REGULAR WORK SESSION & MEETING OF THE CITY COUNCIL

January 10, 2017

ADDISON TOWN HALL

5300 BELT LINE RD., DALLAS, TX 75254

5:00 PM DINNER & EXECUTIVE SESSION
6:30 PM WORK SESSION
7:30 PM REGULAR MEETING

Executive Session

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1. Closed (executive) session of the Addison City Council pursuant to:

   Section 551.071, Tex. Gov. Code, to conduct a private consultation with its attorney on a matter in which the duty of the attorney to the governmental body under the Texas Disciplinary Rules of Professional Conduct of the State Bar of Texas clearly conflicts with Chapter 551, Tex. Gov. Code, pertaining to

   - **4800 Airport Parkway**
   - **Release of TMRS Retiree Report**
   - **Complaint By Former Employee**
   - **The ponds or lakes at Vitruvian Park located within the vicinity and east of the intersection of Vitruvian Way and Ponte Ave., and Farmers Branch Creek**
   - **Town of Addison v. Landmark Structures I, L.P. and Urban Green Energy Cause No. DC-15-0761 44th Judicial Court, Dallas, County**
   - **Scott Damon Richardson v. Allan Scheick and County of Dallas a/k/a, d/b/a Dallas County, Inc. and John Doe 1-5 as**

yet to be discovered and Jane Doe 1-5 as yet to be discovered, Cause No. 3:16-CV-3316-K-BN, United States District Court, Northern District of Texas, Dallas Division

Section 551.072, Tex. Gov. Code, to deliberate the purchase, exchange, lease , or value of real property, pertaining to

- **Potential Development at Southeast Quadrant Of Addison Airport**
  - **Resolution Authorizing the City Manager to execute a Letter of Intent and negotiate a ground lease with a joint venture between Business Aviation Group and McClurg Century Investments**

Reconvene from Executive Session

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2. **RECONVENE INTO REGULAR SESSION:** In accordance with Texas Government Code, Chapter 551, the City Council will reconvene into Regular Session to consider action, if any, on matter discussed in Executive Session.

WORK SESSION

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3. Present And Discuss **The Purpose And Proposed Process For An Asset Management Plan For The Town Of Addison**.

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4. Present And Discuss **The Housing Policy For The Town of Addison.**

REGULAR MEETING

Pledge of Allegiance

Announcements and Acknowledgements regarding Town and Council Events and Activities

Discussion of Events/Meetings

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5. Public Comment.
The City Council invites citizens to address the City Council on any topic not on this agenda. Please fill out a **City Council Appearance Card** and submit it to a city staff member prior to Public Participation. Speakers are allowed **up to three (3) minutes per speaker** with **fifteen (15) total minutes** on items of interest or concern and not on items that are on the current agenda. In accordance with the Texas Open Meetings Act, the City Council cannot take action on items not listed on the agenda. The Council may choose to place the item on a future agenda.

Consent Agenda:
All items listed under the Consent Agenda are considered routine by the City Council and will be enacted by one motion with no individual consideration. If individual consideration of an item is requested, it will be pulled from the Consent Agenda and discussed separately.

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6. Consider **Approval Of The December 13, 2016 Regular Meeting Minutes.**

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7. Consider **Action On A Resolution Approving An Amended Separation Agreement With The City Manager.**

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8. Consider Action On A **Resolution Approving An Interlocal Mutual Aid Agreement Between And Among The North Central Texas Participating Local Governments In The Public Works Emergency Response Team.**

Regular Items

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9. Present, Discuss And Consider Action On A **Resolution Adopting A Revised Housing Policy For The Town of Addison.**

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10. Present, Discuss, And Consider Action On A **Resolution Approving A Contract With Flowline Construction, Inc., For The Construction of The Vitruvian Phase 5 Public Infrastructure** In The Amount Of $3,823,868.

