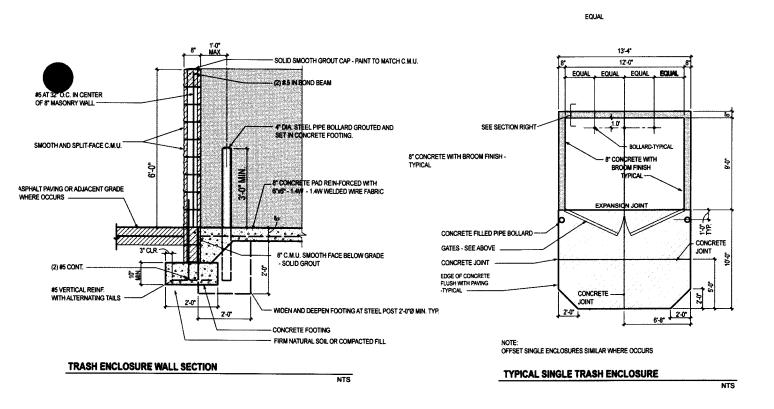




NOTE: TRASH ENCLOSURES MUST BE OF MASONRY CONSTRUCTION, MATCH BUILDING, AND CONTAIN SOLID GATES.

**ELEVATION - TRASH ENCLOSURE GATES** 

NTS





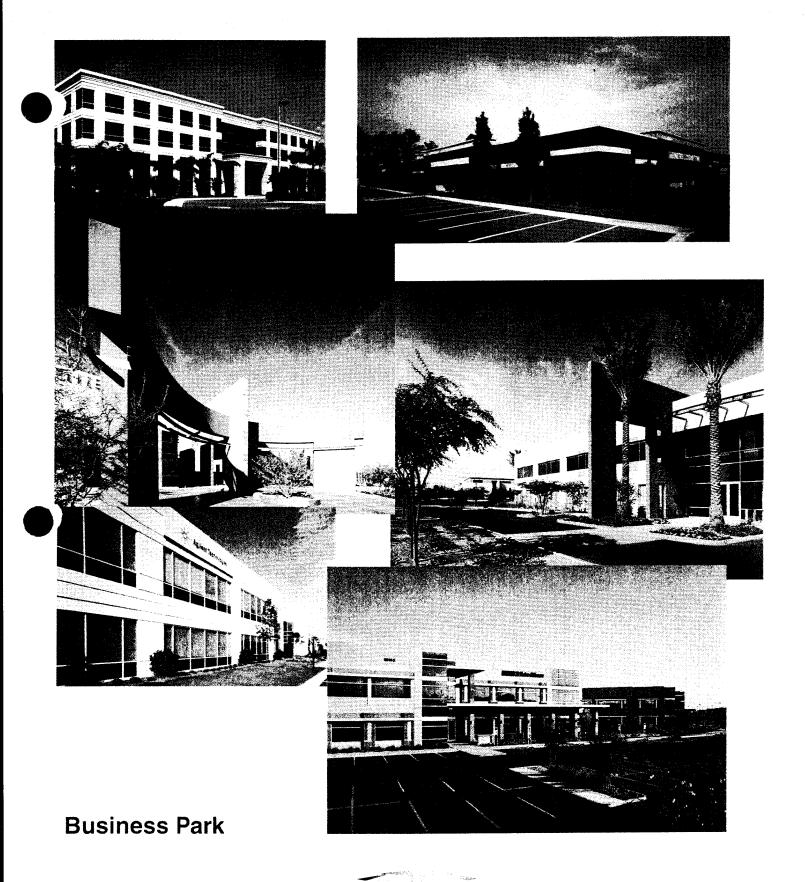
CASE # ZON08-14 & ZON08-15 11401 W. GLENDALE AVENUE



Refuse Enclosure Detail

John F. Long PROPERTIES



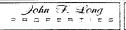


CASE # ZON08-14 &ZON08-15 11401 W. GLENDALE AVENUE



EXHIBIT I

Architectural Character







# **Industrial Park**

CASE # ZON08-14 & ZON08-15 11401 W. GLENDALE AVENUE

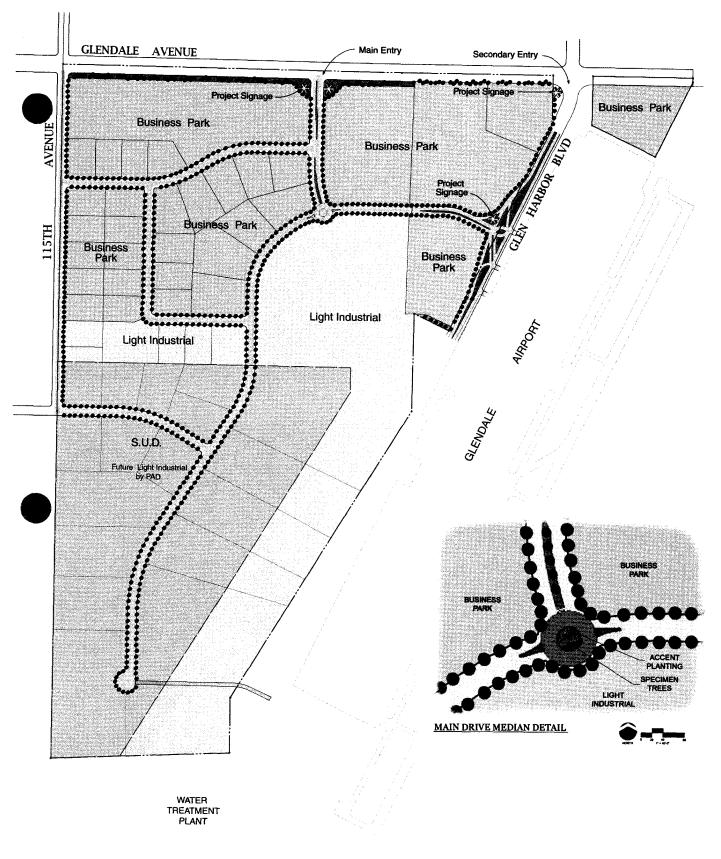


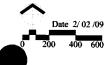
EXHIBIT I

Architectural Character









CASE # ZON08-14 &ZON08-15 11401 W. GLENDALE AVENUE



EXHIBIT J

Conceptual Landscaping Plan

John F. Long PROPERTIES





#### **Trees**

Cercidium floridum (Blue Palo Verde)
 Cercidium hybrid 'Desert Museum' (Desert Museum Hybrid Palo Verde)
 Cercidium microphyllum (Foothills Palo Verde)
 Cercidium praecox (Palo Brea)
 Dalbergia sissoo (Sissoo Tree)
 Olneya tesota (Ironwood)
 Prosopis hybrid 'Phoenix' (Phoenix Mesquite)
 Quercus virginiana (Live Oak)
 Ulmus parvifolia sempevirens (Chinese Evergreen Flm)

9. Ulmus parvifolia sempevirens (Chinese Evergreen Elm)

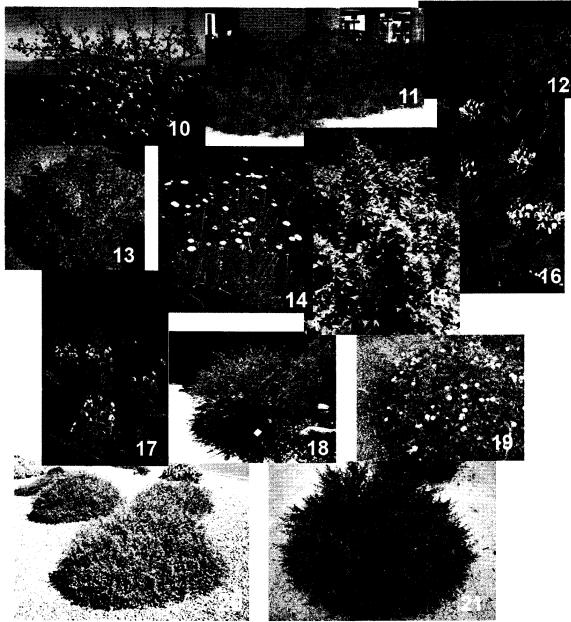


EXHIBIT K

Landscape Palette

John T. Long





#### **Shrubs and Groundcovers**

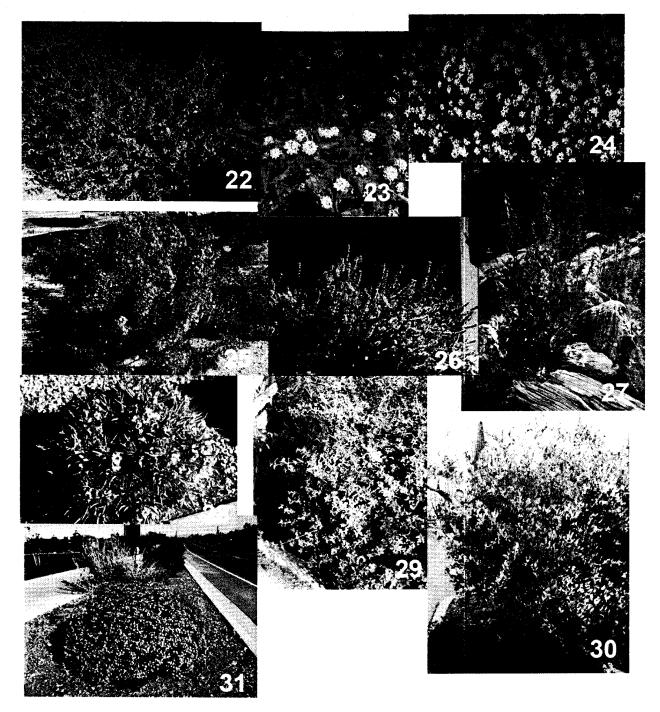
- 10. Acacia neovernicosa (Viscid Acacia)
  11. Acacia redolens (Desert Carpet)
  12. Acalypha monostachya (Red Fuzzies)
  13. Ambrosia deltoides (Bursage)
  14. Baileya multiradiata (Desert Marigold)
  15. Bougainevillea 'Torch Glow' (Torch Glow Bougainevillea)
  16. Caesalpinia gilliesii (Yellow Bird of Paradise)
  17. Caesalpinia pulcherrima (Red Bird of Paradise)
  18. Calliandra californica (Baja Fairy Duster)
  19. Convolvulus cneorum (Buch Morning Glory)
  20. Dalea frutescens 'Sierra Negra' (Black Dalea)
  21. Eremophila maculata 'Valentine' ( Valentine Emu Bush)

COPPERWING AT GLENDALE AIRPORT

**EXHIBIT** K

Landscape Palette





#### **Shrubs and Groundcovers**

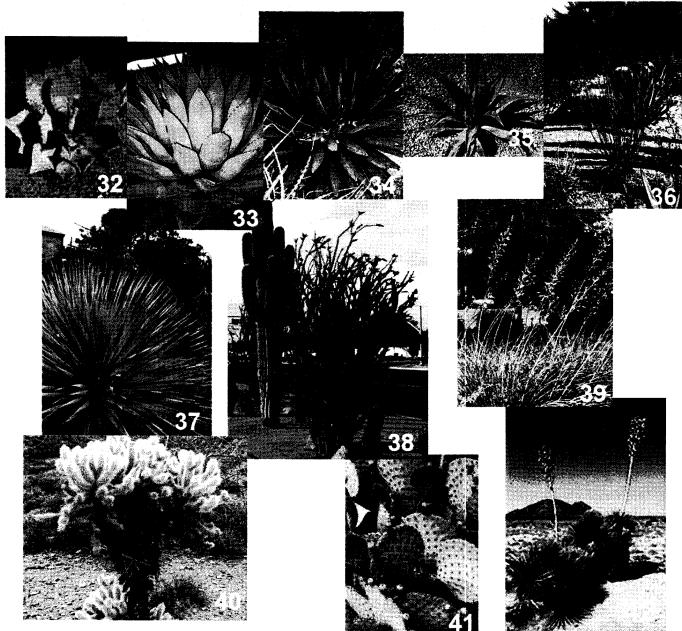
- 22. Justicia calfornica (Chuparosa)
  23. Lantana camara (Bush Lantana)
  24. Lantana montevidensis (Trailing Lantana)
  25. Larrea tridentata (Creosote Bush)
  26. Leucophyllum laevigatum (Chihuanhuan Sage)
  27. Penstemon eatonii (Firecracker Penstemon)
  28. Ruellia brittoniana 'Katie' (Kater Ruellia)
  29. Ruellia peninsularis (Baja Ruellia)
  30. Simmondsia chinensis (Jojaba)
  31. Trixis californica (Trixis)



EXHIBIT K

Landscape Palette

John F. Long



#### **Accent Plants**

- 32. Agave colorata (Mescal Ceniza)

- Agave colorata (Mescal Ceniza)
   Agave havardiana (Havard Agave)
   Agave ocahui (Ocahui Agave)
   Agave weberi (Weber Agave)
   Asclepia subulata (Desert Milkweed)
   Dasylirion longissimum (Toothless Desert Sotol)
   Fouquieria splendens (Ocotillo)
   Hesperaloe parviflora (Red Hesperaloe)
   Opuntia bigelovii (Teddy Bear Cholla)
   Opuntia violacea santa-rita (Santa Rita Prickly-Pear)
   Yucca elata (Soaptree Yucca)



**EXHIBIT K** 

Landscape Palette

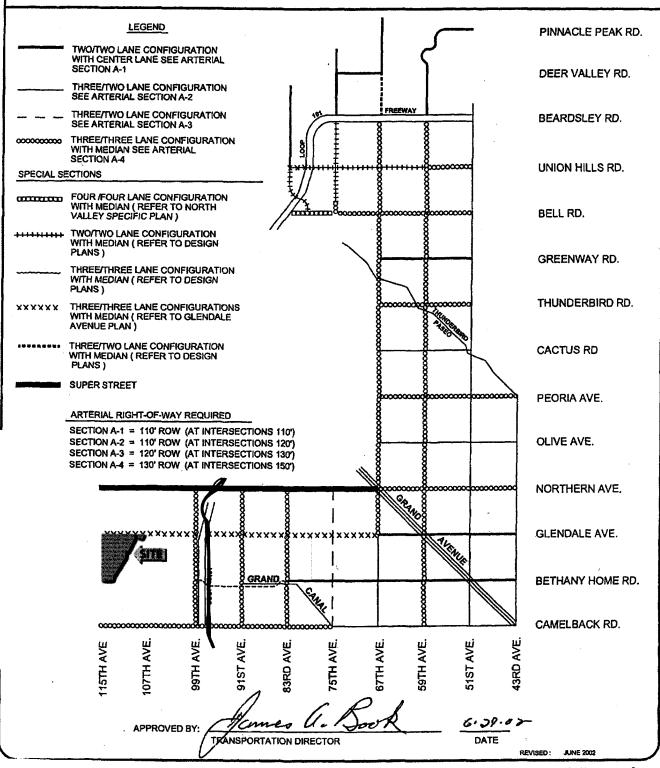
John T. Long

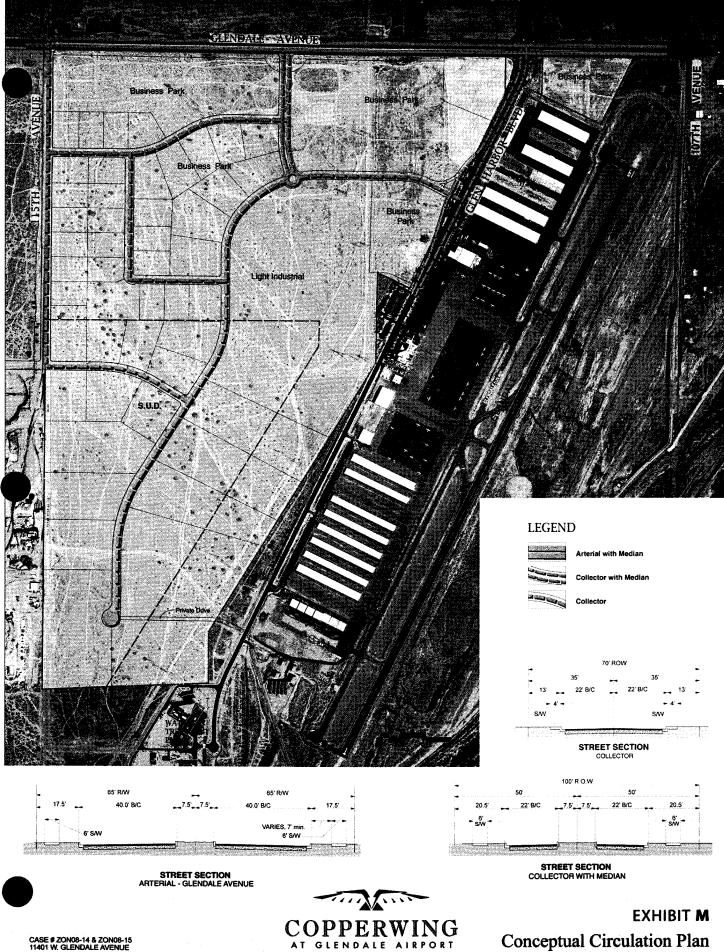
# STANDARD DETAIL G-300

CITY OF GLENDALE TRANSPORTATION



# ARTERIAL STREET SECTION AND RIGHT-OF-WAY MAP



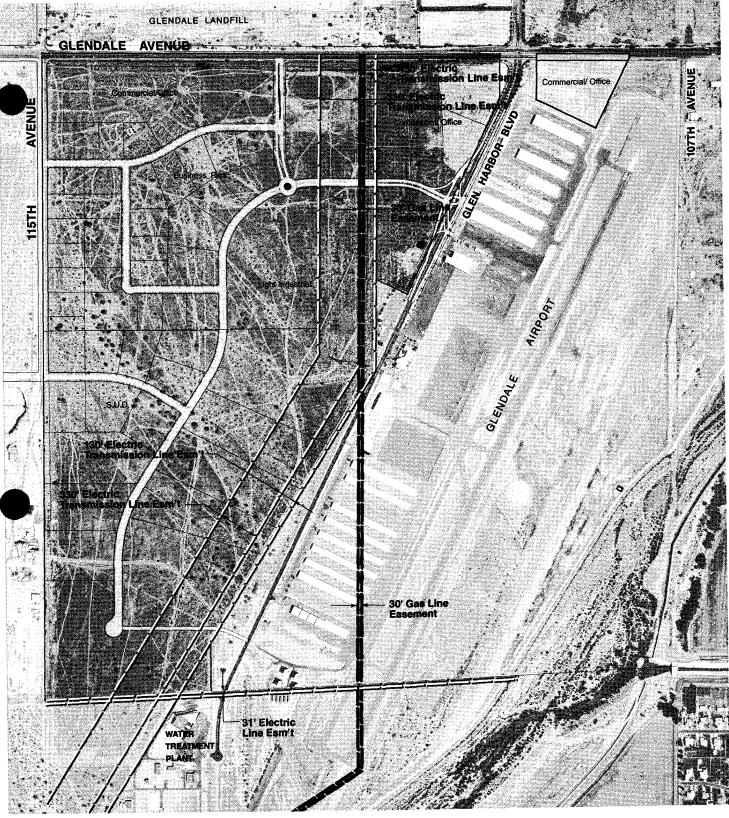


CASE # ZON08-14 & ZON08-15 11401 W. GLENDALE AVENUE

THEALTERGROUP

**EXHIBIT M** Conceptual Circulation Plan







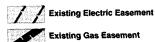






EXHIBIT N

Existing Utility Easements









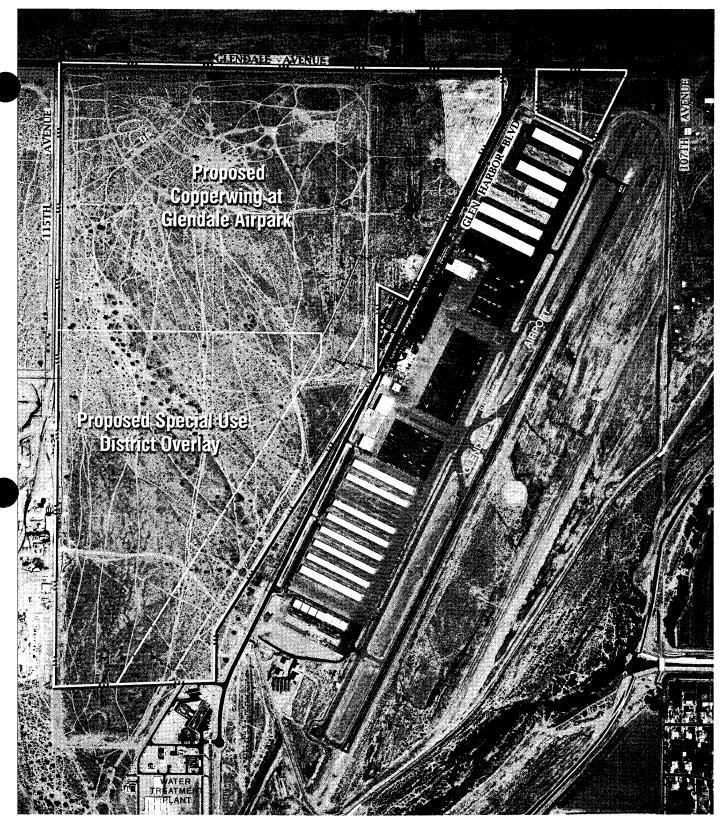


EXHIBIT O

Topography Map

CASE # ZON08-14 & #ZON08-15 11401 W. GLENDALE AVENUE







CASE # ZON08-14 & #ZON08-15 11401 W. GLENDALE AVENUE



EXHIBIT P

Aerial Map

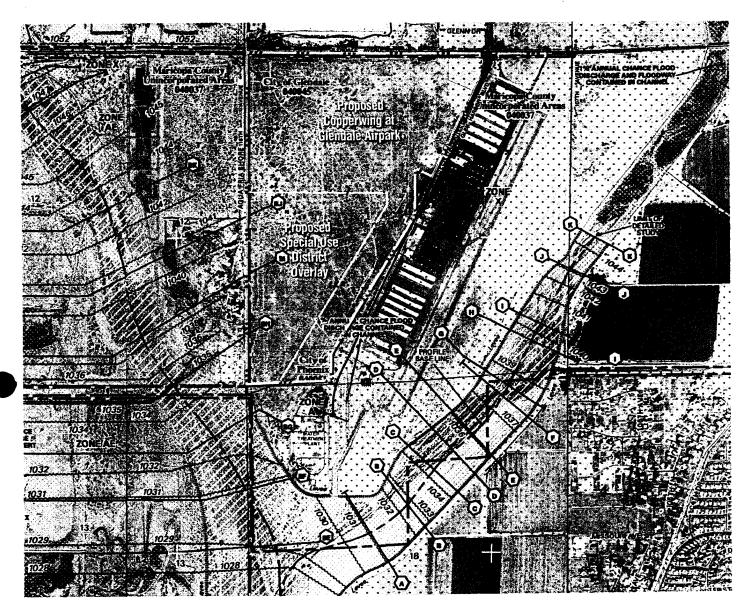






EXHIBIT Q

Flood Map

John F. Long

THEALTERGROUP



SE # ZON08-14 & #ZON08-15 01 W. GLENDALE AVENUE



Gregg A. Creaser, P.E. Brett P. Creaser, P.E. Donald L. Cornelison, P.E. Steven A. Griess, P.E. Keith R. Gravel, P.E. Jason C. Wells, P.E. Brian E. Lingnau, Ph.D., P.E. Fimothy J. Rheinschmidt, R.G. Todd B. Hanke, P.E.