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11. Hold A Public Hearing, Discuss, And Consider Action On An **Ordinance Rezoning The Property Located At 15099 Midway Road, At The Southwest Corner At The Intersection Of Belt Line Road And Midway Road, Which Is Currently Zoned LR, Local Retail, By Amending An Existing Special Use Permit For A Restaurant And An Existing Special Use Permit For The Sale Of Alcoholic Beverages For On-Premises Consumption Only In Order To Approve A Revised Site Plan Including An Outdoor Patio**. Case 1740-SUP/Starbucks.

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12. Hold A Public Hearing, Discuss And Consider Action On An **Ordinance Rezoning The Property Located At 5026 Addison Circle, On The South East Corner Of Addison Circle And Lewis Place, Which Is Currently Zoned, UC, Urban Center, By Amending An Existing Special Use Permit For A Restaurant And An Existing Special Use Permit For The Sale Of Alcoholic Beverages For On-Premises Consumption Only In Order To Approved A Revised Site Plan Including An Outdoor Patio, And To Approve A New Special Use Permit For The Sale Of Beer And Wine For Off-Premises Consumption**. Case 1749-SUP/Skinny Pizza.

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13. Present, Discuss And Consider Action On A **Resolution Approving A License Agreement Between The Town And JFK Holdings, LLC D/B/A Skinny Pizza AC, And Authorizing The City Manager To Enter Into A License Agreement With Same Entity For The Use Of A Portion Of The Public Sidewalk Within The Public Right-Of-Way Adjacent To 5026 Addison Circle For An Outdoor Patio**.

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14. Present, Discuss And Consider Possible Action Regarding The **Role Of The City Council In The Consideration And/Or Approval Of Severance Agreements Between The Town Of Addison And Town Employees.**

Adjourn Meeting

NOTE: The City Council reserves the right to meet in Executive Session closed to the public at any time in the course of this meeting to discuss matters listed on the agenda, as authorized by the Texas Open Meetings Act, Texas Government Code, Chapter 551, including §551.071 (private consultation with the attorney for the City); §551.072 (purchase, exchange, lease or value of real property); §551.074 (personnel or to hear complaints against personnel); §551.076

(deployment, or specific occasions for implementation of security personnel or devices); and §551.087 (economic development negotiations). Any decision held on such matters will be taken or conducted in Open Session following the conclusion of the Executive Session.

Posted:
Laura Bell, 01/05/2017, 5:00 pm

**THE TOWN OF ADDISON IS ACCESSIBLE TO PERSONS WITH DISABILITIES.
PLEASE CALL (972) 450-7017 AT LEAST
48 HOURS IN ADVANCE IF YOU NEED ASSISTANCE.**

AI-2039 **1.**

Work Session and Regular Meeting

Meeting Date: 01/10/2017

Department: City Manager

AGENDA CAPTION:

Closed (executive) session of the Addison City Council pursuant to:

Section 551.071, Tex. Gov. Code, to conduct a private consultation with its attorney on a matter in which the duty of the attorney to the governmental body under the Texas Disciplinary Rules of Professional Conduct of the State Bar of Texas clearly conflicts with Chapter 551, Tex. Gov. Code, pertaining to

- **4800 Airport Parkway**
- **Release of TMRS Retiree Report**
- **Complaint By Former Employee**
- **The ponds or lakes at Vitruvian Park located within the vicinity and east of the intersection of Vitruvian Way and Ponte Ave., and Farmers Branch Creek**
- **Town of Addison v. Landmark Structures I, L.P. and Urban Green Energy Cause No. DC-15-0761 44th Judicial Court, Dallas, County**
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Section 551.072, Tex. Gov. Code, to deliberate the purchase, exchange, lease , or value of real property, pertaining to

- **Potential Development at Southeast Quadrant Of Addison Airport**
  - **Resolution Authorizing the City Manager to execute a Letter of Intent and negotiate a ground lease with a joint venture between Business Aviation Group and McClurg Century Investments**

BACKGROUND:

N/A

RECOMMENDATION:

N/A

AI-2040 **2.**

Work Session and Regular Meeting

Meeting Date: 01/10/2017

Department: City Manager

AGENDA CAPTION:

RECONVENE INTO REGULAR SESSION: In accordance with Texas Government Code, Chapter 551, the City Council will reconvene into Regular Session to consider action, if any, on matter discussed in Executive Session.

BACKGROUND:

N/A

RECOMMENDATION:

N/A

AI-2021 **3.**

Work Session and Regular Meeting

Meeting Date: 01/10/2017

Department: City Manager

AGENDA CAPTION:

Present And Discuss **The Purpose And Proposed Process For An Asset Management Plan For The Town Of Addison**.

BACKGROUND:

The Fiscal Year (FY) 2017 budget included a $250,000 line item in the Self-Funded Special Projects Fund for the development of an Asset Management Plan (AMP) for the Town. The Self-Funded Special Project Fund was created by a transfer in FY2016 from General Fund savings.

The purpose of the AMP is to manage assets in such a way as to minimize the total cost of owning, operating, and maintaining those assets while delivering the desired service level at an acceptable level of risk. The plan will take into consideration the full life-cycle cost of an asset from installation or purchase, through maintenance and operation, to final disposal, and the long-range planning for the and financial planning for repair, refurbishment, and replacement. It will incorporate information from all department that are responsible for the Town's physical assets.

The $250,000 is for the solicitation of a qualified firm to assist the Town in the formulation of the plan, the formulation of the capital improvement plan, and the long-range financial plan, and other associated tasks. Staff will provide a briefing for Council on the proposed development of the Asset Management Plan.

RECOMMENDATION:

Information only, no action required.

Attachments

Presentation

Asset Management Plan
Council Briefing

January 10, 2017

FY2017 Budget Item

- Self-Funded Special Projects Fund
- $250,000
- Multi-year effort

What is Asset Management?

Managing assets to *minimize* the *total cost* of owning, operating, and maintaining those assets while delivering the *desired service level* at an *acceptable level of risk*.

What is Asset Management?

- *Managing* assets
- *Minimize* total cost through asset's *entire life-cycle*:

Purchasing	Maintaining
Owning	Replacing
Operating	

- *Delivering* desired level of service
- *Acceptable* level of risk

What Assets are Included?

- Buildings and Property
  - Town Hall
  - Athletic Club
  - Service Center
  - Parks
  - Trails
- Vehicles and equipment
- Airport
- Utilities
  - Water system
  - Pump houses
  - Elevated water storage
  - Sanitary sewer system
  - Lift station
  - Drainage system
- Streets
  - Sidewalks
  - Street lights
  - Signals

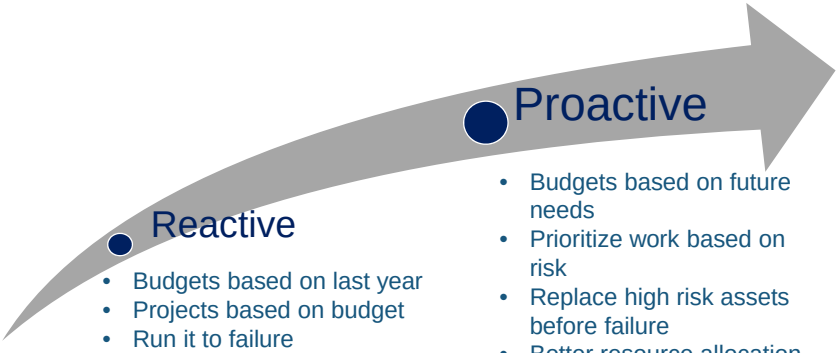
What is an Asset Management System?

Whatever system that is put in place to ensure that *what is important* is identified and understood and is manifested in *what gets done*.

Why is Asset Management Important for Addison?