# REPORT ON PRELIMINARY GEOTECHNICAL INVESTIGATION

DESIGNATION:

Glendale Airport Business Park

LOCATION:

SEC 115th Avenue & Glendale Avenue

Glendale, Arizona

CLIENT:

John F. Long Properties

PROJECT NO:

080217SA

DATE:

March 10, 2008





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2.2	Geologic Conditions	2
2.3	Seismic Design Parameters	2
2.4	General Subsurface Conditions.	3
3.0	ANALYSIS AND RECOMMENDATIONS	3
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3.2	Site Preparation	4
3.3	Foundation Design	5
3.4	Lateral Pressures	7
3.5	Fill and Backfill	7
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This report presents the results of a preliminary subsoil investigation carried out at the site of the proposed business park. The site is located on the southeast corner of 115<sup>th</sup> Avenue and Glendale Avenue in Glendale, Arizona.

Preliminary information calls for the construction of a 150 acre business park with several buildings ranging in size and shape. Though no design details were available at the time of this report, buildings are assumed to be slab on grade, one to three stories high with masonry and/or tilt panel walls. Structural loads are expected to be light to moderate and no special considerations regarding settlement tolerances are known at this time. Adjacent areas will be landscaped or paved to support moderate passenger and light commercial truck traffic. Landscaped areas will be utilized for storm water retention and disposal.

Due to the lack of information, it is recommended to consider this report for property assessment and preliminary design only. Once the site and grading plans have been established, this office should review the new data to determine what additional data is necessary (if any) for final design. It is recommended to provide a more detailed parcel specific geotechnical investigation as the parcels are developed.

#### 2.0 GENERAL SITE AND SOIL CONDITIONS

#### 2.1 Site Conditions

The trapezoidal shaped site is bounded on the north by Glendale Avenue followed by a landfill, on the south by vacant land, on the east by Glen Harbor Boulevard followed by Glendale Airport and on the west by 115<sup>th</sup> Avenue and an aggregate quarry. The site is generally flat with native desert vegetation. Several old roads transverse the site, especially in the northwest. Some of these roads are paved with asphalt while others have degraded to gravel. There are also several concrete slabs present in the northwest part of the site. It is assumed that the area was once a trailer home park and that the slabs were used to park trailers on. Though there appears to be no previous development in the southern part of the site, there are several trails, apparently used for motocross tracks. There are several earthen jumps on the trails, some up to three feet high. It appears that in an effort to stop trespassing on the trails several pits were dug in the trails. The pits are a few feet wide and extend to about 1.5 to 2 feet in depth. Native desert vegetation covers the site with several tall trees scattered throughout. There is no evidence of mass fill placement on the site nor is there evidence of structures having been present.



# 2.2 Geologic Conditions

The site is tocated within an area that has undergone considerable subsidence due to groundwater removal. Subsidence of several feet has been recorded in the immediate area of the site, near Luke Air Force Base about 3 miles west of the site. Areas of subsidence are known to produce earth fissuring, which has affected areas within several miles of the site, near Luke AFB. No evidence of earth fissures was observed on the site. Although it is unlikely, it is possible that earth fissures exist at depth and are not visible due to surface disruption on the site. Fissure gullies form over subsurface irregularities such as bedrock highs, which cause tensional stresses and differential subsidence. Where such anomalies are not present, subsidence tends to be uniform over a wide area, this having minimal effect on surficial structures.

It is not known if subsidence at this site has stopped, if it is continuing, or at what rate it may be occurring. However, the absence of observable fissures indicates that the structural effects on buildings should be minimal. Subsidence is a basin wide phenomenon that would result in differential elevation changes over long distances, which should not affect the type of buildings proposed for this site.

If any cracks, crevasses, or fissures are noted during site excavation this office should be notified immediately. A representative from this office will then visit the site, assess the feature and make recommendations regarding restorative measures.

#### 2.3 Seismic Design Parameters

The project area is located in a seismic zone that is considered to have low historical seismicity. The seismicity of the Phoenix area has had only two magnitude 3.0 events in over 100 years. The site is located within the Uniform Building Code (UBC) earthquake Region 1. Liquefaction is not considered a concern as groundwater exceeds 15 meters below ground surface. In fact, regional groundwater is reported to be on the order of 100 to 200 feet deep in the area.

Although borings were not advanced to 100 feet, based on the nature of the subsoils encountered in the borings and geology in the area, Site Class Definition, Class D (Table 1615.1.1, 2000 & 2003 IBC, and Table 1613.5.2, 2006 IBC) may be used for design of the structures. It may be possible to upgrade Site Classification to Class C with additional deeper soil profile information. In addition, the following seismic parameters may be used for design (based on 2002 USGS maps adopted by 2006 IBC):



Table 2.3.1 Seismic Parameters

MCE spectral response acceleration for 0.2 second period, S <sub>S</sub> :	0.171g
<del></del>	
MCE <sup>1</sup> spectral response acceleration for 1.0 second period, S <sub>1</sub> :	0.059g
Site coefficient, Fa:	1.6
Site coefficient, Fv:	2.4
MCE <sup>1</sup> spectral response acceleration adjusted for site class, S <sub>MS</sub> :	0.274g
MCE <sup>1</sup> spectral response acceleration adjusted for site class, S <sub>Mt</sub> :	0.142g
5% Damped spectral response acceleration, S <sub>DS:</sub>	0.183g
5% Damped spectral response acceleration, S <sub>D1</sub> :	0.095g
NOTES: MCE = maximum considered earthquake	

#### 2.4 General Subsurface Conditions

The site lies near the confluence of New and Agua Fria Rivers. Subsoil conditions at the site comprise predominantly of sands and gravel with varying amounts of silt and clay. There are also several layers of cobbles below 10 feet that were encountered during drilling and confirmed upon a visual inspection of the adjacent quarry. The majority of the borings were terminated by auger refusal on cobbles and were not advanced deeper than 23 feet below existing grade. The standard penetration resistance test (SPT) values range from 3 to 50+ blows per foot. No groundwater was encountered during this investigation.

Laboratory testing indicates in-situ dry densities of the upper soils on the order of 88 to 100 pcf and water contents on the order of 4 to 11 percent at the time of investigation. Liquid limits range from non-plastic to 29 percent. Plasticity indices range from non-plastic to 7 percent. The upper soils exhibit volume increase (swell) due to wetting of less than one percent when compacted to moisture and density levels normally expected during construction. Undisturbed samples displayed additional significant compression due to inundation under a maximum confining load of 3,200 and 6,400 psf.

#### 3.0 ANALYSIS AND RECOMMENDATIONS

#### 3.1 Analysis

Analysis of the field and laboratory data indicates that subsoils at the site are favorable for the support of the proposed structures on shallow foundations and slab-on-grade construction subject to some remedial earthworks.



Excavation operations should be relatively straightforward using conventional equipment. Groundwater is not expected to be a factor in the design or construction of foundations and underground utilities.

The potential for compressible soils is a concern. Laboratory and field testing indicates that the upper soils are of low density and capable of differential post-construction settlement when subjected to inundation. This could cause excessive settlement resulting in cracking problems. Accordingly, recommendations are made to over-excavate and recompact the bearing soils to increase density and reduce the potential for collapse and provide a more uniform bearing surface. Attention must be paid to provide proper drainage to limit the potential for water infiltration of deeper soils. A minimum slope of at least 5 percent for a distance of 10 feet is recommended for unpaved landscaped areas. Roof drains must be directed to the pavement or storm drains. They should not be allowed to discharge into planters adjacent to the structure. Irrigated planters adjacent to the structures should be kept at a minimum and/or the use of low water use plants (xeriscape). Storm water retention basins should be kept at least 10 feet away from the structure.

For exterior slabs on grade, frequent jointing is recommended to control cracking and reduce tripping hazards should differential movement occur. It is also recommended to pin the landing slab to the building floor/stem wall. This will reduce the potential for the exterior slab lifting and blocking the operation of out-swinging doors. Pinning typically consists of 24 inch long No. 4 reinforcing steel dowels placed at 12-inch centers.

#### 3.2 Site Preparation

The entire area to be occupied by the proposed construction should be stripped of all vegetation, debris, rubble and obviously loose surface soils. In the northwest portion of the site the existing concrete slabs and foundation elements should be removed in their entirety along with soil disturbed by this activity. Carefully remove all concrete and other elements as well as any deleterious materials that may be encountered. The entire affected building pad area should be over-excavated at least 12 inches to aid in location of other buried hazards (i.e. foundations, septic systems, etc.). If encountered, they should be removed and the resulting excavation widened as necessary to provide access for compaction equipment.

Subsoils should be over-excavated at least 2 feet below proposed footing bottom elevation, or existing grade, whichever is deeper, extending at least 5 feet beyond the footing edges within all footing areas. The entire building pad does not require over-excavation provided footing lines can be accurately located during grading operations and that final grades allow for at least 12 inches of non-expansive material directly beneath the building slab, if this option is selected, in addition to the aggregate base. It may be more



feasible to over-excavate the entire building pad if the building footprint is relatively small. A representative of the geotechnical engineer should examine the subgrade once sub-excavation is complete and prior to backfilling to ensure removal of deleterious materials. Fill placement and quality should be as defined in the "Fill and Backfill" section of this report.

It is not known whether underground services related to the previous facilities on the northwest side of the site will be removed. If any utility is located within 5 feet of any proposed foundation, relocation and/or abandonment of the utility should be provided. They should either be removed and replaced with engineered fill or abandoned in-place. In the case of manholes and pipelines, it may be possible to abandon them in-place. The tops of manholes should be removed and filled with a weak (>500 psi) cementitious grout. Pipelines larger than 6 inches should be capped and filled with grout.

Prior to placing structural fill below footing bottom elevation, the exposed grade should be scarified to a depth of 8 inches, moisture-conditioned to optimum (±2 percent) and compacted to at least 95 percent of maximum dry density as determined by ASTM D-698. Pavement areas should be scarified, moisture-conditioned and compacted in a similar manner.

All cut areas and areas above footing bottom elevation that are to receive only floor slab fill  $\frac{1}{2}$  should be scarified to a depth of 8 inches, moisture-conditioned to optimum ( $\pm 2$  percent) and compacted to at least 95 percent of maximum dry density.

#### 3.3 Foundation Design

If site preparation is carried out as set forth herein, the following bearing capacities can be utilized for design:



# Table 3.3.1 Foundation Design

Alternates	Foundation Type	Bearing Media	Foundation Depth (feet)	Allowable Bearing Capacity (psf)
Alternate 1	Spread Foundations	2' Engineered Fill	1.5	2,500
Alternate 2	Spread Foundations	2' Engineered Fill	2.0	4,000

#### Notes:

1. Depth refers to bottom of footing elevation below lowest adjacent finished grade, or finished floor for interior footings, bearing on at least 2.0 feet of engineered fill plus 6 to 8 inches compacted subgrade.

These bearing capacities refer to the total of all loads, dead and live, and are net pressures. They may be increased one-third for wind, seismic or other loads of short duration. All footing excavations should be level and cleaned of all loose or disturbed materials. Positive drainage away from the proposed building must be maintained at all times.

Continuous wall footings and isolated rectangular footings should be designed with minimum widths of 16 and 24 inches respectively, regardless of the resultant bearing pressure. Lightly loaded interior partitions (less than 800 plf) may be supported on reinforced thickened slab sections (minimum 12 inches of bearing width).

Estimated settlements under design loads are on the order of ½ to 1-inch, virtually all of which will occur during construction. Post-construction differential settlements will be negligible, under existing and compacted moisture contents. Additional localized settlements of the same magnitude could occur if native supporting soils were to experience a significant increase in moisture content. Positive drainage away from structures, and controlled routing of roof runoff should be provided to prevent ponding adjacent to perimeter walls. Planters requiring heavy watering should be considered in this regard. Care should be taken in design and construction to insure that domestic and interior storm drain water is contained to prevent seepage.

Continuous footings and stem walls should be reinforced to distribute stresses arising from small differential movements, and long walls should be provided with control joints to accommodate these movements. Reinforcement and control joints are suggested to allow slight movement and prevent minor floor slab cracking.



#### 3.4 Lateral Pressures

The following lateral pressure values may be utilized for the proposed construction:

Active Pressures	
Unrestrained Walls	35 pcf
At-Rest Pressures	
Restrained Walls	60 pcf
Passive Pressures	
Continuous Footings	350 pcf
Spread Footings or Drilled Piers	400 pcf
Coefficient of Friction (w/ passive pressure)	0.35
Coefficient of Friction (w/out passive pressure)	0.45

All backfill must be compacted to not less than 95 percent (ASTM D-698) to mobilize these passive values at low strain. Expansive soils should not be used as retaining wall backfill, except as a surface seal to limit infiltration of storm/irrigation water. The expansive pressures could greatly increase active pressures.

#### 3.5 Fill and Backfill

Native soils are considered suitable for use in general grading fills, engineered pad fill, and retaining wall backfill provided particles greater than 3 inches in size are first removed. In specific cases, it may be possible to utilize larger size materials in deeper fills depending on location, use, depth of cover and capacity of contractor to compact.

The silty fine sand soils may be sensitive to excessive moisture content and will become unstable at elevated moisture content. Accordingly, it may be necessary to compact soils on the dry side of optimum, especially in asphalt pavement areas. The reduced moisture content under slabs-on-grade should only be used upon approval of the engineer in the field.

If imported common fill for use in site grading is required, it should be examined by a Soils Engineer to ensure that it is of low swell potential and free of organic or otherwise deleterious material. In general, the fill should have 100 percent passing the 3-inch sieve and no more than 60 percent passing the 200 sieve. For the fine fraction (passing the 40 sieve), the liquid limit and plasticity index should not exceed 30 percent and 10 percent, respectively. It should exhibit less than 1.5 percent swell potential when compacted to 95 percent of maximum dry density (ASTM D-698) at a moisture content of 2 percent below optimum, confined under a 100 psf surcharge, and inundated.



Fill should be placed on subgrade which has been properly prepared and approved by a Soils Engineer. Fill must be wetted and thoroughly mixed to achieve optimum moisture content, ±2 percent. Fill should be placed in horizontal lifts of 8-inch thickness (or as dictated by compaction equipment) and compacted to the percent of maximum dry density per ASTM D-698 set forth as follows:

A.	Buil	ding Areas	
	1.	Below footing level	95
	2.	Below slabs-on-grade (non-expansive soils)	95
	3.	Below slabs-on-grade (expansive soils)	90-95 (max)
		(Not recommended for the top 12-inches of Pad)	
В.	Pave	ement Subgrade or Fill	95
C.	Utility Trench Backfill		95
D.	Agg	regate Base Course	
	1.	Below floor slabs	95
	2.	Below asphalt paving	100
E.	Lan	dscape Areas	
	1.	Miscellaneous fill	90
	2.	Utility trench - more than 1.0' below finish grade	85
	3.	Utility trench - within 1.0' of finish grade	90

#### 3.6 Utilities Installation

Trench excavations for shallow utilities can be accomplished by conventional trenching equipment. Trench walls may not stand near-vertical for the periods of time required to install utilities. Trenches penetrating looser sandy deposits may experience sloughing of side walls and necessitating cutting back of side slopes and/or shoring. Adequate precautions must be taken to protect workmen in accordance with all current governmental regulations.

Backfill of trenches may be carried out with native excavated material provided over-sized material (>3 inches) is first removed. This material should be moisture-conditioned, placed in 8 inch lifts and mechanically compacted. Water settling is not recommended. Compaction requirements are summarized in the "Fill And Backfill" section of this report.



#### 3.7 Slabs-on-Grade

To facilitate fine grading operations and aid in concrete curing, a 4-inch thick layer of granular material conforming to the gradation for aggregate base (A.B.) as per M.A.G. Specification Section 702 should be utilized beneath the slab. Dried subgrade soils must be re-moistened prior to placing the aggregate base if allowed to dry out, especially if fine-grained soils are used in the top 12-inches of the pad.

# 3.8 Asphalt/Concrete Pavement Design

If earthwork in paved areas is carried out to finish subgrade elevation as set forth herein, the subgrade will provide adequate support for pavements. The location designation is for reference only. The designer/owner should choose the appropriate sections to meet the anticipated traffic volume and life expectancy. The section capacity is reported as daily ESALs, Equivalent 18 kip Single Axle Loads. Typical heavy trucks impart 1.0 to 2.5 ESALs per truck depending on load. It takes approximately 1200 passenger cars to impart 1 ESAL.

Area of Placement	Daily 18-1	Daily 18-kip ESALs		Flexible		
Area of Fracement	AC	РССР	AC (0.39)	ABC (0.12)	PCCP	
Auto Parking	6	9	2.0"	4.0"	5.0"	
Auto rarking	15	15	2.0"	6.0"	5.5"	
T. I.D. 1' /D'	25	23	3.0"	4.0"	6.0"	
Truck Parking/Drives	57	51	3.0"	6.0"	7.0"	
Collector Streets	120		3.0"	8.0"	N/A	
Confector Streets	110		5.0"	0.0"	N/A	

**Table 3.8.1 Pavement Sections** 

#### Notes:

- Designs are based on AASHTO design equations and ADOT correlated R-values.
- 2. The PCCP thickness is increased to provide better load transfer, and reduce potential for joint and edge failures. Design PCCP per ACI 330R-87.
- 3. Full depth asphalt or increased asphalt thickness can be increased by adding 1.0-inch asphalt for each 3 inches of base course replaced.
- 4. Minimum section for a collector street per City of Glendale is 3" of AC on 8" of ABC.



Pavement Design Parameters:

Assume:

One 18 kip Equivalent Single Axle Load(ESAL)/Truck

Life:

20 years

Subgrade Soil Profile:

% Passing #200 sieve:

45%

Plasticity Index:

3%

k:

150 pci (assumed)

R value:

52 (per ADOT tables)

 $M_R$ :

26,000 (Max allowed per AASHTO design)

These designs assume that all subgrades are prepared in accordance with the recommendations contained in the "Site Preparation" and "Fill and Backfill" sections of this report, and paving operations carried out in a proper manner. If pavement subgrade preparation is not carried out immediately prior to paving, the entire area should be proof-rolled at that time with a heavy pneumatic-tired roller to identify locally unstable areas for repair.

Pavement base course material should be aggregate base per M.A.G. Section 702 Specifications. Asphalt concrete materials and mix design should conform to M.A.G. 710. It is recommended that a 12.5mm or 19.0mm mix designation be used for the pavements. While a 19.0mm mix may have a somewhat rougher texture, it offers more stability and resistance to scuffing, particularly in truck turning areas. Pavement installation should be carried out under applicable portions of M.A.G. Section 321 and municipality standards. The asphalt supplier should be informed of the pavement use and required to provide a mix that will provide stability and be aesthetically acceptable. Some of the newer M.A.G. mixes are very coarse and could cause placing and finish problems. A mix design should be submitted for review to determine if it will be acceptable for the intended use.

For sidewalks and other areas not subjective to vehicular traffic a 4-inch section of concrete will be sufficient. For trash and dumpster enclosures a thicker section of 6 inches of concrete is recommended.

Portland Cement Concrete Pavement must have a minimum 28-day flexural strength 550 psi (compressive strength of approximately 3,700 psi). It may be cast directly on the prepared subgrade with proper compaction (reduced) and the elevated moisture content as recommended in the report. Lacking an aggregate base course, attention must be paid to using low slump concrete and proper curing, especially on the thinner sections. No reinforcing is necessary. Joint design and spacing should be in accordance with ACI recommendations. Construction joints should contain dowels or be tongue and grooved to provide load transfer. Tie bars are recommended on the joints adjacent to unsupported edges. Maximum joint spacing in



feet should not exceed 2 to 3 times the thickness in inches. Joint sealing with a quality silicone sealer is recommended to prevent water from entering the subgrade allowing pumping and loss of support.

Proper subgrade preparation and joint sealing will reduce (but not eliminate) the potential for slab movements (thus cracking) on the expansive native soils. Frequent jointing will reduce uncontrolled cracking and increase the efficiency of aggregate interlock joint transfer.

#### 3.9 Shallow Percolation

Two shallow percolation tests were performed in soils that had much higher clay contents than a majority of the soils on site. These results should be viewed as a "worst-case-scenario" as the sandier soils will percolate much faster. The tests were performed in the areas of the proposed retention basins in 12-inch diameter borings 48 inches deep and presoaked for at least 24 hours. PVC sleeves were installed to eliminate sidewall influence. Soils at the test sites visually classified as clayey sand. The following results were obtained.

Table 3.9.1 Percolation Results

Location	Stabilized Percolation Rate			
Location	minutes/inch	ft <sup>3</sup> /hour/ft <sup>2</sup> of drainage area		
P-1 (Northwest Corner)	38	0.13		
P-2 (Southwest Corner)	40	0.13		

A third test was requested, however due to the soil conditions (loose sands) on the site the test hole would not remain open long enough to install a PVC sleeve to conduct the test. Based on the soil classifications, these rates may deteriorate over time. Accordingly, a conservative factor of safety should be applied.

#### 4.0 GENERAL

The scope of this investigation and report includes only regional published considerations for seismic activity and ground fissures resulting from subsidence due to groundwater withdrawal, not any site specific studies. The scope does not include any considerations of hazardous releases or toxic contamination of any type.

Our analysis of data and the recommendations presented herein are based on the assumption that soil conditions do not vary significantly from those found at specific sample locations. Our work has been



performed in accordance with generally accepted engineering principles and practice; this warranty is in lieu of all other warranties expressed or implied.

We recommend that a representative of the Soils Engineer observe and test the earthwork and foundation portions of this project to ensure compliance to project specifications and the field applicability of subsurface conditions which are the basis of the recommendations presented in this report. If any significant changes are made in the scope of work or type of construction that was assumed in this report, we must review such revised conditions to confirm our findings if the conclusions and recommendations presented herein are to apply.

Respectfully submitted, SPEEDIE & ASSOCIATES, INC.

Keith R. Gravel, P.E.

Gregg A. Creaser, P.E.



# **APPENDIX**

## FIELD AND LABORATORY INVESTIGATION

SOIL BORING LOCATION PLAN

SOIL LEGEND

LOG OF TEST BORINGS

TABULATION OF TEST DATA

CONSOLIDATION TEST

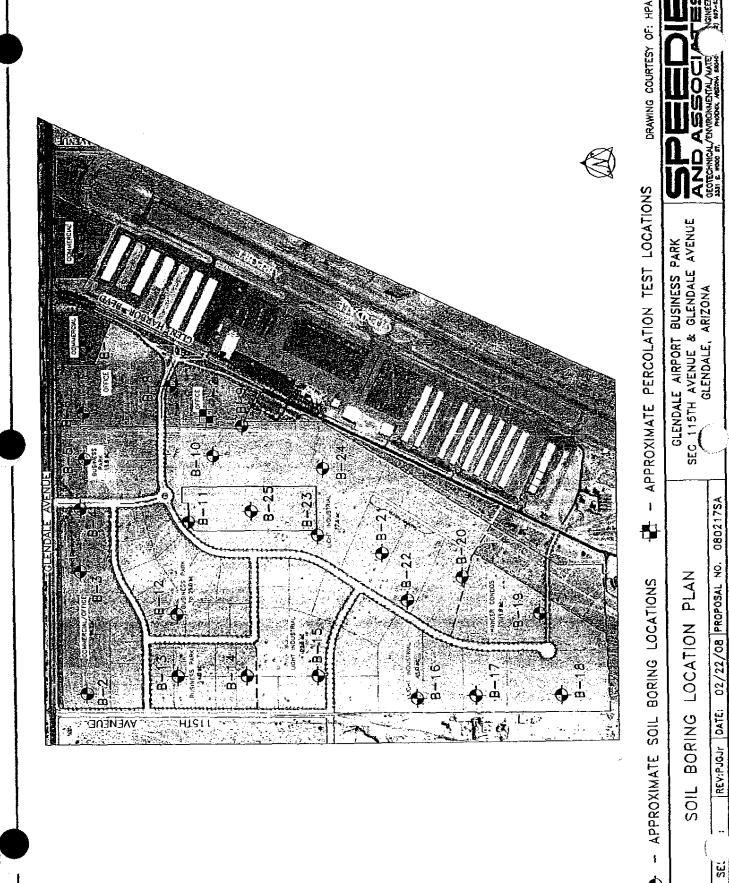
MOISTURE-DENSITY RELATIONS

SWELL TEST DATA

#### FIELD AND LABORATORY INVESTIGATION

On February 20<sup>th</sup> and 21<sup>st</sup>, soil test borings were drilled at the approximate locations shown on the attached Soil Boring Location Plan. All exploration work was carried out under the full-time supervision of our field engineer, who recorded subsurface conditions and obtained samples for laboratory testing. The soil borings were advanced with a truck-mounted CME-75 drill rig utilizing 7-inch diameter hollow stem flight augers. Detailed information regarding the borings and samples obtained can be found on an individual Log of Test Boring prepared for each drilling location.