- Limited resources
- Aging infrastructure
- High service expectations by residents
- Continue to encourage growth
- Changing municipal workforce

Goal of Asset Management



Reactive

- Budgets based on last year
- Projects based on budget
- Run it to failure
- Reactive projects
- Funds spent with little risk reduction

Proactive

- Budgets based on future needs
- Prioritize work based on risk
- Replace high risk assets before failure
- Better resource allocation
- Better long-term financial planning

Asset Management Plan Goals

- Understand existing conditions and future needs
- Identify replacement and rehabilitation needs
- Understand probability and consequence of failure
- Strategically minimize life-cycle costs
- Develop methodology for prioritizing work and budget expenditure
- Focus on high benefit-to-cost ratio

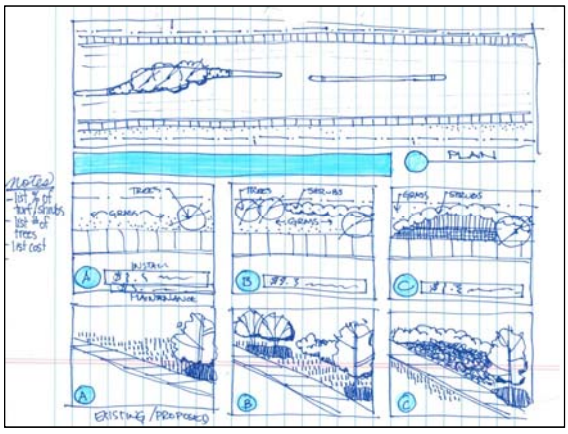
Determining Levels of Service

Public Input / Policy Decision

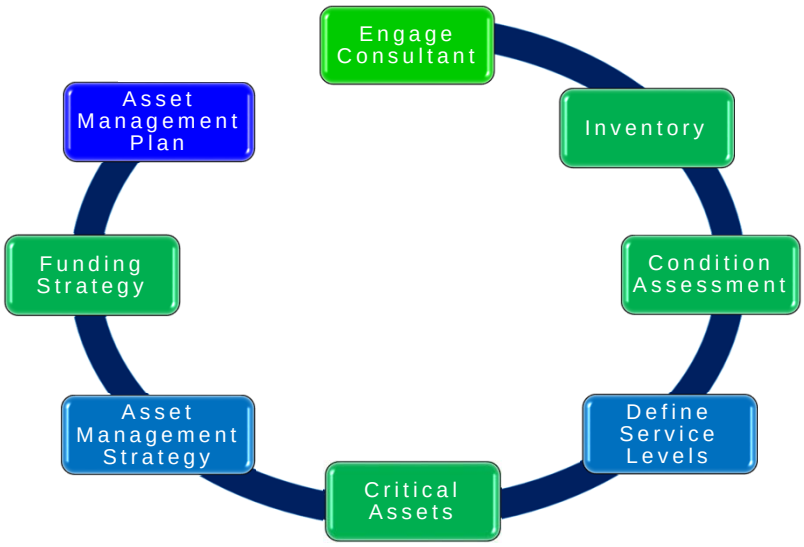
Basic level - $

Moderate level - $$

Enhanced - $$$

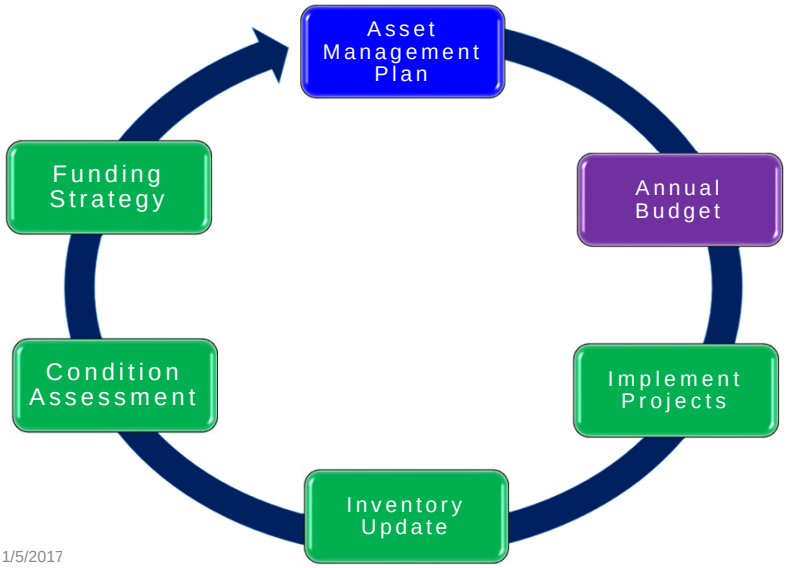


Asset Management Plan Process



1/5/2017 11

Asset Management Plan Implementation



1/5/2017 12

Seven Key Questions

- Asked for each asset category

1. What does the Town own?
   - Inventory
2. What is it worth?
   - Value / replacement cost
3. What is its condition / remaining life?
   - Function and performance

Seven Key Questions (cont.)

4. What needs to be done?
   - Maintain, rehabilitate, replace?
5. When does the Town need to take action?
   - How much useful life left?
6. How much will it cost?
   - Investment requirements
7. How does the Town ensure sustainability?
   - Long-term financial plan

Current Asset Information

Infrastructure	Parks	General Services	IT	Airport
Water master plan	Art Work	Buildings	Computers	Buildings
Wastewater master plan	Benches	Fleet	Servers	Systems
Street assessment	Fountains	Roofing	Audio/Visual Equipment	Pavements
Pump station inspections	Lights	Electrical System/HVAC	Telephones	Guidance Signs
Water Storage Facility assessment	Playground equipment	Plumbing	Network	Lights

Asset Management Committee

- City Manager's Office
- Infrastructure
- Parks
- General Services
- IT
- Airport
- Finance

Next Steps

- Issue Request For Qualifications
  - Select firm experienced in public sector Asset Management Plan development
- Develop plan
  - Public input