Laboratory testing consisted of moisture content, dry density, grain-size distribution and plasticity (Atterberg Limits) tests for classification and pavement design parameters. Remolded swell tests were performed on samples compacted to densities and moisture contents expected during construction. Compression tests were performed on a selected ring sample in order to estimate settlements and determine effects of inundation. All field and laboratory data is presented in this appendix.



# SOIL LEGEND

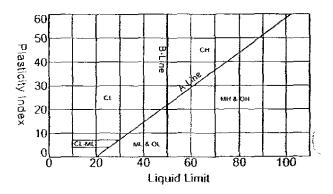
g	SAMPLE DESCRIPTION		
K	AS Auger Sample		A grab sample taken directly from auger flights.
H	BS	Large Bulk Sample	A grab sample taken from auger spoils or from bucket of backhoe.
N N	s	Spoon Sample	Standard Penetration Test (ASTM D-1586) Driving a 2.0 inch outside diameter split spoon sampler into undisturbed soil for three successive 6-inch increments by means of a 140 lb. weight free falling through a distance of 30 inches. The cumulative number of blows for the final 12 inches of penetration is the Standard Penetration Resistance.
Y	RS	Ring Sample	Driving a 3.0 inch outside diameter spoon equipped with a series of 2.42-inch inside diameter, 1-inch long brass rings, into undisturbed soil for one 12-inch increment by the same means of the Spoon Sample. The blows required for the 12 inches of penetration are recorded.
$\sqrt{}$	LS	Liner Sample	Standard Penetration Test driving a 2.0-inch outside diameter split spoon equipped with two 3-inch long, 3/8-inch inside diameter brass liners, separated by a 1-inch long spacer, into undisturbed soil by the same means of the Spoon Sample.
H	ST	Shelby Tube	A 3.0-inch outside diameter thin-walled tube continuously pushed into the undisturbed soil by a rapid motion, without impact or twisting (ASTM D-1587).
		Continuous Penetration Resistance	Driving a 2.0-inch outside diameter "Bullnose Penetrometer" continuously into undisturbed soil by the same means of the spoon sample. The blows for each successive 12 inch increment are recorded.

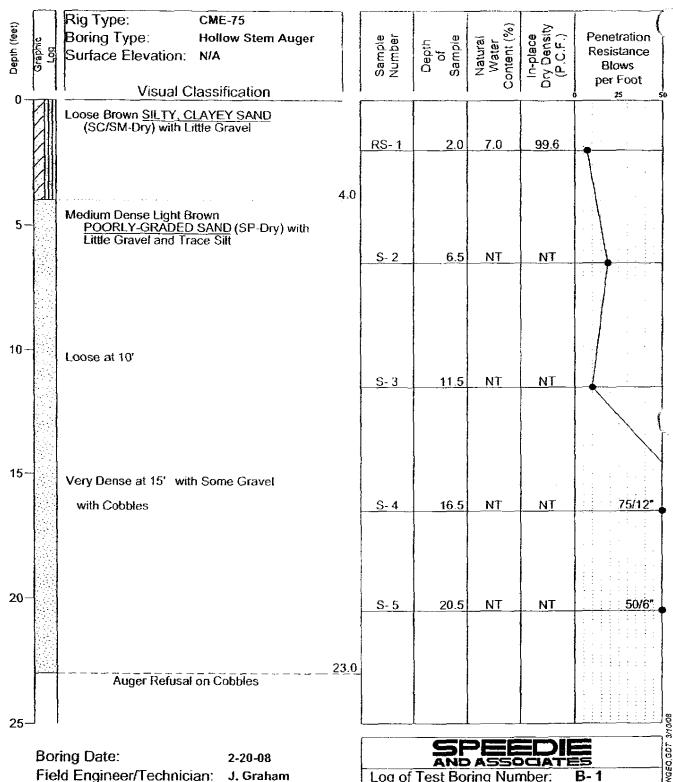
	CONSISTENCY	RELATIVE 1	DENSITY	
Clays & Silts	Blows/Foot	Strength (tons/sq ft)	Sands & Gravels	Blows/Foot
Very Soft Soft Firm Stiff Very Stiff Hard	0 - 2 2 - 4 5 - 8 9 - 15 16 - 30 > 30	0 - 0.25 0.25 - 0.5 0.5 - 1.0 1 - 2 2 - 4 > 4	Very Loose Loose Medium Dense Dense Very Dense	0 - 4 5 - 10 11 - 30 31 - 50 > 50

MAJOR DIVISIONS			SYME	OLS	TYPICAL
IN.	MJOK DIVISK		GRAPH	LETTER	DESCRIPTIONS
_	SRAVEL	CLEAN GRAVELS		GW	MECH CRADET CRALEIS, CRAVEL SUND MATURES, LITTLE DR NO FINES
	AND GRAVELLY SOLE	(UTALE OH NO FOR€S)	10°C	GP	POOR: P-CR-40ED GRAVELS, CAR-VEL - SAND MIXTURES CUTTLE OPENS 4 NGS
COARSE GRAINED SOILS	COLUMN STR. OF COLUMN STR. OF	GRAVELS WITH FINES		GM	SQ THE CHANGES CHANGE SHOP
	AETAMES ON HO. 4 SEVE	CE EMES]		GC	CLAYEN CRANTES, COLAVEL SONS CLAN ANGURES
	GMJZ	CTEXN 24NO2	0 0	sw	MELL CRACES SAIDS, CRAVELLY SANOS, LITTLE OF NO SAIES
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		SANDS WITH FWES		SM	SALIN GUNDE SAME SALI MIXTURES
	SHVE	O <sub>E EMÉ</sub> èl Itemif CM31E VIVO/INI		sc	CLAPET SANOS SANG (LAT MOXIMACE
	SETS AND CLAYS	D LECURO LANT		ML	ANDEGAME SULT AND VERY FRE SANDS ROOM FLOUR, SELFY OF CLAYEY FRE SANDS (IS TLAYEY SULTS WITH SUCHT PLASTICITY
fWE GRAINED				CL	MOGGANC CLAYS OF LOW TO LECHMAPLASTICITY (SAVELLY CLAYS, EARDY CLAYS, SATY CLAYS, LEAW CLAYS
SOILS				Oι	DRCAME SKTS AND DRCAME SKITS QUASS OF LOW PLACE OF V
MCRE YOUR SOL OF BUTERBUTE SMILER THRUMS				3MH	DEFICANT SETS MEACEURS OF DEFICANCEOUS FRE SAND OR SELTY SORES
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<u>-</u>				ОН	ORGANIC CLAYS OF WEDOW TO HIGH PLAS KOTY, ORGANIC SETS
н	SOIL S		PΤ	PERS PRINCE SOURCES AND 4 HIGH CHESKIC COMILENS	

NOTE: BUAL OR MODIFIED SYMBOLS MAY BE USED TO INDICATE BORDERLINE SOIL	
CLASSIFICATIONS OR TO PROVIDE A BETTER GRAPHICAL PRESENTATION OF THE SOIL	

	PARTICLE SIZE				
MATERIAL SIZE	Lo	wer Limit	Upper Limit		
SIZE	mm	mm Sieve Size •		Sieve Size •	
SANDS Fine Medium Coarse	0.075 0.420 2.000	#200 #40 #10	0.42 2.00 4.75	#40 #10 #4	
GRAVELS Fine Coarse	4.75 19	#4 0.75* ×	19 75	0.75" × 3" ×	
COBBLES	75	3" ×	300	12" ×	
BOULDERS	300	12" ×	900	36° ×	
•U.S. Standard	×Clear Square Openings				





Field Engineer/Technician:

J. Graham

Driller:

R. Hamm

Contractor:

Geomechanics SW

	Water Level		
Depth	Hour	Date	]
Free Water	er was Not Enci	ountered	ĮΨ
			1

NT = Not Tested

Log of Test Boring Number:

Glendale Airport Business Park

SEC of 115th Ave & Glendale Ave

Glendale, Arizona

Project No.: 080217SA GENGEO, GDT 3710/08

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<u> </u>	Rig Type: CME-75			;;	<u>&gt;</u>	
Depth (leet) Graphic	Boring Type: Hollow Stem Auger Surface Elevation: N/A	Sample	Depth of Sample	Natural Water Content (%)	In-place Dry Density (P.C.F.)	Penetration
gen eng		Sar	Sar	Nat W	근 (P.)	Blows per Foot
0-7-	Visual Classification	·	· · · · · · · · · · · · · · · · · · ·			25 50
	Medium Dense Brown POORLY-GRADED SAND (SP-Dry to Moist) with Little Gravel					
		<u>S-1</u>	2.5	NT	NT	•
	4.	.0				
5—).	○1 Medium Dense Brown POORLY-GRADED					
ي حرد م	GRAVEL with SAND (GP-Dry to Moist)				•	
٥	0) 9 34	.0 S-2	6.5	NT	NT	
	Medium Dense Brown <u>WELL-GRADED</u> SAND (SW-Dry to Moist) with Little Gravel					
10	o a a a a a a a a a a a a a a a a a a a					
	Very Dense at 10'	S-3	11.0	NT	NT_	50/6"
). 	ع ا					
ļ.	o d					
}.	with Cobbles	ĺ				
15	0					
}	End of Boring	.9 S-4	15.9	NT	NT	50/5"
	2.12 5 25.11.9					
1						
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20		l				
25				l		3/10/08
		1		<b></b>		<u></u>   <u>1</u> -

2-20-08

Field Engineer/Technician:

J. Graham

Driller:

R. Hamm

Contractor:

Geomechanics SW

		Water Level		
I	Depth	Hour	Date	l
	Free Wate	er was Not Ence	ountered	¥
j				Ī.

NT = Not Tested

SPEEDIE AND ASSOCIATES

Log of Test Boring Number:

B- 2

Glendale Airport Business Park

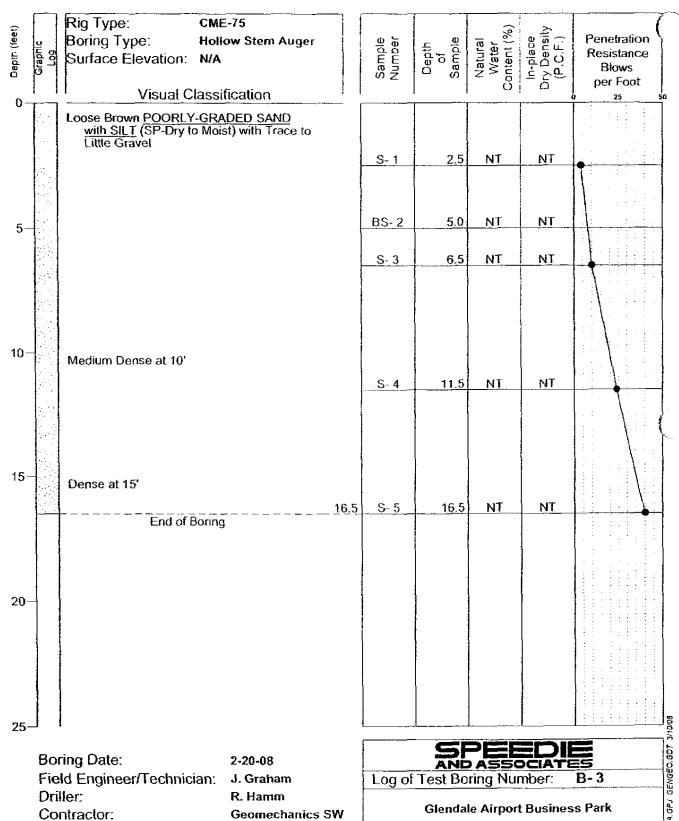
SEC of 115th Ave & Glendale Ave

Glendale, Arizona

Project No.: 080217SA

1.GPJ GENGEO.GOT 3/10/

O MICHAGO



Driller:

R. Hamm

Contractor:

Geomechanics SW

	Water Level		
Depth	Hour	Date	
Free Wate	r was Not Enc	ountered	¥
	<u> </u>		<u>I</u> .

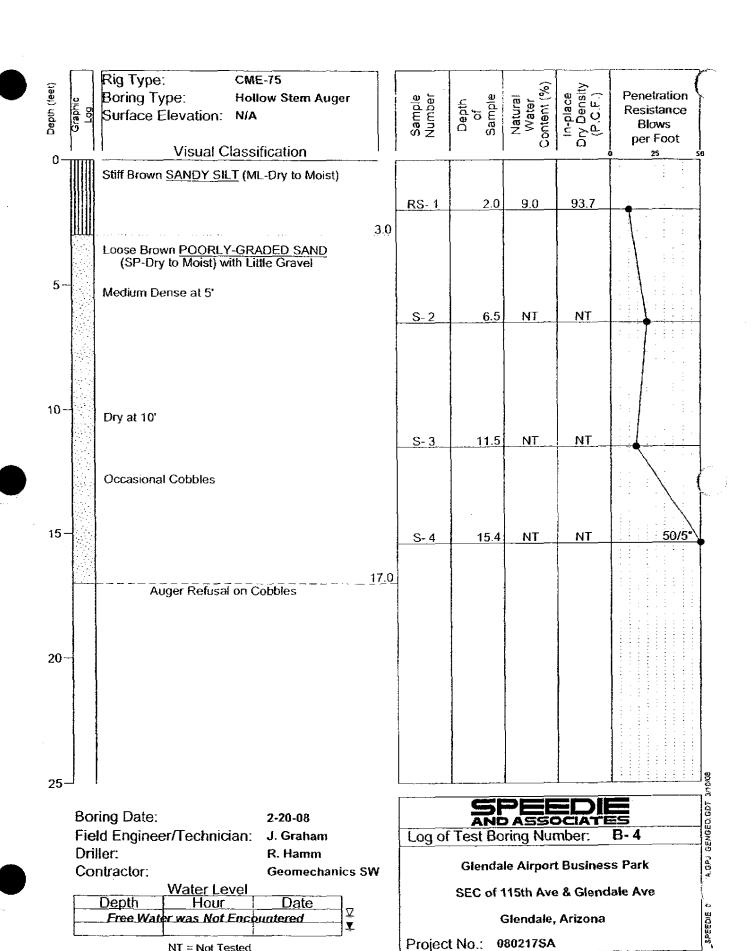
NT = Not Tested

Glendale Airport Business Park

SEC of 115th Ave & Glendale Ave

Glendale, Arizona

Project No.: 080217SA



NT = Not Tested

	Rig Type: CME-75					
Depth (feet) Graphic Log	Boring Type: Hollow Stem Auger	ole Ser	를 음	Natural Water Content (%)	In-place Jry Density (P.C.F.)	Penetration
Jepth (fe Graphic Log	Surface Elevation: N/A	Sample	Depth of Sample	√atu Wate nten	돌입	Resistance Blows
	Visual Classification	0,2		Ö	14-7-10 14-0-7-0 10-0-1	per Foot
0	Loose Brown POORLY-GRADED SAND (SP-Dry to Moist) with Little Gravel					
	(SP-Dry to Moist) with Little Gravel					
		S-1	2.5	NT	NT	•
5	Medium Dense at 5' (-Dry)				•	
		S-2	6.5	NT	NT	
	Occasional Cobbles at 8'					
10-	Very Dense at 10' Some Gravel	S-3	10.8	NT	NT	50/4"
					- 3 - 3 - 3 - 3 - 3 - 3 - 3 - 3 - 3 - 3	
	Increasing Cobbles					
15	15.8	S-4	15.9	NT	NT	50/5"
	End of Boring	0-4	13.3		131	30.5
ĺ						
		1				
20						
				1		
		•				
25	I		l		L	GDT 3/10/08
Bo	ring Date: 2-20-08		SF	? <u>E</u> E		700

2-20-08

Field Engineer/Technician:

J. Graham

Driller:

R. Hamm

Contractor:

Geomechanics SW

	Water Level	
Depth	Hour	Date
Free	Water was Not Enc	ountered $\stackrel{\underline{\vee}}{=}$
		Ţ

NT = Not Tested

AND ASSOCIATES
Log of Test Boring Number: B-

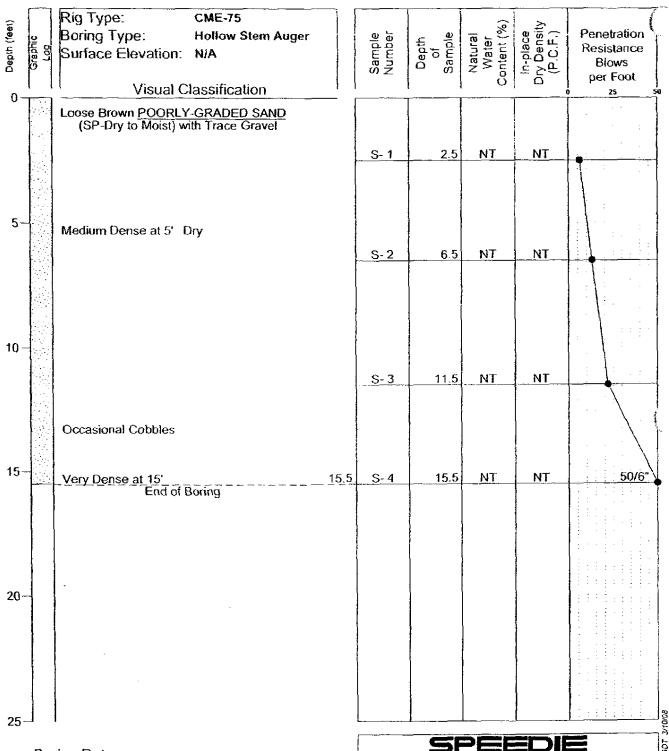
Glendale Airport Business Park

SEC of 115th Ave & Glendale Ave

Glendale, Arizona

Project No.: 080217SA

1.GPJ GENGEO,GE



2-20-08

Field Engineer/Technician:

J. Graham

Driller:

R. Hamm

Contractor:

Geomechanics SW

	Water Level		
Depth	Hour	Date	
Free Wate	r was Not Enc	ountered	Ā Ā
L	ـــــــــــــــــــــــــــــــــــــ	اـــــا	<u>-</u>

NT = Not Tested

Log of Test Boring Number: B-6

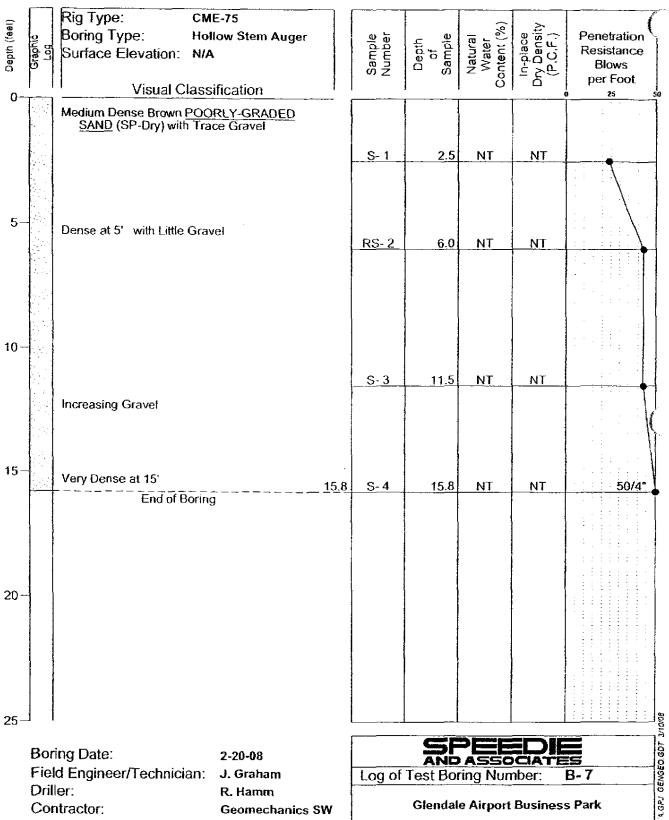
Glendale Airport Business Park

SEC of 115th Ave & Glendale Ave

Glendale, Arizona

Project No.: 080217SA





2-20-08

Field Engineer/Technician:

J. Graham

Driller:

R. Hamm

Contractor:

**Geomechanics SW** 

	Water Level		
Depth	Hour	Date	7_
Free Wate	r was Not Enc	ountered	Ā
L			Ţ
	NT = Not Tested		

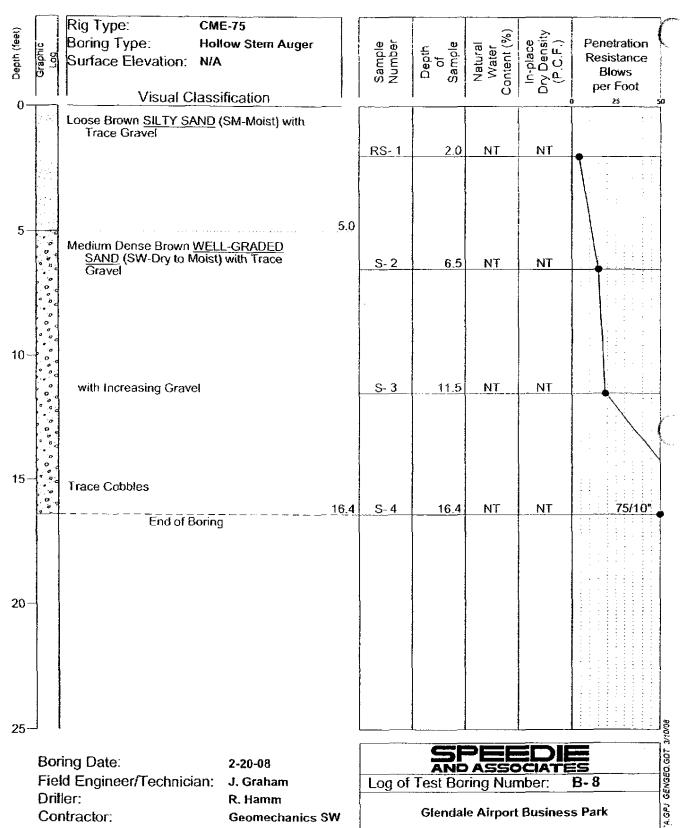
Log of Test Boring Number: B-7

Glendale Airport Business Park

SEC of 115th Ave & Glendale Ave

Glendale, Arizona

Project No.: 080217SA



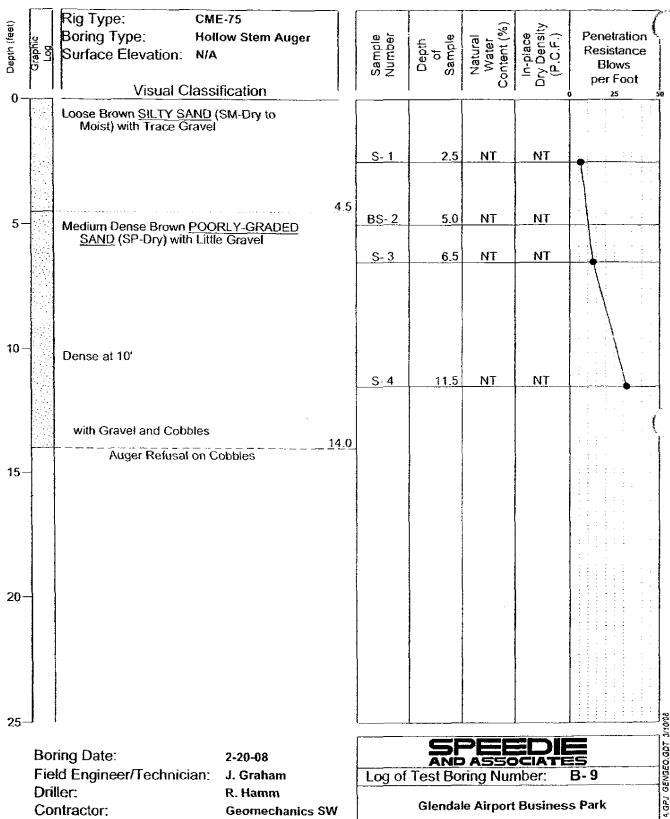
Contractor: **Geomechanics SW** 

		water Level		
1	<u>Depth</u>	Hour	Date	
1	Free Wate	r was Not Enc	puntered	ΔĀ
1				Ť
		NT = Not Tested		