  - Council policy
- Periodic Council progress updates
- Present final plan to Council for adoption
- Include in budget proposal
- Implement the plan

Questions?

AI-2022 **4.**
Work Session and Regular Meeting
Meeting Date: 01/10/2017
Department: City Manager

AGENDA CAPTION:
Present And Discuss **The Housing Policy For The Town of Addison.**

BACKGROUND:
Over the past number of months, the City Council has had several conversations, and held a public hearing, regarding the Town's current housing policy and possible amendments. There is a desire by some Council Members to allow additional flexibility for the Town to consider housing developments that do not comply with the current housing policy. At the September 29, 2016 Council Meeting, the Council unanimously directed staff to bring forward a resolution adopting two revisions to the policy.

First, Council requested that "Where feasible and appropriate" be added to the first section of the policy, so that it would read:

> *Where feasible and appropriate, new housing should increase the proportion of fee-simple ownership in Addison's housing mix. Apartment-only rezoning is unlikely to be approved, as currently the ratio of rental to ownership properties is higher than desired.*

Second, Council requested that a fifth section be added that would allow for exceptions to the policy. This new section would read as follows:

> *The City Council acknowledges that there may be exceptional projects that do not comply with elements of this policy. The Council encourages developers and staff to pursue projects that represent the highest and best use of each property and that advance portions of this policy or other Town goals.*

This language recognizes that there may be projects that warrant special consideration, defines staff's role in bringing such projects forward and broadly states the criteria for considering exceptions to the policy. The other components of the policy were left unchanged.

The resolution to formally adopt these revisions was placed on the October 11, 2016. At that meeting, the Council voted to delay making these changes until a Work Session could be held so that the Council could continue to discuss the issue. Accordingly, staff has placed this item on the agenda to provide Council the opportunity to hold further discussions.

RECOMMENDATION:
Information only, no action required.