Glendale Airport Business Park SEC of 115th Ave & Glendale Ave

Glendale, Arizona

Project No.: 080217SA



2-20-08

Field Engineer/Technician:

J. Graham

Driller:

R. Hamm

Contractor:

Geomechanics SW

	Water Level		
<u>De</u> pth	Hour	Date	7_
Free Wate	er was Not Enci	ountered	٦¥
			Ţ

NT = Not Tested

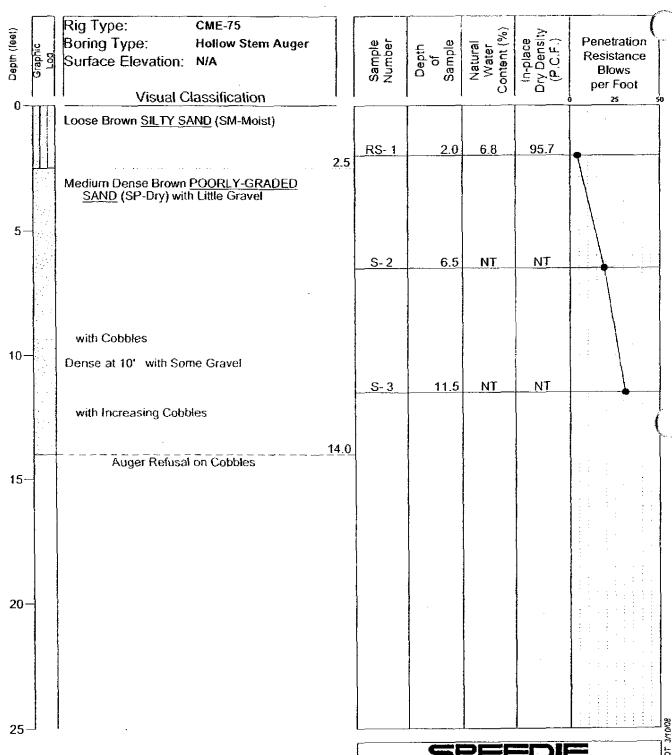
B-9 Log of Test Boring Number:

Glendale Airport Business Park

SEC of 115th Ave & Glendale Ave

Glendale, Arizona

Project No.: 080217SA



2-20-08

Field Engineer/Technician:

J. Graham

Driller:

R. Hamm

Contractor:

Geomechanics SW

Water Level	
Depth Hour Date	_]_
Free Water was Not Encountered	Ţ
	Ţ

NT = Not Tested

B-10 Log of Test Boring Number:

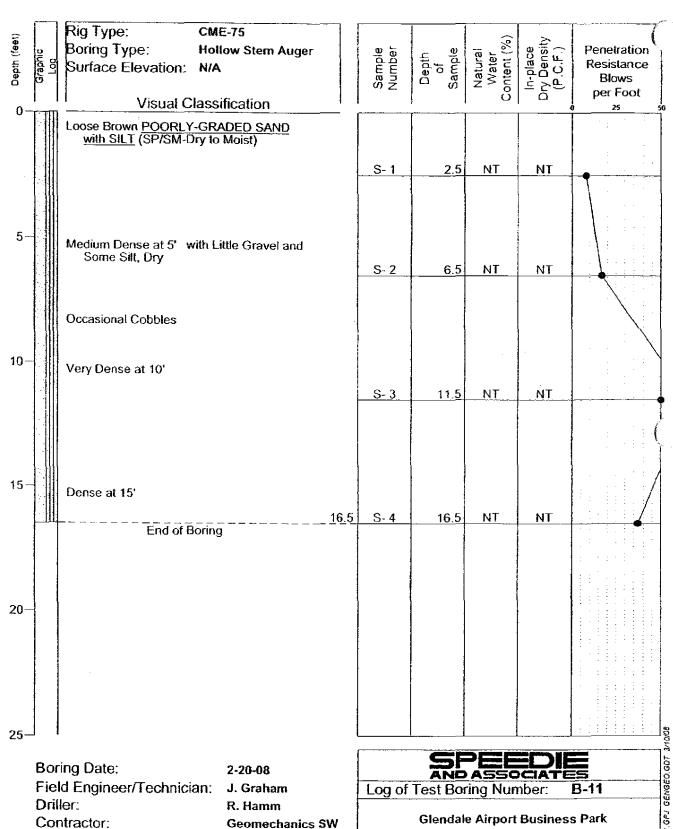
Glendale Airport Business Park

SEC of 115th Ave & Glendale Ave

Glendale, Arizona

080217SA Project No.:

GENGEO.GDT 3/10/08 76



Contractor:

Geomechanics SW

	<u>vvater Level</u>		
Depth	Hour -	Date	
Free Wate	r was Not Enc	ountered	立
L			Ţ

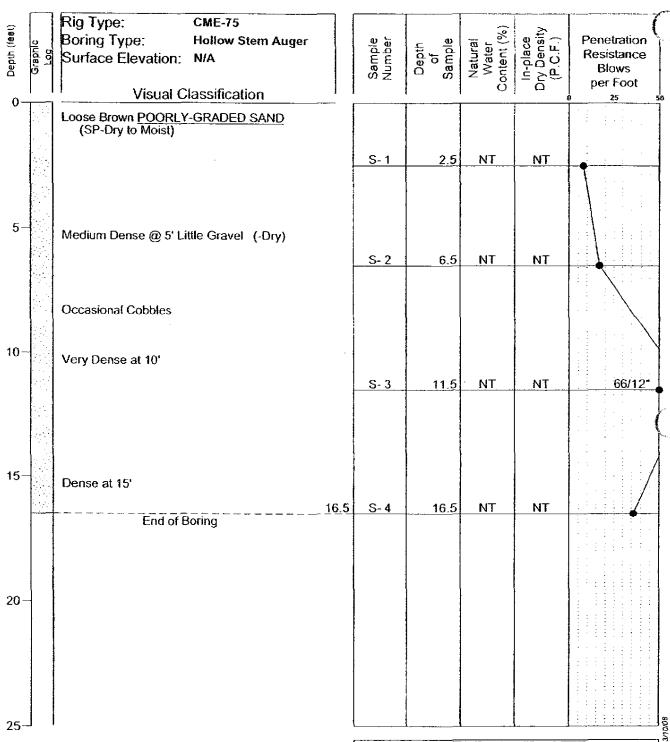
NT = Not Tested

Glendale Airport Business Park

SEC of 115th Ave & Glendale Ave

Glendale, Arizona

Project No.: 080217SA



2-20-08

Field Engineer/Technician:

J. Graham

Driller:

R. Hamm

Contractor:

Geomechanics SW

	Water Level		
Depth	Hour	Date	_
Free Wate	puntered	⊻	
			Ţ

NT = Not Tested

SPEEDIE

Log of Test Boring Number: B-12

\_\_\_\_

Glendale Airport Business Park

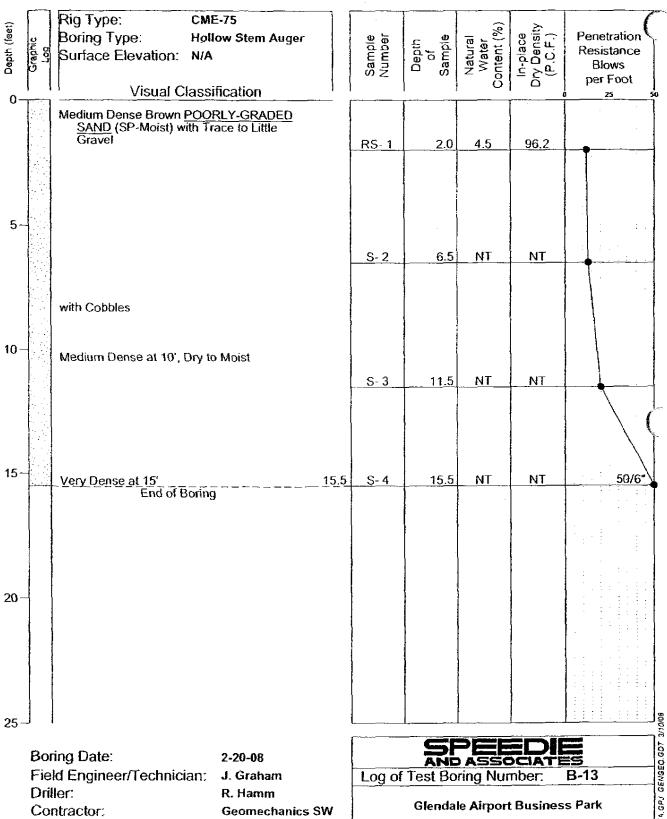
SEC of 115th Ave & Glendale Ave

Glendale, Arizona

Project No.: 0

080217SA

EEDIE OP 1.GPJ GENGEO,GDT 3/10/08



2-20-08

Field Engineer/Technician:

J. Graham

Driller:

R. Hamm

Contractor:

Geomechanics SW

	Water Level		
Depth	Hour	Date	]_
Free Wate	r was Not Enc	puntered	]¥
L	L		Ī

NT = Not Tested

B-13 Log of Test Boring Number:

Glendale Airport Business Park

SEC of 115th Ave & Glendale Ave

Glendale, Arizona

Project No.: 080217SA

Depth (feet)	Graphic Log	Rig Type: CME-75 Boring Type: Hollow Stem Auger Surface Elevation: N/A  Visual Classification	Sample Number	Depth of Sample	Natural Water Content (%)	In-place Dry Density (P.C.F.)	Penetration Resistance Blows per Foot
v		Very Loose Brown POORLY-GRADED SAND (SP-Moist) with Little Gravel					
			S- 1	2.5	NT	NT	
5-		Medium Dense at 5'	S- 2	6.5	NT	NT	
10-							
10		Very Dense at 10' (-Dry)	S-3	11.0	NT	NT	50/6"
15-		Cobbles @ 13'					
		End of Boring	5 S-4	16.5	NT	NT	88/12"
20-							
25-	]	rina Data:		Si	) >EE		307 3/10/08

2-20-08

Field Engineer/Technician:

J. Graham

Driller:

R. Hamm

Contractor:

Geomechanics SW

	Water Level		
Depth	Hour	Date	7_
Free Wate	ountered	ΔĀ	
	<u> </u>		Ţ

NT = Not Tested

SPEEDIE AND ASSOCIATES

Log of Test Boring Number:

B-14

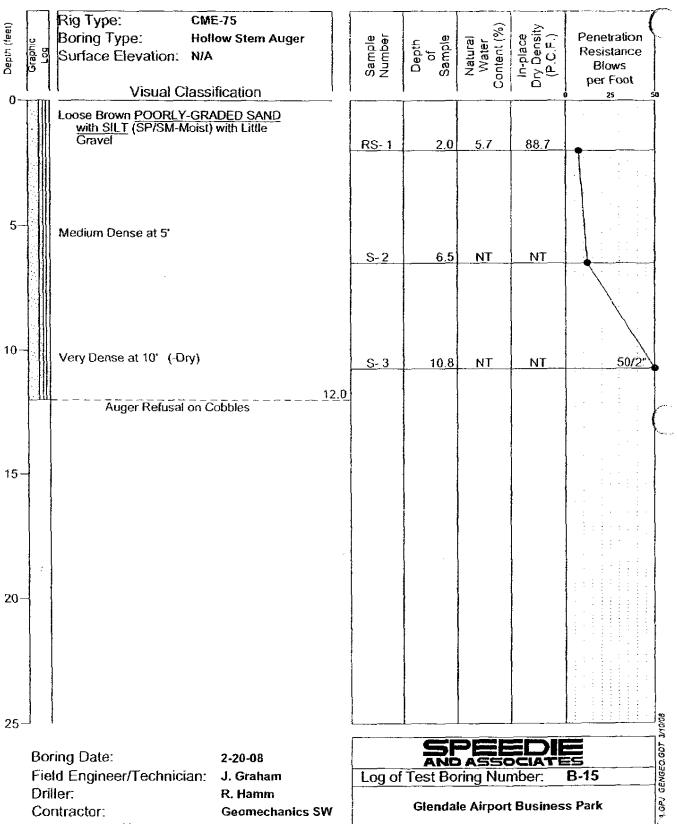
Glendale Airport Business Park

SEC of 115th Ave & Glendale Ave

Glendale, Arizona

Project No.: 080217SA

I A.GPJ GENGEO.GDT



Field Engineer/Technician:

J. Graham

Driller:

R. Hamm

Contractor:

Geomechanics SW

	Water Level			
Depth	Hour	Date	_	
Free Water was Not Encountered				
L		<u>.                                    </u>	Ī	

NT = Not Tested

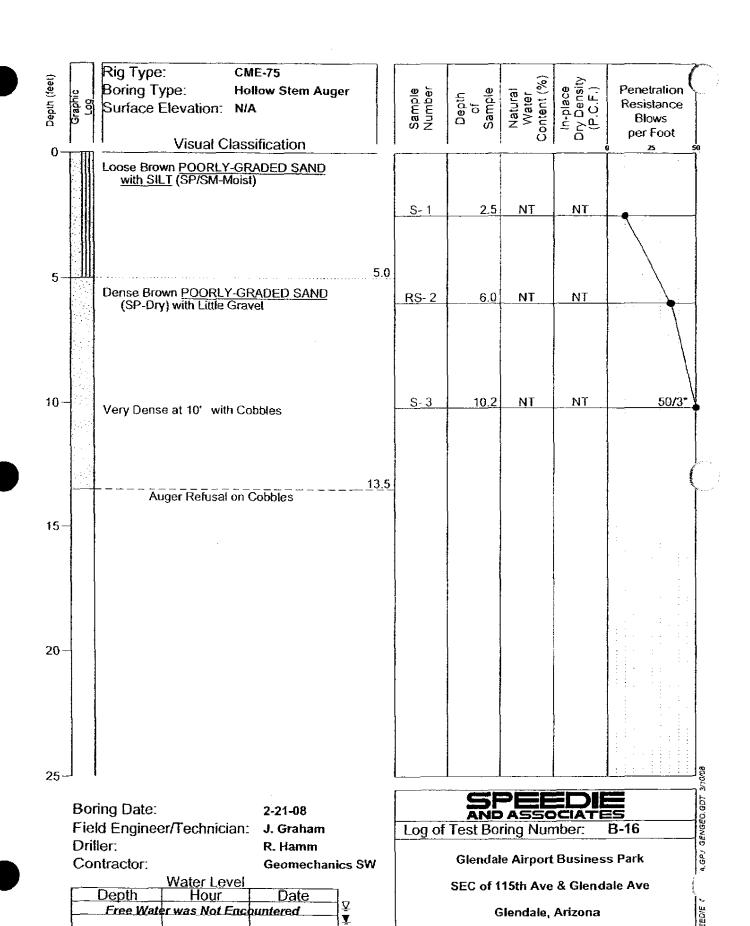
Log of Test Boring Number: B-15

Glendale Airport Business Park

SEC of 115th Ave & Glendale Ave

Glendale, Arizona

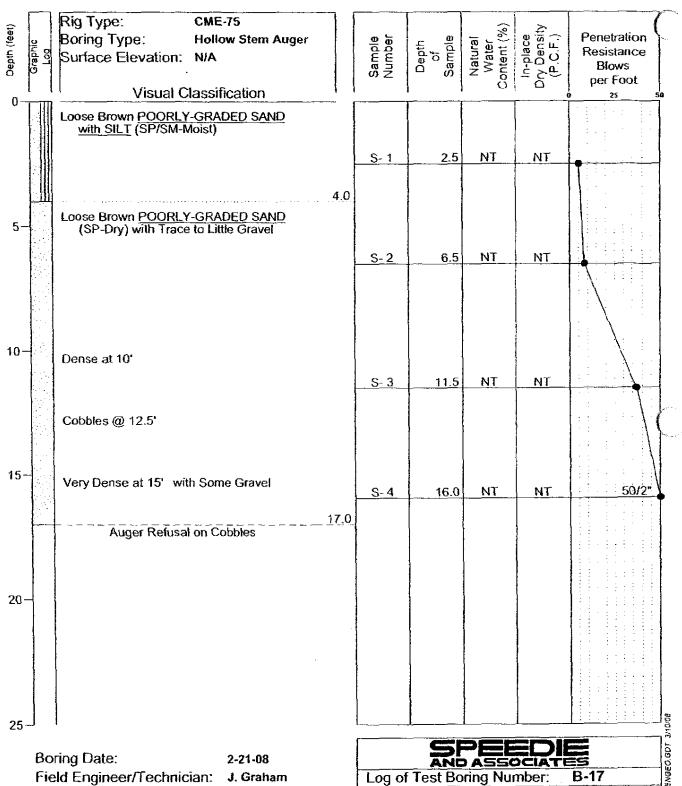
Project No.: 080217SA



Project No.:

080217SA

NT = Not Tested



Field Engineer/Technician:

J. Graham

Driller:

R. Hamm

Contractor:

Geomechanics SW

	Water Level			
Depth	Hour	Date	]_	
Free Water was Not Encountered				
L		1		
	NT = Not Tested			

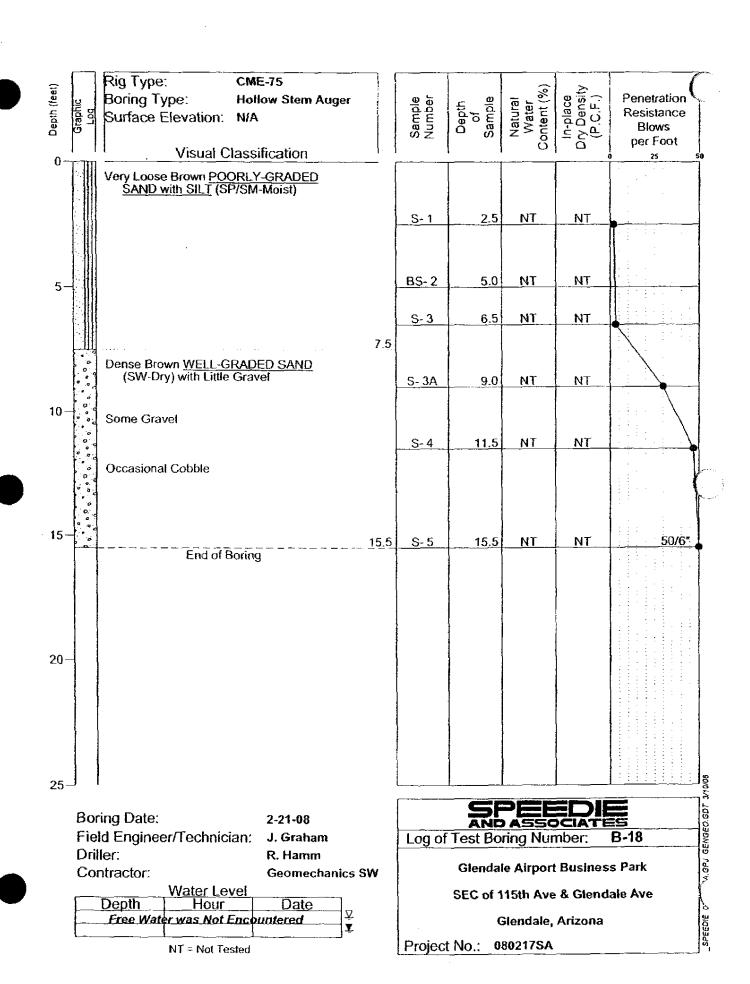
Glendale Airport Business Park

SEC of 115th Ave & Glendale Ave.

Glendale, Arizona

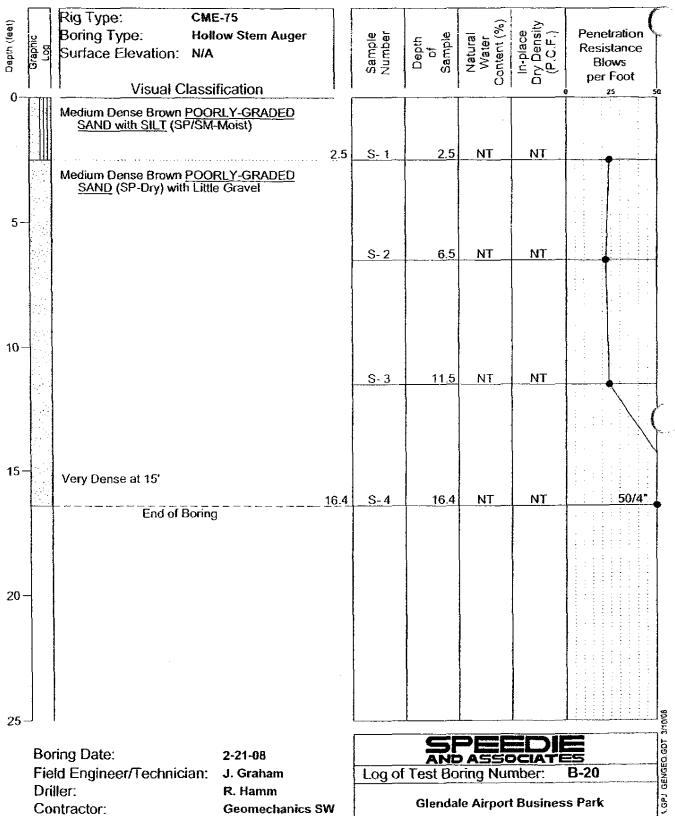
Project No.: 080217SA

A GPJ GENGEO GDT 3/10/08



Rig Type: CME-75 Boring Type: Hollow Stem Auger Surface Elevation: N/A		Sample Number	Depth of Sample	Natural Water Content (%)	In-place ry Density (P.C.F.)	Penetration Resistance
କୁ ବ୍ଲିମ୍ବ Surface Elevation: N/A		Sag	Deg Sarr	Nati Wa	c >er	Blows
Visual Classification		_		ပိ	ج <u>ح</u> ق	per Foot   zs so
Firm Brown SANDY SILTY CLAY (CL/ML-Moist)						
(CL/ML-Moist)		<u>R</u> S- 1	2.0	11.0	_77.7	
		No- 1	2.0	11.0	11.1	•
5	5.0					
Medium Dense Brown POORLY-GRADED SAND (SP-Dry) with Little Gravel		S- 2	6.5	NT	NT	
Trace Cobble						
Dense at 10'						
Dense at 10			44.5	AIT'	NIT	
		S-3	11.5	NT	NT	•
			ļ. 1			
						1
15-0						
Very Dense 15'						
End of Boring	<u>16.5</u>	S-4	16.5	NT	NT	62/12"
		İ				
20-				!		
			[ 			
25 _						10/08
Boring Date: 2-21-08			SF	PEE		900 3
Field Engineer/Technician: J. Graham		Log of	Test Bo		nber:	B-19
Driller: R. Hamm					Busines	B-19 S Park
Contractor: Geomechanics S  Water Level	W				& Glend	ı
Deoth Hour Date						ale Ave
Free Water was Not Encountered				ilendale,	Arizona	SPEEDIE OF
NT = Not Tested		Project	No.: 0	80217SA		

	Water Level		
Depth	Hour	Date	]_
Free Wate	r was Not Enc	untered	_]⊻
L			
	NT = Not Tested		



Field Engineer/Technician:

J. Graham

Driller:

R. Hamm

Contractor:

**Geomechanics SW** 

	Water Level		_
Depth	Hour	Date	]
Free Wate	r was Not Enc	untered	J¥
			Ţ

NT = Not Tested

Log of Test Boring Number:

B-20

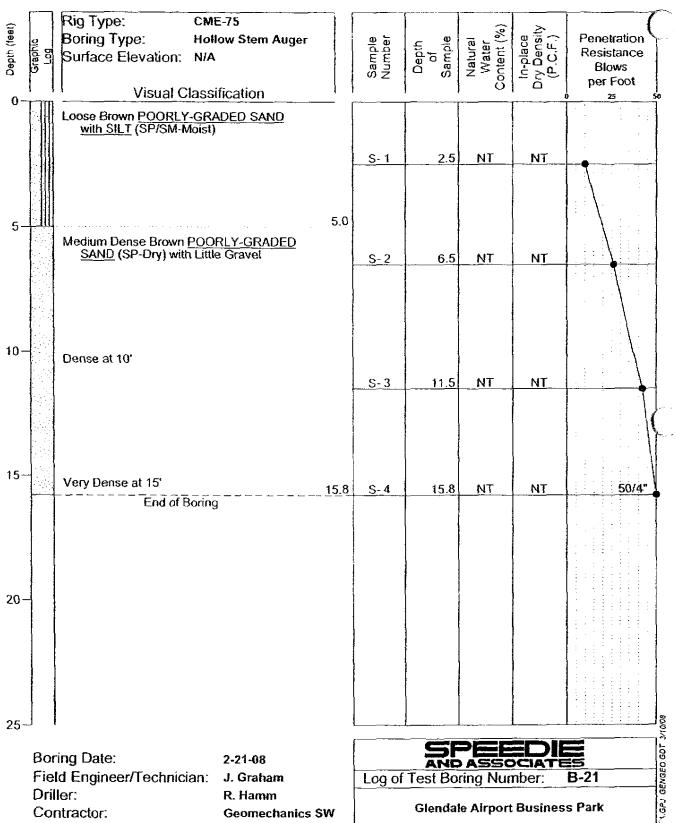
SPEEDIE OF

Glendale Airport Business Park

SEC of 115th Ave & Glendale Ave

Glendale, Arizona

Project No.: 080217SA



**Boring Date:** 

Field Engineer/Technician:

J. Graham

Driller:

R. Hamm

Contractor:

Geomechanics SW

	Water Level		
Depth	Hour	Date	_
Free Wate	r was Not Enci	ountered	Ψ.
<u> </u>			Ī.
	NT = Not Tested		

SPEED!