Attachments

Addison Comprehensive Plan-Housing
Addison Housing Inventory
Housing Workshop Results Memo

TOWN OF ADDISON
COMPREHENSIVE PLAN
2013



HISTORY OF THE TOWN

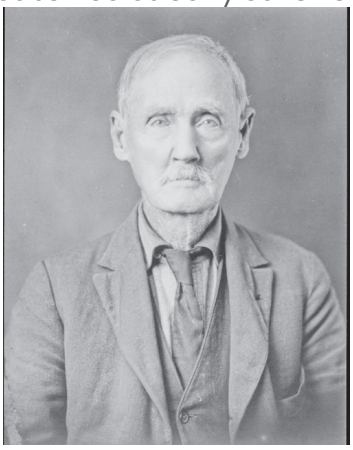




HISTORY OF THE TOWN

BEGINNINGS

The Town of Addison is located in an area once called Peters Colony. It was settled as early as 1846 when Preston Witt built a house on White Rock Creek. The area was not known as Addison until 1904. Addison was named after Addison Robertson, who was a Confederate War hero and served as the community's second postmaster from 1908-1916. In 1902, the first industry was introduced to Addison when a cotton gin was built on Addison Road, by the Pistole brothers.



Addison Robertson, the Community's second Postmaster and namesake

Transportation came to Addison in 1888 when the St. Louis, Southwestern Railway Company extended the Cotton Belt Line from Commerce, Texas to Fort Worth, Texas. Mr. W.W. Julian, an Addison landowner, donated one half-acre of land to the Railway Company so that it would establish a depot in Addison. The depot established Addison as a center for commerce and drew stores, churches, and other businesses.



The original "Town" of Addison. One building, the original Addison Bank, still stands along Broadway, formerly the only commercial area in the community.

Like other rural communities, Addison originally had its own school system. The Addison School Building was built on Belt Line Road, which was then a dirt road, and served the community until 1954 when the Addison district merged with the Dallas Independent School District. The school, which was closed in 1964, now serves as the Addison Magic Time Machine Restaurant.

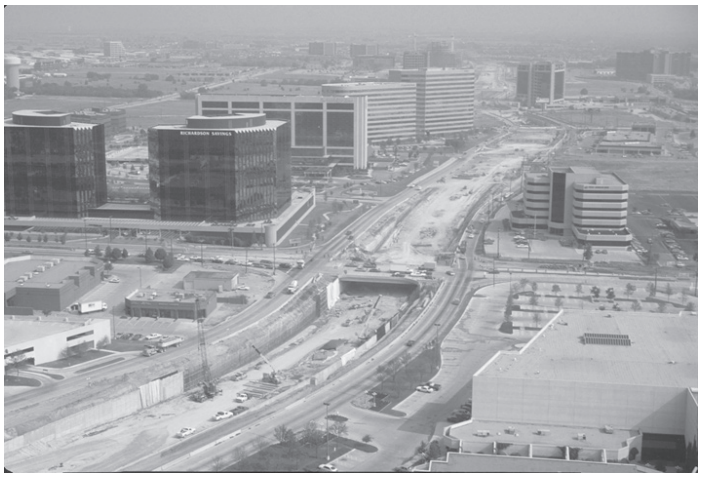
The City of Addison was incorporated on June 15, 1953, under an alder-manic form of government. In 1956 construction began on the Addison Airport, which was eventually purchased by the Town in 1975 using an FAA grant.

BOOM TOWN DAYS

In 1975, Addison was poised for growth. It had its own airport, and the Dallas North Tollway was being extended north toward the Town. Landowners in the community felt that it was time for Addison to take control of its fate and shape the new private investment and development that would undoubtedly follow the construction of the Tollway. Property owners realized that the Town lacked infrastructure to support quality development, and they realized that by discouraging, or simply ignoring growth, the Town was actually encouraging poor quality development.