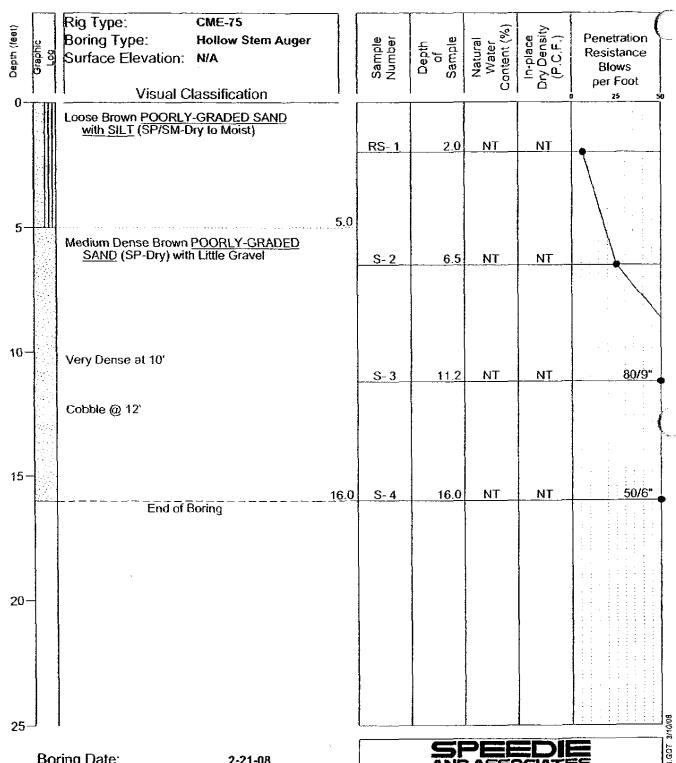
B-21 Log of Test Boring Number:

Glendale Airport Business Park

SEC of 115th Ave & Glendale Ave

Glendale, Arizona

Project No.: 080217SA



**Boring Date:** 

2-21-08

Field Engineer/Technician:

J. Graham

Driller:

R. Hamm

Contractor:

Geomechanics SW

	Water Level		
Depth	Hour	Date	_
Free Wate	r was Not Enc	ountered	Α̈́
L	L	L	<u>+</u>

NT = Not Tested

Log of Test Boring Number:

**B-22** 

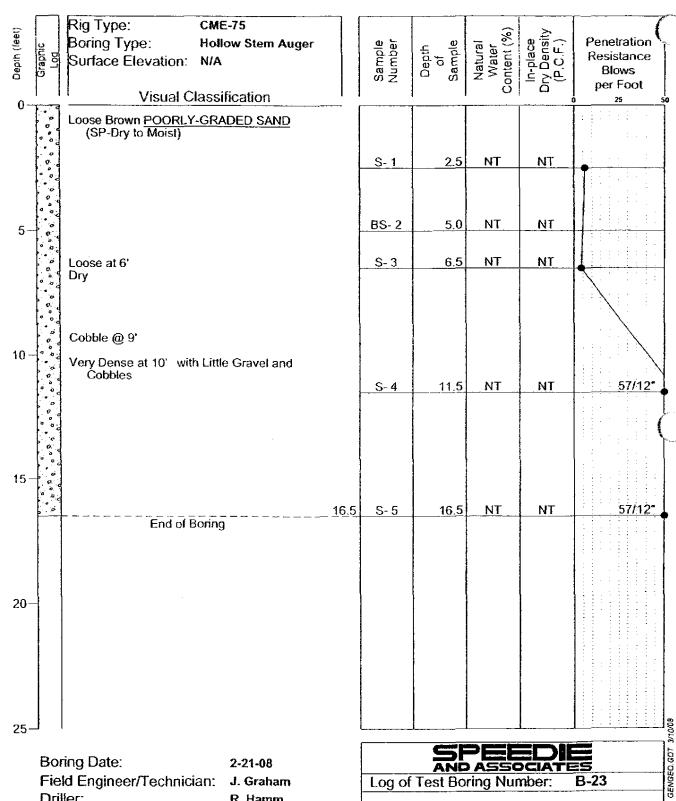
Glendale Airport Business Park

SEC of 115th Ave & Glendale Ave

Glendale, Arizona

Project No.: 080217SA

4 GPJ GENGED, GDT 3/10/08



Driller:

R. Hamm

Contractor:

Geomechanics SW

	Water Level		
Depth	Hour	Date	]_
Free Water	er was Not Enc	ountered	Ţ¥
Ĺ			Ţ

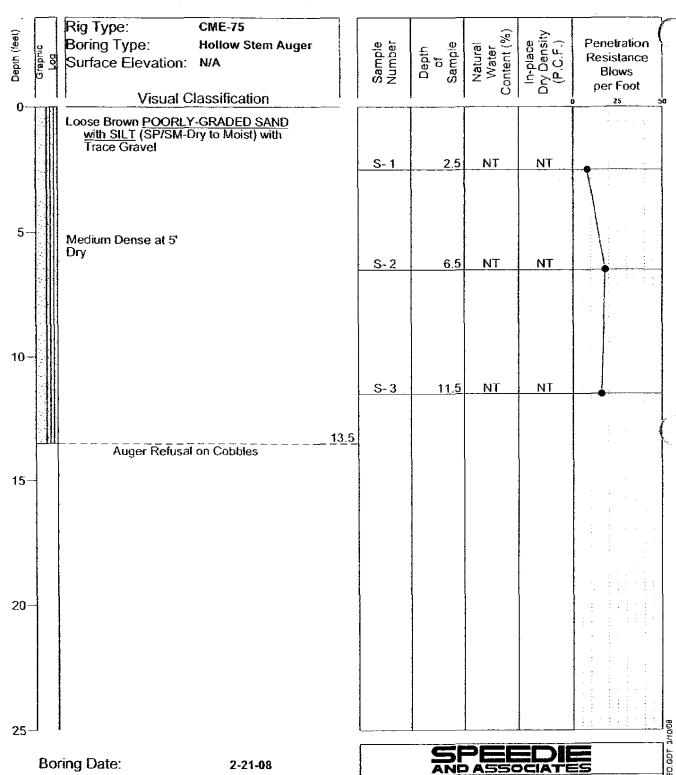
NT = Not Tested

Glendale Airport Business Park

SEC of 115th Ave & Glendale Ave

Glendale, Arizona

Project No.: 080217SA



Field Engineer/Technician:

J. Graham

Driller:

R. Hamm

Contractor:

Geomechanics SW

	Water Level		
Depth	Hour	Date	]_
Free Wate	er was Not Enc	ountered	]¥
L			Ţ

NT = Not Tested

Log of Test Boring Number:

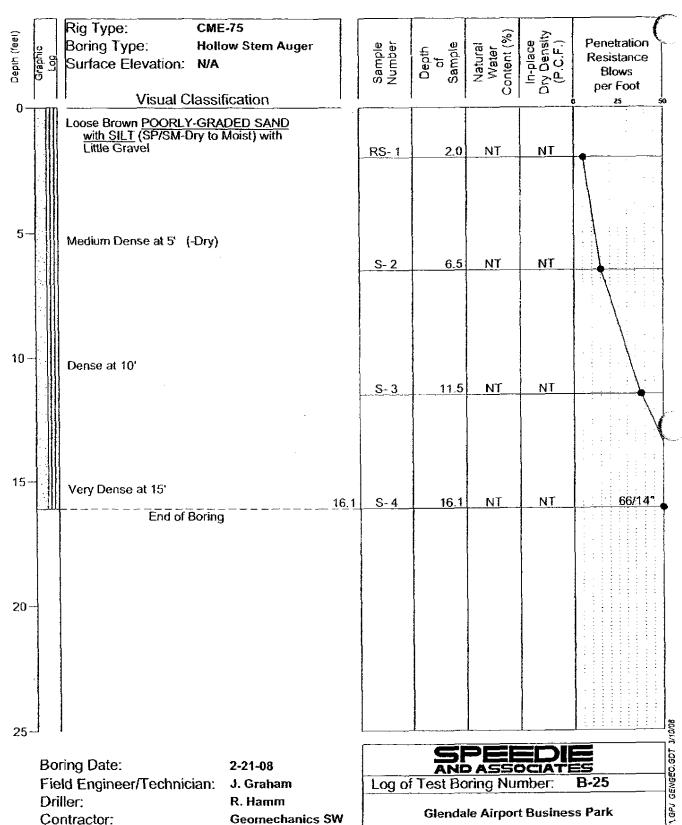
B-24

Glendale Airport Business Park

SEC of 115th Ave & Glendale Ave

Glendale, Arizona

Project No.: 080217SA



Driller:

R. Hamm

Contractor:

Geomechanics SW

	Water Level		
Depth	Hour	Date	]_
Free Wate	r was Not Enc	ountered	\ <u>Y</u>
L		<u> </u>	Ţ

NT = Not Tested

Glendale Airport Business Park

SEC of 115th Ave & Glendale Ave

Glendale, Arizona

Project No.: 080217SA

30/01/E	100 030N30	F#9	A2112080	ATAG T231	30	NOTALUBAT

			$I_f$	TABU			ATION O	Z		FJ	TE	EST		DATA	TA	
	·			ENT		PAR	PARTICLE SIZE DISTRIBUTION (Percent Finer)	E SIZE DISTR (Percent Finer)	STRIBU'	NOIT	ATTI	ATTERBERG LIMITS	36			
SOIL BORING OF	явили элам <b>у</b> з	SAMPLE TYPE	SAMPLE INTERVAL (ft)	NATURAL WATER CONT	IN-PLACE DRY DENSITY (Pounds Per Cubic Foot)	#500 SIEVE	#40 SIEVE	#10 SIEVE	#¢ SIEAE	3 SIEAE	LIQUID LIMIT	PLASTIC LIMIT	РГАЗТІСІТҮ ІМДЕХ	CLASSIFICATION UNIFIED SOIL	SPECIMEN	
ф -	RS- 1	RING	1.0 - 2.0	7.0	93.6	29	54	69	62	100	24	20	4	SC.SM	SILTY, CLAYEY SAND WITH GRAVEL	
B- 2	\$ 2	S	5.0 - 6.5	ž	۲	ო	€	1,4	Q1	100	호	<u>a</u> 2	g.	a O	POORLY GRADED GRAVEL WITH SAND	
e ம்	88.2	BULK	0.0 - 5.0	Ź	ž	os.	 66	95	16	100		ů Z	a Z	SP-SM	POORLY GRADED SAND with SILT	
8.4	RS-1	RING	1,0 - 2.0	0.6	93.7	59	80	100	001	100	<u>n</u> Z	ū. Ž	n Z	Σ	SANDY SILT	
αú	S.	S S	1.0 - 2.0	Ę	Ę	45	85	80	6	100		18	ო	S.	SILTY SAND	
α) σ <sub>0</sub>	BS-2	BULK	0.0 - 5.0	Ę	Ę	\$	<u>S</u>	88	£	100	ā.	<u>م</u>	ů Ž	SM	SILTY SAND	
B-10	RS.1	RING	1.0 - 2.0	8.8	95.7	28	82	100	100	100	ص م ک	ů Ž	<u>a</u> 2	SM	SILTY SAND	
11-0	\$ \$	SS	5.0 - 6.5	Ę	Ę	κο.	99	98	94	100	Ę.	n Ž	ů.	SP.SM	POORLY GRADED SAND with SILT	
B-13	s.	SNIS SNIS	1.0 - 2.0	£.	96.2	m	25	96	86	100		a Z	a Z	മ	POORLY GRADED SAND	
9 7	% ₹	S S S S	1.0 - 2.0	5,7	88.7	ഗ	99	98	66	001	ē.	a Ž	Q.	SP.SM	POORLY GRADED SAND with SILT	
B-18	88.2	BULK	0.0 - 5.0	۲N	۲	5	53	94	80	13	호	a Z	<u>a</u>	SP-SM	POORLY GRADED SAND With SILT	
8-19	RS-1	RING	1.0 - 2.0	11.0	77.7	පිරි	94	26	98	100	58	22	۲	CL-ML	SANDY SILTY CLAY	
B-22	RS-1	R S S	1.0 - 2.0	Ę	Ę	7	2	66	60	001	<u>R</u>	0 Z	a Z	SP.SM	POORLY GRADED SAND with SILT	
8-23	88-2	BULK	0.0 - 5.0	Ä	Ę	4	36	86	92	100	 ₽	a Z	a Z	a G	POORLY GRADED SAND	
8+25	%	ย	1.0 - 2.0	Ę	F Z	۲	ž	Ę	<u>+</u>	F Z	Ę		Ę			
Sieve a	Sieve analysis results do not include material greater actual boring logs for the possibility of cobble and bo	sults do no s for the p	t include 1	material gi of cobble a	reater tha	n 3". er size	than 3". Refer to the ulder sized materials.	the fals.	Gle SEC	Glendale Airport Business Park SEC of 115th Ave & Glendale Ave	sirport I	Busine R Gle	ss Par	× A eye		
NT=No Sheet	NT=Nov=sted									Andale, Arizona ect No. 080217SA	Arizona 08021	3 7.S.A	, 	!	AND ASSOCIATIS	
									1	5	)	j				

PROJECT:

Glendale Airport Business Park

PROJECT NO.: 080217SA

LOCATION:

SEC of 115th Ave & Glendale Ave

DATE: 2/20/08

BORING NO.: B-1

SAMPLE NO.: RS-1

SAMPLE DEPTH: 1 to 2

MT: 20

LABORATORY NO.: EF236

LIQUID LIMIT:

24

PLASTIC LIMIT:

PLASTICITY INDEX:

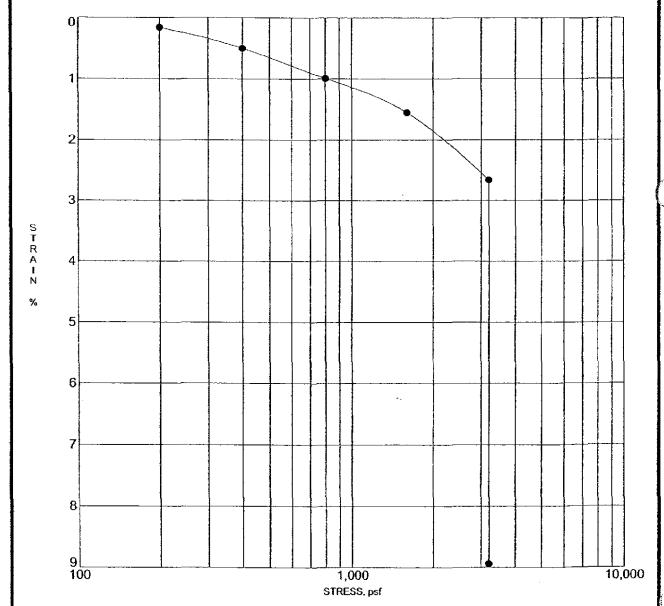
INDEX: 4

CLASSIFICATION:

SC-SM

ASTM SOIL DESCRIPTION:

SILTY, CLAYEY SAND with GRAVEL



Sample inundated at end of test at 3200 psf



" ON 0802175A.GPJ GENGEO.GDT 3/10/08

GEOTECH CONST

PROJECT:

Glendale Airport Business Park

PROJECT NO.: 080217SA

LOCATION:

SEC of 115th Ave & Glendale Ave

DATE: 2/20/08

BORING NO.: B-8

SAMPLE NO.: RS-1

SAMPLE DEPTH: 1 to 2

LABORATORY NO.: EF239

LIQUID LIMIT:

21

PLASTIC LIMIT:

PLASTICITY INDEX:

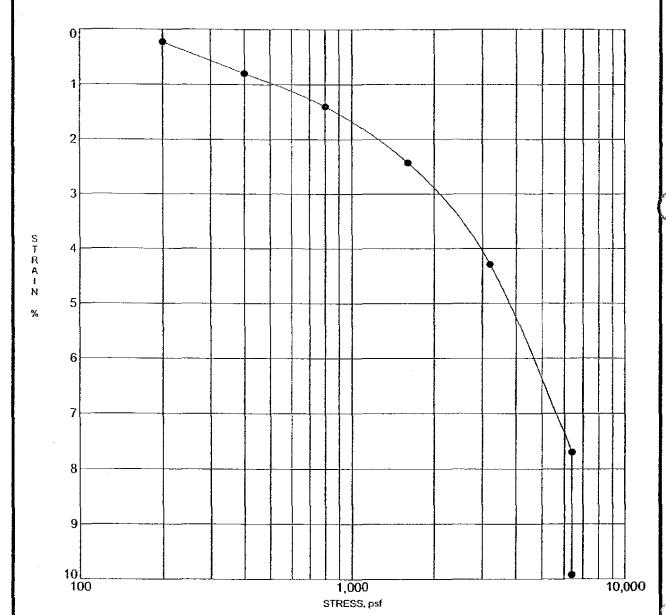
nev. 3

CLASSIFICATION:

SM

ASTM SOIL DESCRIPTION:

SILTY SAND



Sample inundated at end of test at 6400 psf

SPEEDIE AND ASSOCIATES

DN 0802175A.GPJ GENGEG.GDT 3/11/08

GEOTECH CONST

PROJECT:

Glendale Airport Business Park

PROJECT NO.: 080217SA

LOCATION:

SEC of 115th Ave & Glendale Ave

DATE: 2/20/08

BORING NO.: B-10

SAMPLE NO.: RS-1

SAMPLE DEPTH: 1 to 2

NT: NP

LABORATORY NO.: EF241

LIQUID LIMIT:

NP

PLASTIC LIMIT:

PLASTICITY INDEX:

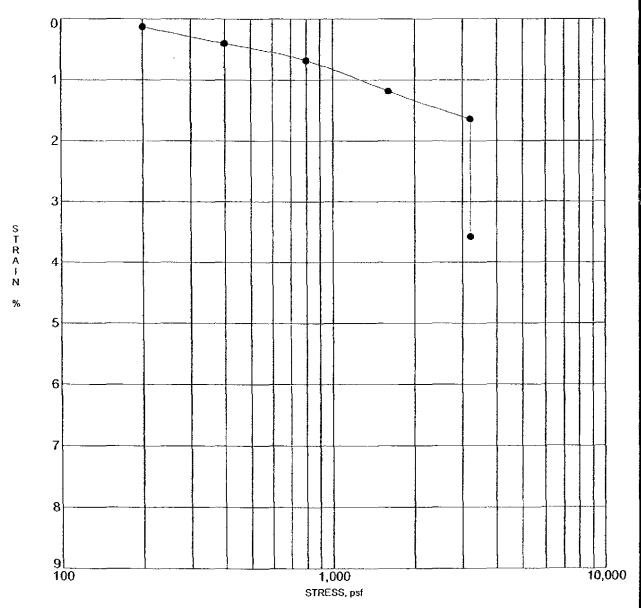
· NP

CLASSIFICATION:

SM

ASTM SOIL DESCRIPTION:

SILTY SAND



Sample inundated at end of test at 3200 psf



PROJECT:

Glendale Airport Business Park

PROJECT NO.: 080217SA

LOCATION:

STRAIN

SEC of 115th Ave & Glendale Ave

DATE: 2/20/08

BORING NO.: B-15

SAMPLE NO.: RS-1

SAMPLE DEPTH: 1 to 2

MIT: NP

LABORATORY NO.: EF243

LIQUID LIMIT:

NP

PLASTIC LIMIT:

PLASTICITY INDEX:

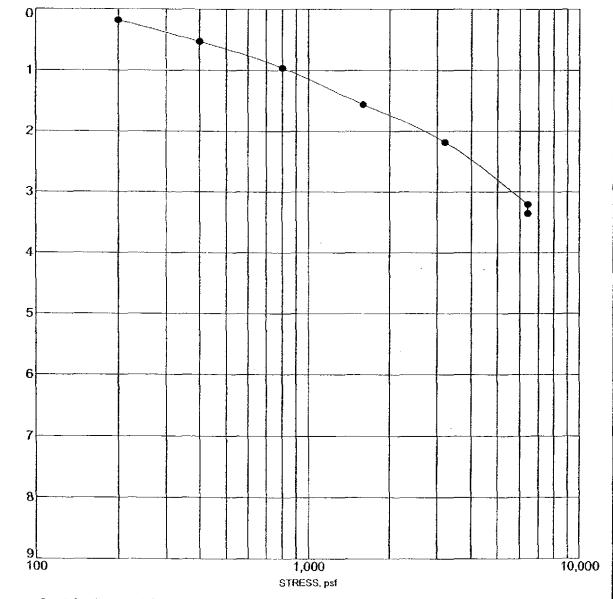
NP

**CLASSIFICATION:** 

SP-SM

ASTM SOIL DESCRIPTION:

POORLY GRADED SAND with SILT



Sample inundated at end of test at 3200 psf



GEOTECH CONST DN 0802115A.GPJ GENGED.GDT 370,008

PROJECT:

Glendale Airport Business Park

PROJECT NO.: 080217SA

LOCATION:

SEC of 115th Ave & Glendale Ave

DATE: 2/21/08

BORING NO.: B-19

SAMPLE NO.: RS-1

SAMPLE DEPTH: 1 to 2

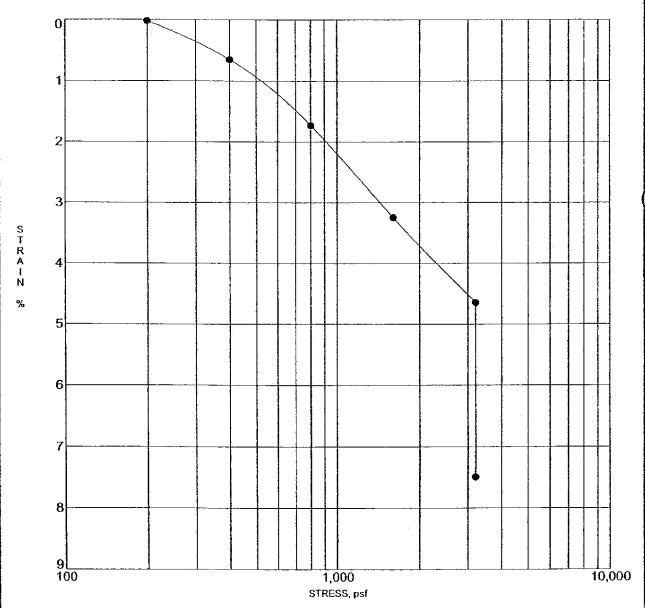
LABORATORY NO.: EF245

LIQUID LIMIT: CLASSIFICATION:

29 CL-ML PLASTIC LIMIT: 22 ASTM SOIL DESCRIPTION:

PLASTICITY INDEX:

SANDY SILTY CLAY



Sample inundated at end of test at 3200 psf

ION 0802175A.GPJ GENGEO.GOT J/10/08

PROJECT: Glendale Airport Business Park

PROJECT NO.: 080217SA

LOCATION:

SEC of 115th Ave & Glendale Ave

DATE: 2/21/08

BORING NO.: B-22

SAMPLE NO.: RS-1

SAMPLE DEPTH: 1 to 2

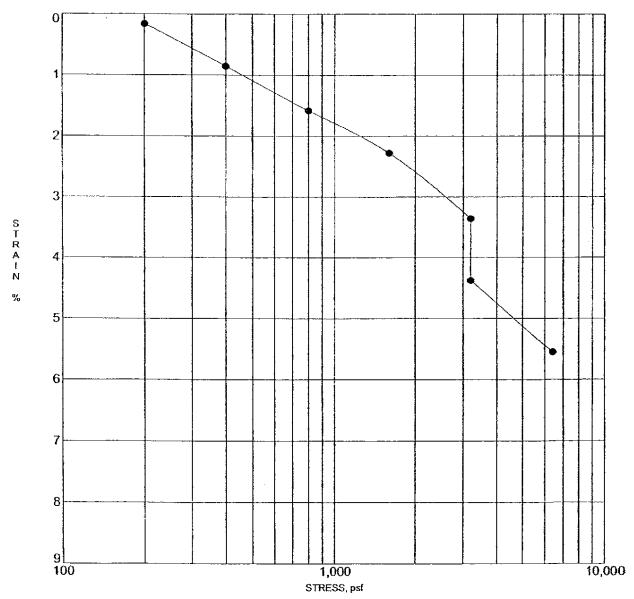
LABORATORY NO.: EF246 NDEX: NP

LIQUID LIMIT: CLASSIFICATION: NP

SP-SM

PLASTIC LIMIT: NP
ASTM SOIL DESCRIPTION:

PLASTICITY INDEX: NP
POORLY GRADED SAND with SILT



Sample inundated at end of test at 3200 psf

SPEEDIE AND ASSOCIATES

ON 080217SA.GPJ GENGEO.GDT 3/10/08

PROJECT:

Glendale Airport Business Park

PROJECT NO.: 080217SA

LOCATION:

SEC of 115th Ave & Glendale Ave

DATE: 2/21/08

BORING NO.: B-25

SAMPLE NO.: RS-1

SAMPLE DEPTH: 1 to 2

LABORATORY NO.: EF253

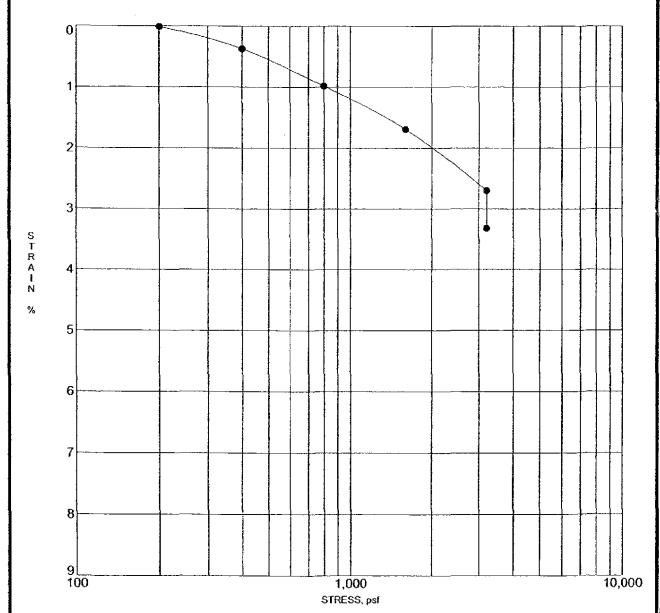
LIQUID LIMIT:

PLASTIC LIMIT:

PLASTICITY INDEX:

**CLASSIFICATION:** 

ASTM SOIL DESCRIPTION:



Sample inundated at end of test at 3200 psf

SPEEDIE AND ASSOCIATES GEOTECH CONS NOW 0802175A.GPJ GENGEO.GDT 3/10/08

# **MOISTURE-DENSITY RELATIONS**

NP

PROJECT:

Glendale Airport Business Park

PROJECT NO.: 080217SA

LOCATION:

SEC of 115th Ave & Glendale Ave

DATE: 2/20/08

BORING NO.: B-3

SAMPLE NO.: BS-2 SAMPLE DEPTH: 0 to 5 LABORATORY NO.: EF237

METHOD OF COMPACTION:

D698A

LIQUID LIMIT:

NP

PLASTIC LIMIT:

PLASTICITY INDEX:

CLASSIFICATION:

SP-SM

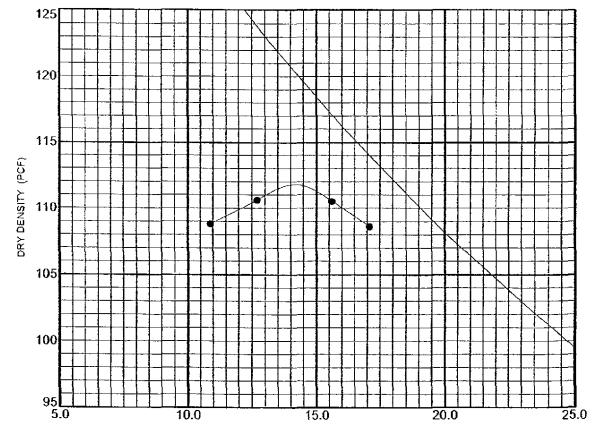
ASTM SOIL DESCRIPTION:

POORLY GRADED SAND with SILT

NP

MAXIMUM DRY DENSITY: 111.9 PCF

**OPTIMUM MOISTURE CONTENT: 14.2%** 



MOISTURE CONTENT (%)



## **MOISTURE-DENSITY RELATIONS**

PROJECT:

Glendale Airport Business Park

PROJECT NO.: 080217SA

LOCATION: SEC of 115th Ave & Glendale Ave

DATE: 2/20/08

BORING NO.: 8-9

SAMPLE NO.: BS-2

SAMPLE DEPTH: 0 to 5

LABORATORY NO.: EF240

METHOD OF COMPACTION:

D698A

LIQUID LIMIT:

NP

PLASTIC LIMIT:

NP

PLASTICITY INDEX:

NP

CLASSIFICATION:

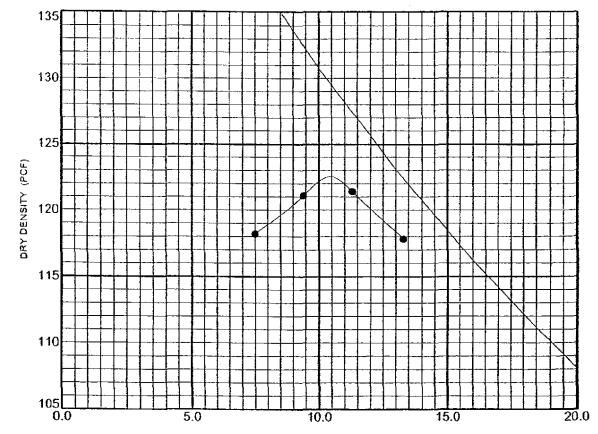
SM

ASTM SOIL DESCRIPTION:

SILTY SAND

MAXIMUM DRY DENSITY: 122.5 PCF

**OPTIMUM MOISTURE CONTENT: 10.5%** 



MOISTURE CONTENT (%)

# **MOISTURE-DENSITY RELATIONS**

SAMPLE DEPTH: 0 to 5

NP

PROJECT:

Glendale Airport Business Park

PROJECT NO.: 0802175A

LOCATION: SEC of 115th Ave & Glendale Ave

DATE: 2/21/08

BORING NO.: B-18

**LABORATORY NO.: EF244** 

METHOD OF COMPACTION:

D698A

SAMPLE NO.: BS-2

PLASTIC LIMIT:

PLASTICITY INDEX:

NP

CLASSIFICATION:

LIQUID LIMIT:

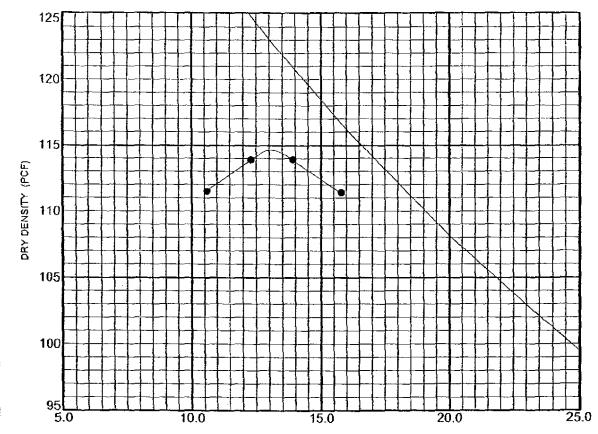
NP SP-SM

ASTM SOIL DESCRIPTION:

POORLY GRADED SAND with SILT

MAXIMUM DRY DENSITY: 114.7 PCF

**OPTIMUM MOISTURE CONTENT: 13.0%** 



MOISTURE CONTENT (%)

# SWELL TEST DATA

			1						
BORING or TEST PIT No.	SAMPLE DEPTH, ft	MAXIMUM DRY DENSITY (pcf)	OPTIMUM MOISTURE CONTENT (%)	REMOLDED DRY DENSITY (pcf)	INITIAL MOISTURE CONTENT (%)	PERCENT COMPACTION	FINAL MOISTURE CONTENT (%)	CONFINING LOAD (psf)	TOTAL SWELL (%)
B-3, BS-2	5.0	111.9	14.2	105.9	12.6	94.7	17.4	100	0.1
B-9, BS-2	5.0	122.5	10.5	117.0	8.2	95.5	13.3	100	1.0
B-18, BS-2	5.0	114.7	13.0	109.3	11.0	95.3	17.2	100	0.0
									•

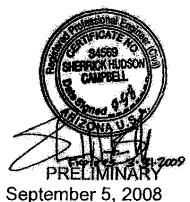
Glendale Airport Business Park SEC of 115th Ave & Glendale Ave Glendale, Arizona Ject No. 080217SA

SPEEDIE AND ASSOCIAZES

Sheet

# Copperwing at Glendale Airport

Glendale, Arizona



Prepared for: John F. Long Properties 5035 West Camelback Road Phoenix, Arizona 85063-4029

Submitted to: City of Glendale 5850 West Glendale Avenue Glendale, Arizona 85301

Prepared by: WRG Design Inc. 9977 North 90th Street, Suite 350 Scottsdale, AZ 85258 Phone: (602) 977-8000

WRG Project # ALT5917

## **Table of Contents**

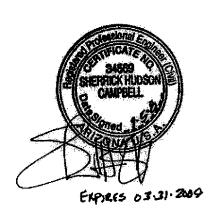
1.0	INTRODUCTION	1
1.1	General Background	1
1.2	Flood Insurance Rate Map	
2.0	PRE-DEVELOPMENT DRAINAGE CONDITIONS	3
3.0	POST DEVELOPMENT DRAINAGE CONDITIONS	4
4.0	CONCLUSIONS	. 5
5.0	REFERENCES	. 6
5.0	REFERENCES	

## **APPENDICES**

Appendix A Storm Water Storage Estimates
Appendix B Excerpts from Referenced Materials

## **EXHIBITS**

Exhibit – 1	Vicinity Map
Exhibit – 2	FEMA FIRM Map
Exhibit – 3	USGS Map
Exhibit – 4	Drainage Map



## 1.0 INTRODUCTION

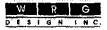
## 1.1 General Background

The purpose of this report is to provide a conceptual drainage master plan for the proposed Copperwing at Glendale Airport development. Copperwing at Glendale Airport is located at the southeast corner of 115<sup>th</sup> Avenue and Glendale Avenue, adjacent and west of the Glendale airport. More specifically, the property is located within Section 7, Township 2 North, Range 1 East of the Gila and Salt River Meridian. The net area of the parcel is approximately 316 acres. The location of the property is graphically illustrated in Exhibit 1 – Vicinity Map.

The proposed project, Copperwing at Glendale Airport, is to be developed as a master planned Business Park. Uses will include the following: Business Park, Hangar Condominiums, Commercial, Office, and Light Industrial. The proposed zoning is Planned Area Development (PAD).

This report is preliminary and conceptual in nature. No onsite hydrologic estimates or hydraulic conveyance calculations are included with this report. Final design of all drainage facilities are to be included in a more detailed supplement or supplements to this report and are to be submitted under separate cover.

This report is in accordance with our understanding of the criteria set forth by the City of Glendale 2002 Engineering Design and Construction Documents.



## 1.2 Flood Insurance Rate Map

The Maricopa County, Arizona and Incorporated Areas Flood Insurance Rate Map (FIRM) Panel Number 04013C1620H dated September 30, 2005 indicates that the Site lies within Zone "X" (Shaded). See Exhibit 2 for Site location and FIRM map information

The New River and Agua Fria River Special Flood Hazard Areas (SFHA) lie just east and west of the Site, respectively. See Exhibit 3 for locations of these SFHAs relative to the location of the Site.

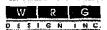


## 2.0 PRE-DEVELOPMENT DRAINAGE CONDITIONS

United States Geological Survey 7.5 minute quadrangle topography indicates that the Site generally drains from north to south. Refer to Exhibit 3 - USGS Map. As mentioned, the Agua Fria and New River SFHAs lie to the west and east of the property, respectively. The City of Glendale landfill lies immediately north of the Site and appears to provide storm water storage along its Glendale Road frontage, with outfall toward the Agua Fria River.

The Copperwing at Glendale Airport Site is located within the boundaries of the Glendale / Peoria Area Drainage Master Plan Update prepared on behalf of the Flood Control District of Maricopa County, in December of 2001. The Copperwing at Glendale Airport Site is located within the Youngtown portion of the watershed.

Field reconnaissance in conjunction with a review of the HEC-1 modeling included with the Glendale / Peoria ADMPU indicates that the Site does not appear to receive 100-year off-site flows originating north of the Site. Conveyance of localized peak flows produced within Glendale Road on the north, the 115<sup>th</sup> Avenue alignment on the west as well as Glen Harbor Boulevard on the east may, however, require consideration in future design. Excerpts from the Glendale / Peoria ADMPU identifying the watershed routing schematic in the vicinity of the Site is included in Appendix B – Excerpts from Referenced Material.



## 3.0 POST DEVELOPMENT DRAINAGE CONDITIONS

Due to the proximity of the Agua Fria and New River regional outfall SFHAs and based on a meeting and discussions with the City of Glendale on July 26, 2007, development of the Site is expected to include storm water storage for the first flush rainfall event. This rainfall event is defined by the Flood Control District of Maricopa County as 0.5 inches of runoff. However, conveyance of post-development condition 100-year peak flows is to be provided with the development of each parcel within the Site to a point of Site drainage outfall. Storm water storage volume for the 100-year, 2-hour storm is to be provided wherever development of the Site cannot provide conveyance of the 100-year post-development condition peak flow to a site outfall. Based on discussions with the City of Glendale, it is our understanding that the City of Glendale may allow for a drainage easement on property owned by the City of Glendale lying immediately south of the Site for the purposes of providing a drainage outfall for the development of the Copperwing at Glendale Airport Site. The design of this drainage outfall is to be included in a supplement to this report.

Estimates of first flush as well as 100-year, 2-hour storm water storage volume requirements are included in Appendix A – Storm Water Storage Estimates.



## 4.0 CONCLUSIONS

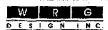
Based on the analysis presented in this Drainage Report, the following conclusions are drawn:

- 1. This drainage report is preliminary and conceptual in nature and is to serve as a guideline for the development of the Site. Final estimates of onsite and offsite peak flows, onsite storm water storage requirements, open channel design and hydraulics, storm drain hydraulics, and street flow capacity are to be included in a more detailed supplement (s) to this report and are to be submitted under separate cover.
- Field reconnaissance combined with review of the Glendale / Peoria ADMPU indicates that offsite flows originating north of the Site are diverted westerly toward the Agua Fria River SFHA.
- 3. Per discussions with the City of Glendale, the Copperwing at Glendale Airport Site is to provide storm water storage volume for the first flush event defined as 0.5 inches of runoff with conveyance of the expected 100-year post development condition peak flow to the Site drainage outfall.
- 4. It is our understanding that the City of Glendale may allow for the provision of a drainage easement on property owned by the City of Glendale lying immediately south of the Site in effort to provide drainage outfall for the Site's 100-year peak flow to the regional SFHA.
- 5. Ongoing maintenance of the drainage system is required to preserve the design integrity and function. It is the responsibility of the owner of the facility to provide maintenance and to ensure the drainage structure is functioning properly.



## 5.0 REFERENCES

- 1. Engineering Design and Construction Documents, City of Glendale, 2002.
- 2. Drainage Design Manual for Maricopa County, Arizona, Hydrology DRAFT, Flood Control District of Maricopa County, November 2003.
- 3. Drainage Design Manual for Maricopa County, Arizona, Hydraulics DRAFT, Flood Control District of Maricopa County, September 2003.
- 4. National Flood Insurance Program, Flood Insurance Rate Map Number 04013C1620H, Federal Emergency Management Agency, September 30, 2005.



APPENDIX A



# ESTIMATE OF FIRST FLUSH STORM WATER STORAGE REQUIREMENTS

CONTRIBUTING SUB-BASIN	AREA (ACRES)	P <sup>(2)</sup>	V <sub>R</sub> (CU. FT.)	V <sub>R</sub> (ACRE- FT.) 1.42		
The second secon	34.08	0.50	61,851			
2	17,47	0.50	31,711	0.73 0.76		
3	18.13	0.50	32,898			
_ 4	5.80	0.50	10,518	0.24		
5	7,47	0.50	13,550	0.31		
6	16.23	0.50	29,454	0.68		
7	28.80	0.50	52,263	1.20		
8	9,98	0.50	18,120	0.42		
9	25,58	0.50	46,432	1.07		
10	81.64	0.50	148,173	3.40		
11	47.99	0.50	87,098	2.00		
12	12.78	0.50	23,186	0.53		
13	10.88	0.50	19,740	0.45		
Sum	316.80		296,798	13		

#### Notes:

- 1. First flush storm water storage is being proposed for the development of the site, with 100-year drainage outfall to the adjacent regional outfalls. However, in instances where 100-year flow conveyance can not be provided, provision of 100-year, 2-hour storm water storage is required.
- 2. First flush stomwater storage is based on Flood Contol District of Maricopa County (FCDMC) criteria consisting of 0.5 inches of runoff.



# ESTIMATE OF 100-YEAR, 2-HOUR STORM WATER STORAGE REQUIREMENTS

CONTRIBUTING BASIN	SUB AREA (ACRES)	<b>C</b> <sup>(1)</sup>	P <sup>(2)</sup>	V <sub>R</sub> (CU. FT.)	V <sub>R</sub> (ACRE. FT.)
	34,08	0.95	2.60	303,933	6,98
2	17.47	0.95	2.60	155,827	3.58
3	18,13	0.95	2.60	161,661	3.71
4	5,80	0.95	2.60	51,688	1.19
5	7,47	0.95	2.60	66,587	1.53
6	16.23	0.95	2.60	144,738	3,32
7	28.80	0.95	2,60	256,821	5.90
8	9.98	0.95	2.60	89,043	2,04
9	25.58	0.82	2.60	196,779	4,52
10	81.64	0.82	2.60	627,958	14.42
	47.99	0,82	2.60	369,123	8.47
12	12.78	0.82	2.60	98,272	2.26
13	10.88	0.44	2.60	45,165	1.04
	Sum 316.80			1,427,077	59

#### Notes:

- 1. Runoff coefficients are preliminary and subject to change and may be aerially weighted based on more detailed land use infromation.
- 2. Precipitation value based on NOAA Atlas 2 Rainfall data.
- 3. First flush storm water storage is being proposed for the development of the site, with 100-year drainage outfall to the adjacent regional outfalls. However, in instances where 100-year flow conveyance can not be provided, provision of 100-year, 2-hour storm water storage is required.