In 1975, the Town elected new leadership, including a new Mayor, Jerry Redding. Mayor Redding and other Addison leaders realized that while the Town enjoyed a great location for commerce, it

had a limited amount of land on which to build tax base. They realized that given Addison's small population, it might be possible to hold a successful "local option" election and bring alcohol sales to Town. Addison leaders felt they had hit upon an industry that was tailor-made for Addison's Main-and-Main location at the intersection of Belt Line and the soon-to-be completed Dallas North Tollway.



Construction of the Dallas North Tollway through Addison. The Town paid to construct the Tollway underground so that it would not cut the community in half.

They held the local option election in 1975 and voted to allow packaged liquor sales and liquor-by-the-drink in Addison. Since most of the communities in all directions from Addison were still "dry," this progressive decision proved to be an enormous economic catalyst. However, the Council was determined to control the impact of that decision on the community, so it restricted the sales of packaged liquor sales to Inwood Road, south of Belt Line Road. The Council also required applicants wanting liquor-by-the-drink permits to have 60 percent of their sales receipts come from food sales. This requirement helped the Town develop an amazing group of quality restaurants and two large full-service hotels, and it shaped Addison as one of the foremost hotel and dining destinations in the Metroplex. Addison is still known as a premier restaurant community with over 166 restaurants that can seat over 20,000 patrons at one time.



Addison was one of the few communities in the Metroplex to allow the sale of alcoholic beverages

Addison has long been committed to providing quality services and facilities to its residents. It established early, and has maintained, excellent response times for Police and Fire/EMS services. It also takes great pride in the quality of the built environment for both private sector properties and facilities built by the Town.



Residents stroll in Celestial Park in the Bellbrook neighborhood.

In 1987 the Town constructed the Addison Athletic Club, which includes a basketball court, work-out facilities, racquetball courts, and both an

indoor and outdoor pool. All Addison residents pay a one-time $10.00 fee for use of the facility. Addison also began a commitment to community life by sponsoring community events throughout the year. Today Addison's signature events: Kaboom Town, Oktoberfest, and Taste Addison, draw over 250,000 people a year to the Town. On a daily basis, Addison's 130 acres of parks and trails and Special Event facilities provide wonderful passive recreational opportunities, as well as a beautiful aesthetic quality for the Town.

REINVENTING

During the late 1970's and early 1980's, Addison experienced explosive growth, with new office buildings and restaurants being constructed on every corner. Then in 1988, Addison, like the rest of Texas, was hit by the Savings and Loan crisis and subsequent real estate market crash. Addison was particularly hard-hit because so much of its land was devoted to office and commercial uses. Once again, Addison officials, led by then-Mayor Lynn Spruill, realized the importance of taking control of the city's development as opposed to just riding out the boom and bust cycles of the real estate market. The Town formed a committee comprised of Council members, Addison residents and business people, as well as respected members of other communities. The group began a visioning process called 2020 Vision. The group analyzed Addison's strengths and weaknesses and developed a logical future for the Town, which has shaped the Town's development direction since 1991.

The group determined that Addison, with its unique location and restaurant/shopping/entertainment offerings, had the ability to become the urban housing and entertainment provider for the more than 100,000 people who worked along the Dallas North Tollway corridor. The group studied the New Urbanism movement that was becoming a popular development format around the country, and believed that higher density multi-family, in a mixed-use environment with office and retail uses, was a good fit for Addison. The group believed that unique architecture and high-quality, long-lasting building materials would deliver a mixed use neighborhood that would enjoy a longer lifecycle that typical stand-alone garden apartment or office projects.

The Town Council tested its belief in new urbanist development on an 84-acre tract of raw land that lay between the Dallas North Tollway and Addison Road. It worked with Columbus Realty Trust (later sold to Post Properties) to develop Addison Circle, one of the first mixed-use developments in the country to be built on a green-field, suburban site. Addison Circle has been very successful and is a signature development for the Town. The many parks and plazas in Addison Circle draw residents from throughout the community, and Blueprints at Addison Circle, the Town's signature art piece, provides an instantly-recognizable icon for the Town.