Land Use Category	"C" Value			
Commercial	0,95			
Office	0.95			
Commercial/Office	0.95			
Buşiness Park	0.95			
Hangar Condos	0.82			
Light Industrial	0.82			
Open Space	0.44			
Streets	0.95			
Easements Open Space	0.44			
Taxiways	0.95			

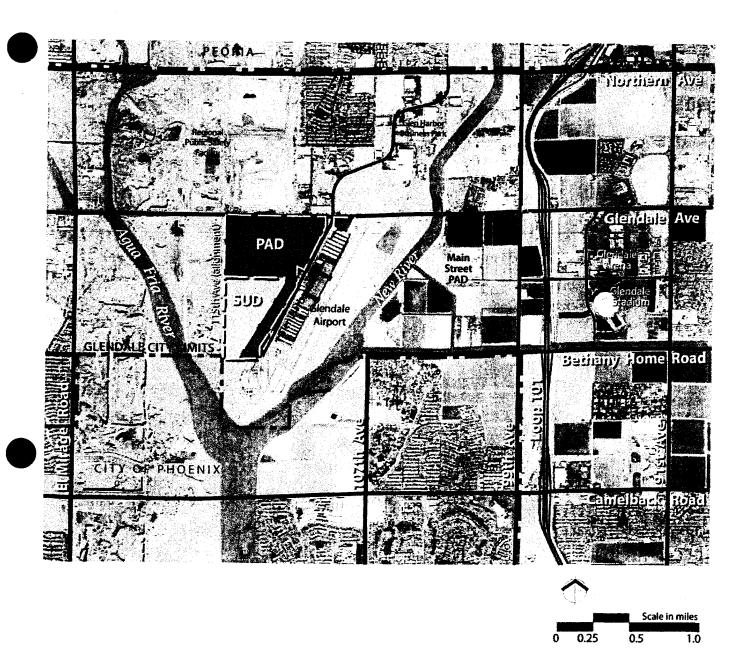
Table 3.2
RUNOFF COEFFICIENTS FOR MARICOPA COUNTY

Land Use Code	Land Use Category	Runoff Coefficients by Storm Frequency <sup>1, 2</sup>								
		2-10	2-10 Year		25 Year		50 Year		100 Year	
		min	max	min	max	min	max	min	max	
VLDR	Very Low Density Residential <sup>3</sup>	0.33	0.42	0.36	0.46	0.40	0.50	0.41	0.53	
LDR	Low Density Residential <sup>3</sup>	0.42	0.48	0,46	0.53	0.50	0.58	0.53	0.60	
MDR	Medium Density Residential <sup>3</sup>	0.48	0.65	0.53	0.72	0.58	0.78	0.60	0.82	
MFR	Multiple Family Residential <sup>3</sup>	0.65	0.75	0.72	0.83	0.78	0.90	0.82	0.94	
l1	Industrial 1 <sup>3</sup>	0.60	0.70	0.66	0.77	0.72	0.84	0.75	0.88	
<b>!2</b>	Industrial 2 <sup>3</sup>	0.70	0.80	0.77	0.88	0.84	0.95	0.88	0.95	
C1	Commercial 1 <sup>3</sup>	0.55	0.65	0.61	0.72	0.66	0.78	0.69	0.81	
C2	Commercial 2 <sup>3</sup> .	0.75	0.85	0.83	0.94	0.90	0.95	0.94	0.95	
Р	Pavement and Rooftops	0.75	0.85	0.83	0.94	0.90	0.95	0.94	0.95	
GR	Gravel Roadways & Shoulders	0.60	0.70	0.66	0.77	0.72	0.84	0.75	0.88	
AG	Agricultural	0.10	0.20	0.11	0.22	0.12	0.24	0.13	0.25	
LPC	Lawns/Parks/Cemeteries	0.10	0.25	0.11	0.28	0.12	0.30	0.13	0.31	
DL1	Desert Landscaping 1	0.55	0.85	0.61	0.94	0.66	0.95	0.69	0.95	
DL2	Desert Landscaping 2	0.30	0.40	0.33	0.44	0.36	0.48	0.38	0.50	
NDR	Undeveloped Desert Rangeland	0.30	0.40	0.33	0.44	0.36	0.48	0.38	0.50	
NHS	Hillslopes, Sonoran Desert	0.40	0.55	0.44	0.61	0.48	0.66	0.50	0.69	
NMT	Mountain Terrain	0.60	0.80	0.66	0.88	0.72	0.95	0.75	0.95	

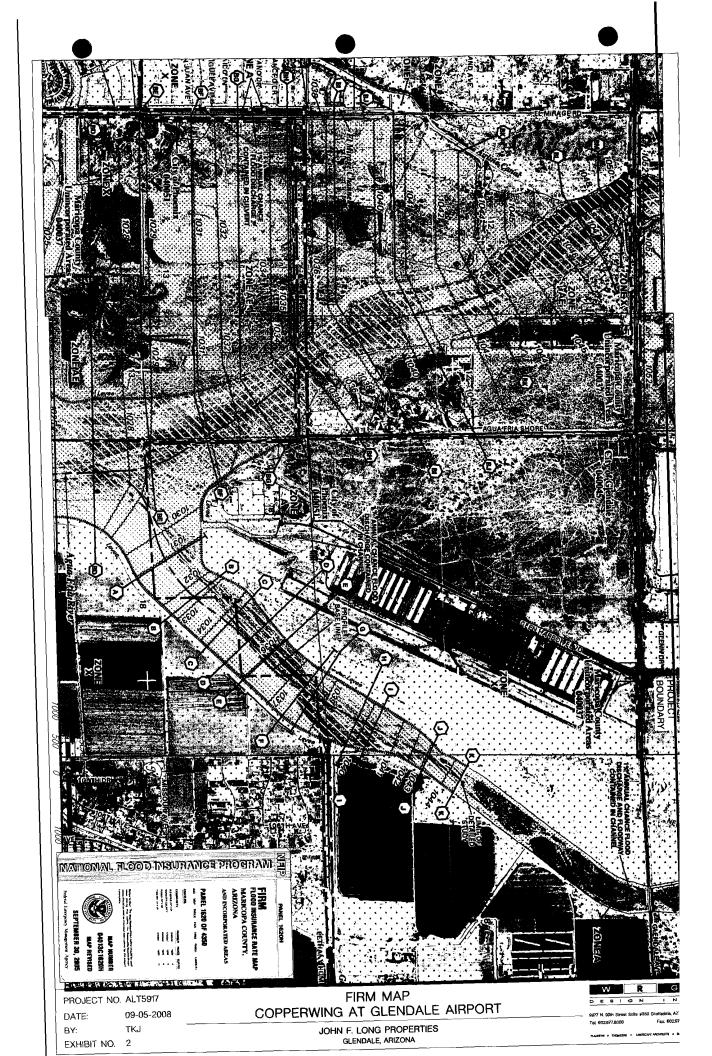
### Notes:

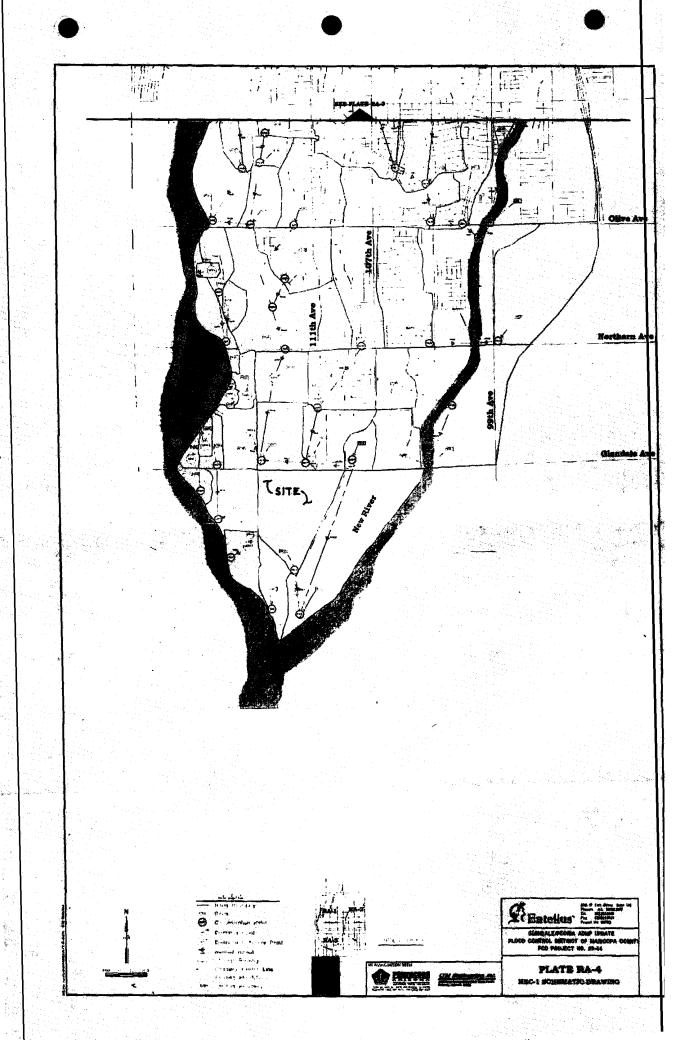
- 1. Runoff coefficients for 25-, 50- and 100-Year storm frequencies were derived using adjustment factors of 1.10, 1.20 and 1.25, respectively, applied to the 2-10 Year values with an upper limit of 0.95.
- 2. The ranges of runoff coefficients shown for urban land uses were derived from lot coverage standards specified in the zoning ordinances for Maricopa County.
- 3. Runoff coefficients for urban land uses are for lot coverage only and do not include the adjacent street and right-of-way, or alleys.

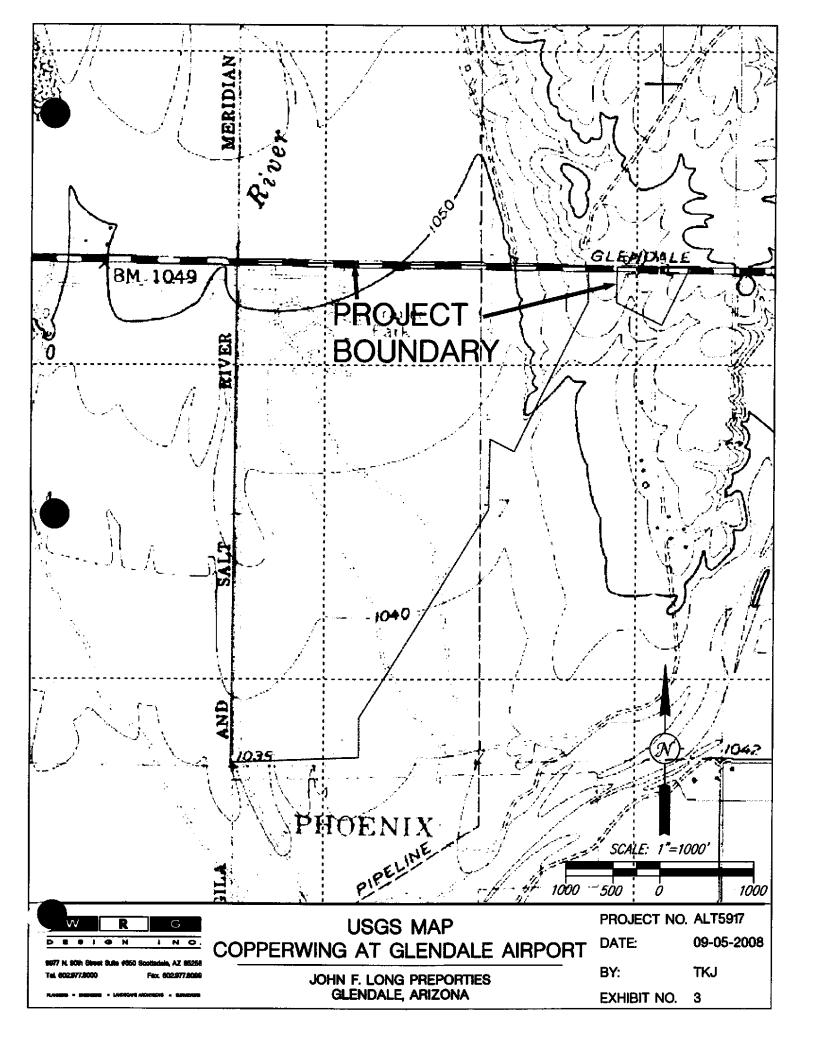
APPENDIX B

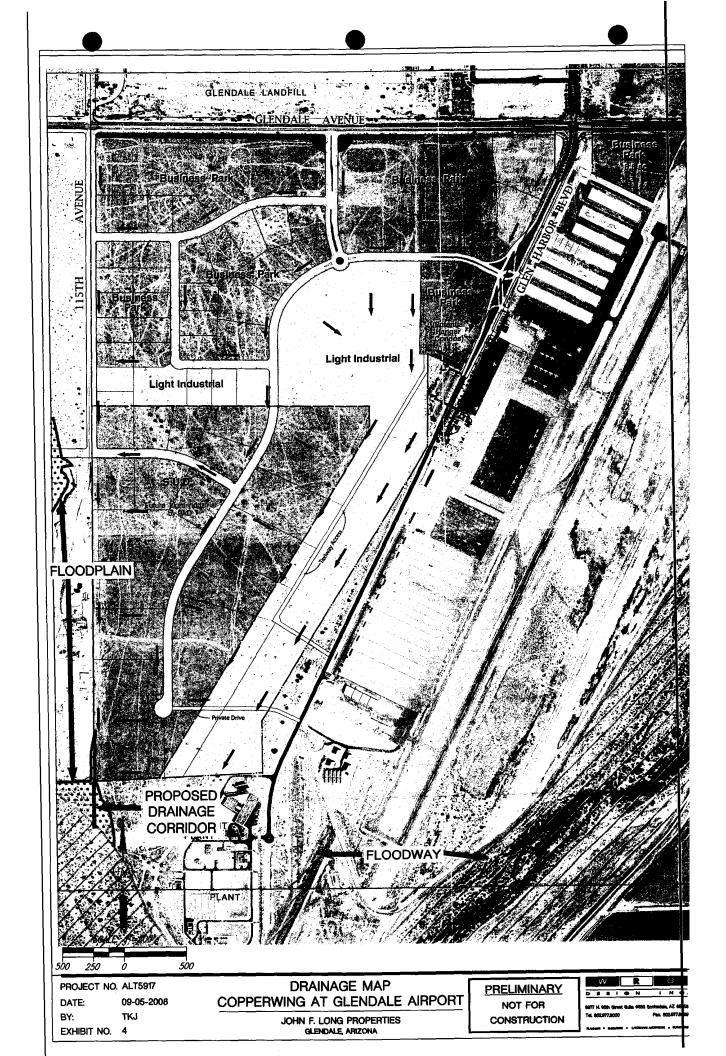












## Conceptual Water & Wastewater Report

September 5, 2008

# Copperwing at Glendale Airport Glendale, Arizona



**EXPIRES 9-30-10** 

Prepared For

John F. Long Properties 5035 W. Camelback Rd. Phoenix, AZ 85063-4029

Prepared By

WRG Design, Inc. 9977 N. 90<sup>th</sup> Street, Suite 350 Scottsdale, Arizona 85258

WRG Project #ALT5917

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1.0	INTRODUCTION
2.0	EXISTING WATER SYSTEM
3.0	PROPOSED WATER SYSTEM & DEMANDS
4.0	EXISTING WASTEWATER SYSTEM
5.0	PROPOSED WASTEWATER SYSTEM & FLOWS
<b>6.0</b>	REFERENCE

## LIST OF EXHIBITS

Exhibit 1

Exhibit 2

Vicinity Map Conceptual Utility Plan



**EXPIRES 9-30-10** 

### 1.0 INTRODUCTION

The purpose of this report is to provide a conceptual water and wastewater system plan for the proposed Copperwing at Glendale Airport development. Copperwing at Glendale Airport is at the southeast corner of 115<sup>th</sup> Avenue and Glendale Avenue, adjacent to and west of the Glendale Airport. The net area of the parcel is 316 ac. The proposed project is to be developed as a master planned Business Park. Uses will include the following mixed land uses: Business Park, Hangar Condos, Commercial, Office, and Light Industrial. The proposed zoning is Planned Area Development (PAD).

## 2.0 EXISTING WATER SYSTEM

The site is located in one pressure zone with the water distribution and 100-year water supply provided by the City of Glendale. There is an existing 12-inch diameter water main in Glendale Avenue, along the north boundary. There is also an existing 12-inch diameter water main in Glen Harbor Boulevard, along the east boundary.

### 3.0 PROPOSED WATER SYSTEM AND DEMANDS

The assumed average daily demand for the proposed land uses are as listed in Table 3.1. The maximum day factor is 1.65 times the average day demand and the peak hour factor is 2.64 times the average day demand. The required Fire Flow shall be City of Glendale requirements.

**Table 3.1 Water Demand Calculations** 

Land Use	Area (AC)*	Average Day Demand (gal/ac/day)	Average Day Demand (gpd)	Max Day Demand (gpd)	Peak Hour Demand (gpd)
Commercial	11.4	2,000	22,800	37,620	60,192
Office	35.1	2,000	70,200	 115, <b>83</b> 0	185,328
Commercial/ Office	26.0	2,000	52,000	85,800	137,280
Business Park	47.4	2,000	94,800	156,420	250,272
Hangar Condos	11.9	1,000	11,900	19,635	31,416
Light Industrial/ Warehousing	123.1	1,000	123,100	203,115	324,984
Total			374,800	618,420	989,472

<sup>\*</sup> Areas listed exclude area within Electric Transmission Line Easements.

All public water line materials shall be per City of Glendale requirements and installed at a depth of 36-inches or greater. Onsite fire hydrants will have a maximum spacing of 300-feet with at least one hydrant per 100,000 square feet of coverage. The valves will have a maximum spacing of 300-feet. The design criterion will be based on the City of Glendale Design Guidelines for Site Development and Infrastructure Construction and the ADEQ Engineering Bulletin No. 10.

### 4.0 EXISTING WASTEWATER SYSTEM

The City of Glendale Wastewater Treatment Plant is located adjacent to the site at the southeast corner. There is an existing 12-inch sanitary sewer line in Glen Harbor Boulevard that serves the Glendale Airport and properties to the north.

## 5.0 PROPOSED WASTEWATER SYSTEM AND FLOWS

The design criterion will be based on the City of Glendale Design Guidelines for Site Development and Infrastructure Construction and the ADEQ Engineering Bulletin No. 11. The assumed water average daily flow for the proposed land uses are as listed in Table 5.1. The Maximum Day peaking factor is four times the average day flow. The preferred design velocity is 2.5 feet per second (pipe flowing full). The maximum allowable velocity is 9 feet per second (pipe flowing full).

Table 5.1 Sewer Flow Calculations

Land Use	Area (AC)*	Average Daily Flow (gal/ac/day)	Average Daily Flow (gpd)	Max. Day Flow (gpd)
Commercial	11.4	2,000	22,800	91,200
Office	35.1	2,000	70,200	280,800
Commercial/ Office	26.0	2,000	52,000	208,000
Business Park	47.4	2,000	94,800	379,200
Hangar Condos	11.9	1,000	11,900	47,600
Light Industrial/ Warehousing	123.1	1,000	123,100	492,400
Total			374,800	1,499,200

<sup>\*</sup> Areas listed exclude area within Electric Transmission Line Easements.

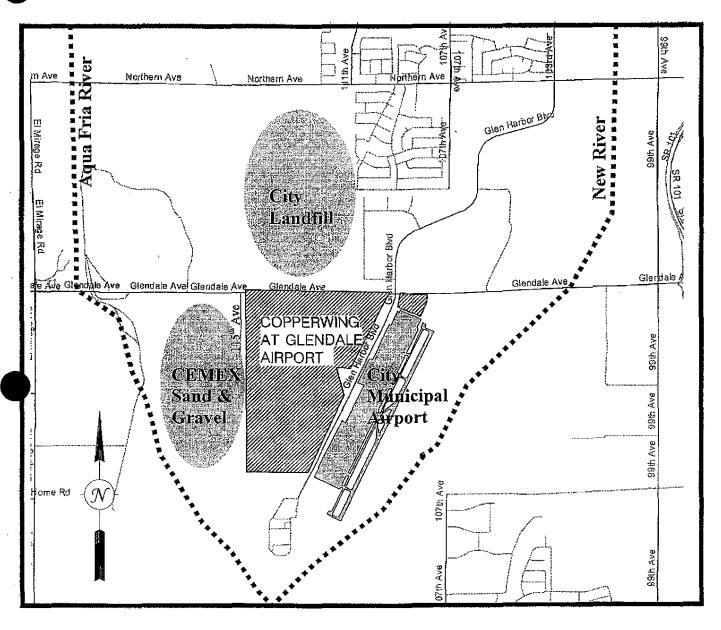
On-site sewer lines will be PVC SDR 35, installed typically at a depth of 5-feet or greater. Manholes shall be 5-foot in diameter with standard 24-inch frame and cover and have a maximum spacing of 400 feet for 8-inch or 10-inch sewers and 500 feet for 12-inch to 21 inch sewers.

The on-site sanitary sewer system will be designed to flow to the southeast corner of the site to a proposed lift station before entering the existing Wastewater Treatment Plant.

## 6.0 REFERENCES

- 1. City of Glendale Design Guidelines for Site Development and Infrastructure Construction, City of Glendale, dated June 2002.
- 2. Aquifer Protection Permit R18-9-E301. 4.01, by Arizona Department of Environmental Quality, dated January 1, 2001.
- 3. Engineering Bulletin No. 11, Chapter IV, by Arizona Department of Environmental Quality, dated July 1978.

**EXHIBITS** 



Vicinity Map



9977 N 90th Street Suite #350 Scottsdale, AZ 85258 Yel 602,977,8000 Fax. 602,977,8099

PLANNERS - FHOMEERS - LANDSCAPE ARCHITECTS - SUPPLEYORS

## VICINITY MAP COPPERWING AT GLENDALE AIRPORT

JOHN F. LONG PROPERTIES GLENDALE, ARIZONA PROJECT NO. ALT5917

DATE: 9-5-08

BY: JLU SCALE: NTS

SHEET NO. EXHIBIT #1



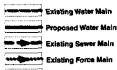






EXHIBIT T

Conceptual Master Water & Wastewater Plan

CASE # ZON08-14 & #ZON08-15 11401 W. GLENDALE AVENUE



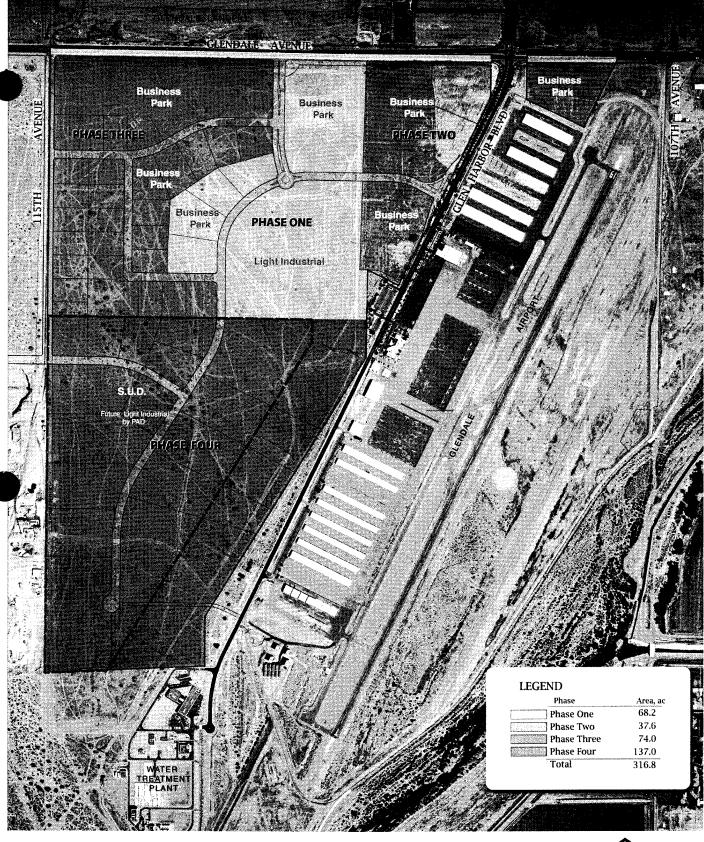




EXHIBIT **U** 

**Phasing Plan** 

CASE # ZON08-14 & #ZON08-15 11401 W. GLENDALE AVENUE



John F. Long THE

THEALTERGROUP



## City Design Review Process.

## Purpose.

- A. To promote development consistent with the City's goals of high quality.
- B. To ensure that development is compatible with the surrounding area.
- C. To ensure that on-site and off-site circulation is safe for both motorists and pedestrians.
- D. To ensure that all necessary public utilities and services are provided in an efficient and aesthetic manner.

## When Review is Required.

Design Review is required for single residence, multi-residence, office, commercial, and industrial projects if any one (1) of the following requirements is met:

- A. Any new development or construction.
- B. Any change in occupancy as classified by the Uniform Building Code.
- C. Any expansion of an existing site or building.
- D. Any remodeling of an existing use that alters at least twenty (20) percent of the floor area or site area.
- E. Any remodeling or improvement valued at fifty (50) percent or more of the value of the existing improvements on the site.
- F. Prior to occupancy or use of any commercial or industrial building or site which has been vacant for one (1) year or more.
- G. Any amendment to an approved design review plan.

## Minor Design Reviews and Waiver of Design Review.

Some projects such as single residences, may not need a complete review. The Planning Director may waive full Design Review if it is determined that such review will not further that purpose of this section.

### Submittal Requirements.

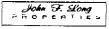
- A Design Review application shall contain:
- A. Completed application form and fee.
- B. A site plan.
- C. Building elevations.
- D. A conceptual landscape plan and grading and drainage plan.
- E. Materials and colors exhibit board.
- F. Proposed signage.



**EXHIBIT V** 



City Design Review Process



The technical information to be included with these items along with the appropriate number of copies of each is described in the application guidelines provided by the Planning Department. Additional information may be required depending on the scale and scope of the project.

## Review and Approval.

The City staff shall make the following findings in its evaluation of a project:

- A. The proposed development complies with all provisions of this ordinance and all other ordinances, master plans, general plans, goals, objectives and standards of the City of Glendale.
- B. The proposed site development plan's building heights, building locations, access points, and parking areas will not negatively impact adjacent properties or the surrounding neighborhood.
- C. The proposed development promotes a functional relationship of structures to one another, to open spaces, and to topography both on the site and in the surrounding neighborhood.
- D. The height, location, materials, color, texture, area, setbacks, and mass, as well as parts of any structure (buildings, walls, signs, lighting, etc.) and landscaping, is appropriate to the development, the neighborhood, and the community.
- E. Ingress, egress, internal and external traffic circulation, off-street parking facilities, loading and service areas, and pedestrian ways, is so designed as to promote safety and convenience.
- F. The architectural character of the proposed structures is in harmony with, and compatible to, structures in the neighboring environment and the architectural character desired for the city; avoiding excessive variety or monotonous repetition.
- G. All mechanical equipment, appurtenances and utility lines are concealed from view and integral to the building and site design.

#### Administrative Relief.

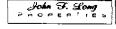
City development standards may be modified during the design review process by up to ten (10) percent of the required standard upon a finding that all of the following are met:

- A. The proposed improvement is compatible with the character of the property requesting relief and the adjacent property;
- B. The proposed improvement requiring relief will not be detrimental to the property requesting relief, any adjacent property or the City;
- C. The relief granted is the minimum required to meet the needs of the proposed improvement; and
- D. The relief shall not be contrary to the purpose and intent of this ordinance.



EXHIBIT V

City Design Review Process







## Denial and Appeal Procedure.

- A. If the Planning Director or his designee finds that the proposed project has not properly addressed one (1) of the review criteria or there are other technical deficiencies identified by other City staff reviewers, and adequate resolution of the issue(s) can not be ensured by the applicant, the Planning Director or his designee shall deny the Design Review Application and state the reasons for the denial in a letter to the applicant.
- B. The applicant may appeal the Planning Director's decision to the Planning Commission if that appeal, including appeal fee, is made in writing to the Planning Director within fifteen (15) days of the decision. The appeal letter shall describe the unresolved issues and describe what design solutions are proposed by the applicant. The applicant shall be notified of the date of the Planning Commission meeting to consider the appeal, a minimum of fifteen (15) days prior to the public meeting.
- C. The decision of the Planning Commission shall be final unless an appeal to the City Council is made by the applicant in writing to the Planning Director within fifteen (15) days of the Planning Commission's decision. The appeal letter shall state the reasons for the appeal and be accompanied by the required fee. The applicant shall be notified of the date of the City Council meeting to consider the appeal a minimum of fifteen (15) days prior to the public meeting.

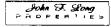
## Period of Approval.

Design review approval shall be valid for a period of one (1) year from the date of approval and shall become invalid if a building permit has not been issued in that time. Up to an additional one (1) year may be granted by the Planning Director upon written request by the applicant. The Planning Director shall grant the extension only upon a finding that special circumstances prevented the applicant from obtaining a building permit, and that no changes in City ordinances have occurred which would significantly alter the previous design review approval.



**EXHIBIT V** 



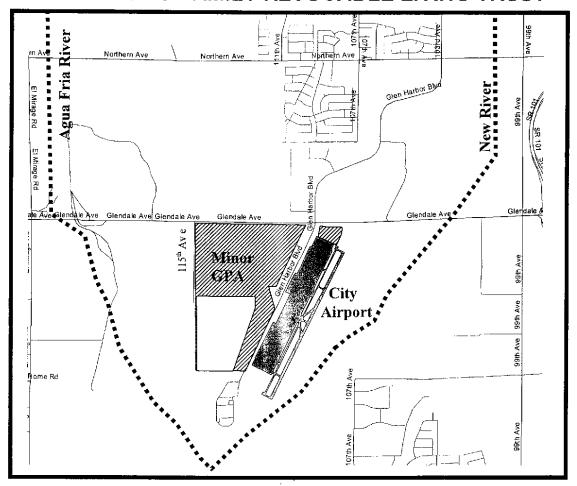








## JOHN F. LONG FAMILY REVOCABLE LIVING TRUST



## MINOR GENERAL PLAN AMENDMENT CITY OF GLENDALE, ARIZONA

11401 West Glendale Avenue Yucca District Case No. GPA08-09

Prepared by:

Gammage & Burnham Two North Central Avenue, Floor 18

Phoenix, AZ 85004 Tel: 602-256-4422 Fax: 602-256-4475

Contact: Stephen Anderson Job No. 2773-11

Submitted: November 17, 2008

Revised: December 31, 2008; February 20, 2009 July 17, 2009

## PROJECT NARRATIVE COPPERWING AT GLENDALE AIRPORT PAD MINOR GENERAL PLAN AMENDMENT

## Request:

The purpose of this application is to request a Minor General Plan Amendment from Light Industry to Business Park for the approximate 217.5 acres of the master planned development called Copperwing at Glendale Airport (the "PAD").

## Location:

The John F. Long Family Revocable Living Trust (the "Long family") owns 316.8 acres of undeveloped industrial property (the "Site") located at the southwest and southeast corner of Glendale Avenue and Glen Harbor Boulevard bounded by the Glendale Municipal Airport (the "Airport") to the east, 115<sup>th</sup> Avenue to the west, Glendale Avenue to the north, and the City West Area Reclamation Facility (the "WAWRF") to the south (see **Exhibit A**). The property is within the incorporated limits of the City of Glendale (the "City"). The areas generally west of 115<sup>th</sup> Avenue are within unincorporated Maricopa County.

## **Existing Zoning and General Plan Designation:**

The Site has M-1, Light Industrial, zoning. It is designated Light Industry on both the City General Plan (see Exhibit B) and City Western Area Plan. The City Western Area Plan is a specific plan of the City General Plan for the area generally bounded by 83<sup>rd</sup> Avenue on the east, 115<sup>th</sup> Avenue on the west, Northern Avenue on the north, and Camelback Road on the south. The Site lies fully within this Western Area Plan along its western edge, and identifies the west side of Loop 101 as an employment center called the "Airpark Character Area." The target market for the Airpark Character Area includes a mix of business park development, office, airport, light manufacturing, and commercial land uses which is exactly what Copperwing at Glendale Airport will provide this area of the City. Also, the Future Western Area Land Use Plan categorizes Business Park and Light Industry as one type of use. This is likely because both uses complement one another. The Western Area Plan recognizes that to foster desired economic growth the City needs to encourage flexibility and variation in uses and design. This is precisely the reason the Western Area Plan requires approval of a Development Master Plan. Approval of the Development Master Plan with this PAD will ensure development of Copperwing at Glendale Airport is not piecemeal and includes basic site guidelines that support the goals of the Western Area Plan.

## Vision/Objective:

2773.11.418376.4 7/15/2009

The Long family has owned the Site for over 40 years. It has been their vision for a master planned development of the entire Site with aviation-related uses and other non-aviation businesses that will benefit from the close proximity to the Airport. With the new development along the Loop 101 corridor and recent entitlement activity around the Airport and Loop 303 corridor, the Long family finds this an appropriate time to realize their vision for this Site. To that end, the Long family under a concurrent application is proposing a master planned development called Copperwing at Glendale Airport (the "PAD").

To respond to market conditions, the Long family requests to rezone 217.5 acres of the Site to PAD. Development of the 217.5 acres will occur in phases. The PAD will include approximately 79.5 acres of Planned Light Industrial development. Also, the PAD with 132.3 acres of Planned Business Park development will include commercial and retail. A concurrent application request, ZON08-14, was submitted in June 2008 to the City for this PAD. The remaining 99.3 acres will retain its Light Industry General Plan designation until such time there is a market for developing this property as a part of the PAD.

The Long family has an intermediate vision for the 99.3 acres of the Site while the PAD is under development. The Long family in June 2008 submitted a concurrent application request, ZON08-15, for a Special Use District Overlay to allow an interim phased mining and excavation use (the "SUD"). The benefit of this SUD includes its location within an area of the City north of two river beds adjacent to other similar uses and soil conditions ripe for a sand and gravel operation. The Long family has a longstanding practice of fiscal responsibility and self-financing when it comes to development. For over 40 years, they developed numerous projects in Arizona, with many of them in and around the City of Glendale. The interim sand and gravel operation will afford them a reliable mechanism to construct the necessary infrastructure and related elements for Copperwing at Glendale Airport. This will assure the City completion of the project.

As part of the application process for Copperwing at Glendale Airport, the Long family proposes annexation for portions of the right-of-way along 115<sup>th</sup> Avenue and portions of Glendale Avenue west of 115<sup>th</sup> Avenue on behalf of the City. A concurrent application request for annexation accompanies this Minor General Plan Amendment for Copperwing at Glendale Airport.

## Consistency with Existing Light Industry Designation:

The City General Plan describes the Light Industry designation as one which will "provide areas for the development and perpetuation of light industrial activity involving light manufacturing, assembling, warehousing, and wholesale activities and the associated office space and support uses." It further states that the Industrial designations "are typically characterized as development that due

to noise, smell, or some other special consideration are not appropriate for a Business Park." Except for a few minor clarifications, the Planned Light Industrial category of the PAD allows most of the traditional uses of the City M-1, Light Industrial, zoning district. These clarifications include allowing commercial aviation businesses, commercial kennels, animal shelters, and veterinary hospitals with outdoor boarding and exercise facilities. Although the Planned Light Industrial category is compatible to the Light Industry General Plan designation, at 79.5 acres, it makes up a smaller portion of the 219.5-acre PAD, requiring a Minor General Plan Amendment over the entire PAD.

## Requested Change from Light Industry to Business Park Designation:

The City General Plan describes the Business Park designation as one which will "provide for the development and accommodation of administrative and research industries, offices, and limited manufacturing and support services." The Planned Business Park category of the PAD is a blend of the traditional uses of the City B-P, Business Park, zoning district together with some of the traditional uses of the City C-2, General Commercial, zoning district.

The Business Park designation is appropriate for the uses proposed in the PAD for several reasons. The allowable uses are traditional uses one finds in a business park zoning development. The mix of proposed uses will allow for varying scale and intensity of employment uses within a planned setting regulated by the PAD architectural and design standards. The City General Plan indicates that "Business Parks are intended to provide an efficient circulation system and reduce trip generation/vehicular traffic off-site by development and perpetuation of mixed-use activity within the project." The inclusion of the service and retail uses typically found in the City C-2 District will achieve this desired mixed-use activity.

The Minor General Plan Amendment responds to a change in conditions from those that existed in 2002 or earlier when the City designated this Site as Light Industry. The Site adjoins 115<sup>th</sup> Avenue, which according to the City General Plan and City policies acted as the western reaches of the City as far as development planning for many years. However, not unlike the General Plan and rezoning changes along the Loop 101 corridor and the 2005 Major General Plan Amendment changing tracts of land along the Loop 303 corridor for Entertainment Mixed Use, the Site no longer falls under the conditions of that time or its anticipated development assumptions. Besides the long-standing sand and gravel, salt production, landfill, Airport, and other heavy industrial uses, development interest for the land between Luke Air Force base and Loop 101 is starting to take shape. Among these developments are:

 The Glendale Public Safety Training Facility built in 2007. This use with its outdoor training activities is consistent with its Heavy Industry

- designation. However, the office component along Glendale Avenue is similar to a business park development. The proposed Planned Business Park uses of the PAD on the south side of Glendale Avenue will complement this Training Facility and the existing Glendale Airpark on the north side of Glendale Avenue. The proposed Business Park designation will provide a similar transition of business parks and commercial uses close to Glendale Avenue with light to heavy industrial uses further away from Glendale Avenue.
- 2. Rightpath Main Street approved in 2007. The General Plan designation of this 166-acre development located between Glendale Avenue and Maryland Avenue west of Loop 101 has a Business Park designation. Yet, the approved development is a mix of business park uses, resort hotel with an allowable density of 2,500 dwelling units, and commercial service and retail uses that may include mixed use residential. The inclusion of the Business Park designation at Copperwing at Glendale Airport will essentially transfer the business park uses lost in this area by the amount of residential and commercial service and retail of the Main Street development.
- 3. Desert River approved in 2008. The General Plan designation of this 110-acre development located along 99<sup>th</sup> Avenue north of Glendale Avenue is Business Park. Yet, the approved development contains 30 acres of Mixed-Use/Commercial with allowable retail uses up to 35-percent of the site area. This is another project demonstrating that the purely business park uses originally envisioned are not the land uses shaping the property between Loop 101 and Luke Air Force base in the vicinity of Glendale Avenue.
- 4. Glendale Spring Training Facility. This 151-acre site includes a training facility under construction for the White Sox and Dodgers. Although located in Phoenix, it is owned by the City and sits south of the City Airport. Phoenix originally designated this land for open space and residential. However, the proposed use is for entertainment and commercial/residential mixed use.
- 5. <u>Rightpath Aviation Center</u>. This 142-acre development adjoins the City Airport to the east. It is zoned Light Industrial and has a General Plan designation of Light Industry and Public Facility. Copperwing at Glendale Airport will complement this Aviation Center.
- 6. El Paso Natural Gas Site. The City since 2004 is in process of reviewing a Major General Plan Amendment for approximately 465 acres of land north along Glendale Avenue between El Mirage Road and Dysart Road. If approved, this will remove many acres of Heavy Industry designated property for business park and light industrial uses. The requested minor General Plan Amendment for Copperwing at Glendale Airport is consistent with this shift to slightly less intense uses along the Glendale Avenue corridor between Luke Air Force base and the Loop 101.

## Compliance with Goals of the General Plan and Western Area Plan:

The City General Plan and Western Area Plan establish several goals that work together to advance the City vision for an all-encompassing balance with an emphasis on economic vitality. Copperwing at Glendale Airport through approval of the various application requests will meet or exceed many of the City General Plan and Western Area Plan goals as described below.

## Municipal Development Elements, General Plan, Land Use Element

"Promote sound growth management methods." (Goal 2)

The PAD will develop along existing transportation and infrastructure corridors, minimizing additional construction resource demands and assures sufficient infrastructure is in place. The mix of light industrial, business park development and commercial uses will offer an employment-generating mixed use development. The project location away from existing and planned residential uses and other similar light industrial and business park uses promotes compatible land uses.

"Create transition and buffer areas." (Goal 3)

The location of the Planned Business Park uses closer to Glendale Avenue and the Planned Light Industrial uses further south near the WAWRF and Airport establishes higher employment density along the existing transportation corridors away from the Airport operations. This assures compatible uses and densities around Luke Air Force base and the Airport. The existing high-voltage electric transmission corridor adjacent to the Airport on the Site at 460 feet in width establishes an additional buffer as it will restrict location of certain structures and uses underneath the transmission lines. Also, the transmission lines already create an aviation hazard higher than the proposed heights within the PAD, shifting aviation activity and noise east of the site.

## General Plan, Circulation Element

"Provide mobility with safe, cost-effective transportation systems." (Goal 1)

The internal and any exterior roadway improvements associated with Copperwing at Glendale Airport will be in accordance with all safety standards. The construction of an alternative roadway through the PAD south on Glen Harbor Boulevard will provide an alternate means of ingress and egress that will benefit the Airport during normal operation and emergencies should a blockage occur at the intersection of Glen Harbor and Glendale Avenue.

"Utilize the transportation system to foster a strong economy." (Goal 5)

The PAD will improve the streetscape along almost 3,500 lineal feet of Glendale Avenue. It will provide both a visual and economic enhancement with new businesses that will encourage development in the area, including expanding aviation activity at the Airport.

## Public Assets Elements, General Plan, Economic Development Element

"Accelerate economic growth at a higher rate than population." (Goal 1)

The proposed non-residential uses in the PAD will provide increased job choice for the estimated 78,000 residents within the City planning area by 2025; half of this population growth expected around and between the Loop 101 to Loop 303 corridors. According to the City General Plan, the City Western Growth Area is anticipated to accommodate two-thirds of the added population and jobs, and nearly half of the City's commercial development by 2025.

"Encourage business growth for in-City job opportunities." (Goal 2)

The commercial and employment generating uses proposed at Copperwing at Glendale Airport include office, light industrial, business park development, and commercial services that will provide jobs to the multiple wage-earner households within the City and residents of the developments nearby, including Country Meadows, Right Path Main Street, Centrada, CBD 101, among others. Its location along the public transit corridor of Glendale Avenue and nearby Loop 101 will provide City residents easy access to these employment opportunities.

"Attract diverse, high-paying industries." (Goal 3)

The emphasis in the PAD on technical and professional industries will add to the overall Glendale economy. The variety of uses within the PAD besides traditional light industrial will minimize dependence on any one single type of industry and encourage a variety of light industrial, business park development, office, research, production, and commercial businesses.

"Sustain aviation activities." (General Plan, Economic Development, Goal 4)

Copperwing at Glendale Airport will sustain aviation activities by providing increased opportunity for corporate use of Airport facilities including executive and recreational transportation via the businesses choosing to locate at Copperwing at Glendale Airport.

## Quality of Life Elements, General Plan, Safety Element

"Develop programs to maintain and improve aviation safety." (Goal 4)

Copperwing at Glendale Airport places the Business Park uses closer to Glendale Avenue and Glen Harbor Boulevard north of the City Airport terminal parking. This will provide for higher employment density near the major transportation routes and away from airfield operations, maintaining appropriate safety and noise attenuation.

## Growing Smarter Plus Elements, Growth Areas Element

"Secure employment in well-paying jobs in high quality business and commerce park developments." (Goal 1)

The employment focus at Copperwing at Glendale Airport coupled with its location adjoining the City Airport will provide skilled, technical and professional occupations to the overall Glendale economy looking to relocate, enlarge, or start a new business in the City. The PAD will allow many of the growth industries within the State of Arizona. Such industries include aviation-related manufacturing and services, computer systems design, electronic markets, hardware and plumbing merchant wholesalers, HVAC and commercial refrigeration, and transportation industries to list a few.

There are several amenities within the PAD that will facilitate employment site selection to attract global, national and regional corporate facilities as well as expansion opportunities for existing Glendale businesses. The commercial and retail component of the PAD will allow development of stop-over services as convenience uses, hospitality, ground transportation services, dining, and other related retail uses typically found adjoining airports. The PAD may include rental car facilities, hotels with bars and restaurants, dry cleaners, and other such amenities within close proximity to the employment uses within the PAD, Glendale Airpark, and other employment uses in the Western Growth Area. The mix of allowable uses will allow for increased opportunity of direct, indirect and induced capture of tax revenue.

"Identify specific locations and provide infrastructure for growth nodes." (Goal 2)

Development of the PAD will occur along Glendale Avenue and approximately one mile west of Loop 101. Both roadways are transportation corridors with traffic capacities capable of handling new development. The PAD location east of 115<sup>th</sup> Avenue is within the infrastructure service area identified by the City as serviceable. The site adjoins three major public service uses of the City landfill, WAWRF, and

City Airport that will reduce trip generation and conserve resources. Development of this PAD will provide infrastructure and buildings readily available for future employers.

## Western Area Plan Goals

"Build a strong employment base that provides a variety of high paying jobs for Glendale residents." (Goal 1)

The entire PAD is in employment generating uses that will improve the City's jobs-to-housing ratio and lessen the City becoming a bedroom community. The allowable uses within the PAD include a variety of light industrial, business park development, and general commercial that will provide a range of good paying jobs to the community to counteract cyclical downturns.

"Expand major retail opportunities to serve residents of Glendale and the surrounding area." (Goal 2)

The residents and employees living or working in the western portion of the City planning area have limited access to goods and services due to the agricultural and industrial nature of this area. The retail uses proposed within the PAD are not regional level commercial like big box retail or entertainment centers. This type of commercial is already continuing to develop along the Loop 101 corridor. Instead, the retail uses within the PAD will provide a localized need for residents and employees located between Luke Air Force base and the Loop 101 since heavy and light industry exists within a large portion of that area. Also, such retail will provide shopping and services at the intersection of Glendale Avenue and Glen Harbor Boulevard at the gateway to the City Airport. This will bring pedestrian and visible activity to this gateway.

"Encourage only high quality development that supports new employment opportunities and enhances the character of the area." (Goal 4)

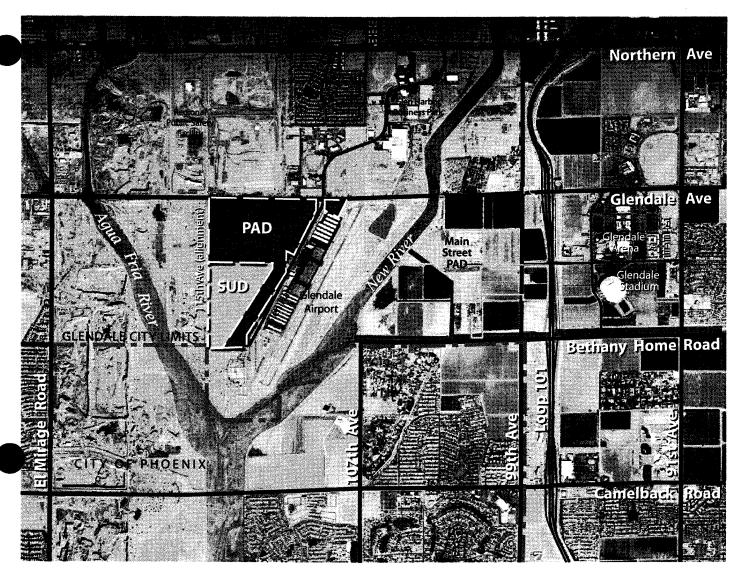
The PAD, by its design requirements and guidelines, as well as the oversight through the Development Master Plan approval procedures, will establish a foundation to encourage, assure and maintain high-quality development for the land uses at Copperwing at Glendale Airport. The PAD will prevent piecemeal development, restrict certain uses, and will encourage construction of attractive and architecturally functional buildings and spaces appropriate to its location that will attract employers and expand the City employment base.

"Encourage master planned developments that offer variety, a distinct character, and common amenities." (Goal 5)

The PAD will be a master planned development that offers a mixture of light industrial, business park development, general commercial, and specialty residential through a variety of building styles tied together through landscaping and a family of related color and construction materials. The introduction of the business park development and commercial uses with the light industrial uses create this variety.

## Conclusion:

Approval of the Minor General Plan Amendment from Light Industry to Business Park for Copperwing at Glendale Airport will further the goals of the City General Plan and Western Area Plan. Approval is consistent with the recent development approvals in the area shifting from heavy industry and light industry to a mix of light industry, business park development and commercial uses. Approval will provide the employment-generating uses proposed in the City General Plan for this Site.



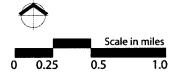




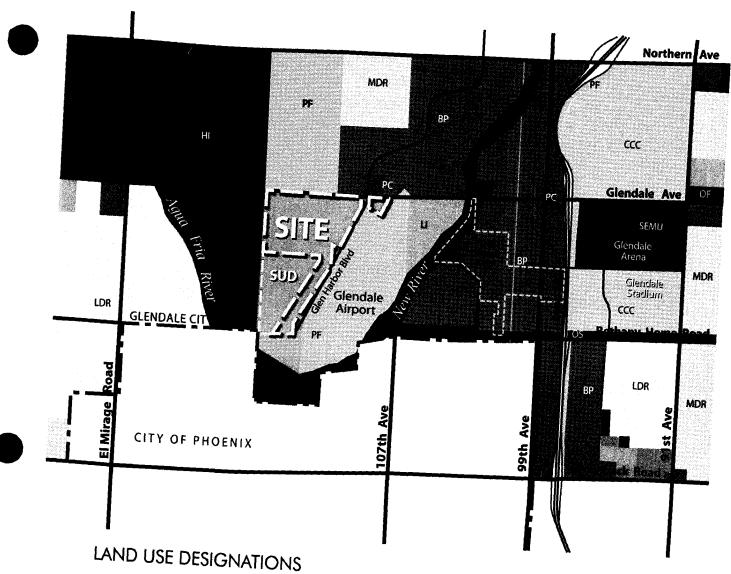
EXHIBIT A
Vicinity Map

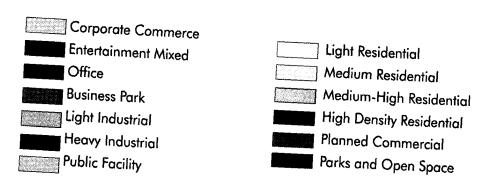
CASE # ZON08-14 & ZON08-15 1401 W. GLENDALE AVENUE

John T. Long

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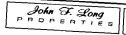


Not to Scale



EXHIBIT B

General Plan Designation Map



THEALTERGROUP