Addison Circle

CONTINUING THE VISION

Since 1991, the Town has been through other boom-bust real estate cycles, but it continues to believe in high-density, mixed-use development for both owner-occupied and rental housing. It



Towne Lakes townhomes

has been able to fill in small parcels of land with higher-density townhome developments such as the Towne Lake townhomes and Stanford Court Villas. Townhomes provide an attractive alternative to the many Addison residents who want to live in a home they own, but don't want a yard to maintain.

VITRUVIAN PARK

In 2007 the Town had another opportunity to partner with a developer on an urban neighborhood when UDR (formerly United Dominion Realty, a real estate investment trust) purchased 114 acres in the Brookhaven Club Drive area. UDR, knowing that Addison understood higher density and



Savoye and Savoye 2, the first developments in Vitruvian Park

mixed uses, purchased nine aging multi-family complexes and came to the Town with a plan for Vitruvian Park, a new community of 5,000 multi-family units. The redevelopment plan features a 12-acre park oriented along the creek that flows through the southern half of the proeprty. UDR also purchased the Brookhaven Village Shopping Center and is working on a plan to tie the new residential units and the shopping center together in a unified development featuring walkable streets and connections between the apartments and the retail. Once again the Town partnered with the developer to construct and maintain the streets, parks, and plazas.

LOOKING TO THE FUTURE

Addison is a young town when compared to many other cities in the Metroplex, and that is a mixed blessing. Its young age means that almost everything in Addison, including the Town's basic infrastructure of road, water lines, and public buildings, has been built since 1975. Therefore, the city is not required to devote a large portion of every annual budget to rebuilding and repairs. However, the amount it has to devote is steadily increasing as some major roads and water lines in the community need rebuilding. In addition, many buildings in Addison were constructed quickly to respond to a fleeting demand, and were built with more emphasis on cost than quality. Addison cannot boast of a great stone courthouse or great homes of architectural significance that other communities enjoy. Iconic buildings of good quality bring character to a city, and they can be remodeled and reinvented time after time to serve as a catalyst for new development. Many buildings in Addison are almost 40 years old, and they are not aging gracefully. Addison has to compete for residents, businesses, and tax dollars with every other city in the Metroplex, and in an area where there is a seemingly endless amount of raw land,



Creek and Bridge behind Addison's Town Hall—one of the prettiest spots in Town

newer communities further up the Tollway can draw private sector investment more easily than Addison can draw reinvestment.

For Addison to continue to thrive, it has to re-grow and redevelop within its fixed boundaries. The leaders of Addison recognize the challenge and begin the update to the Town's Comprehensive Plan with the intent to identify areas of Addison that need to be redeveloped and reinvented, as well as areas that need to be preserved and protected. Addison has always been the "little town that could" and it has proven that it will re-think, re-gear, and re-invent itself to keep the Town of Addison one of the premier communities in the Metroplex.

History and photos taken from "Addison Texas—a pictorial history, by Andrew T. Eades, copyright 2001.

COMMUNITY SNAPSHOT



COMMUNITY SNAPSHOT

LOCATION

Addison is a town of 4.35 square miles (2,787.05 acres) located in the Dallas North Tollway corridor. It lies just north
of the Dallas North Tollway/Interstate 635 interchange, a major crossroads for the entire Dallas-Fort Worth metroplex. The Tollway corridor is home to multiple corporate office parks, many large, full-service hotels, scores of quality restaurants, and the prestigious Galleria Mall. The area commands a central location in reference to downtown Dallas, DFW International Airport, the Richardson telecommunications corridor, and the Plano Legacy corporate campus area.

Addison's convenient location and large concentration of well-paying jobs and commercial development has altered the traditional suburban pattern in which residential land uses, primarily single-family houses, are dominant. Instead Addison functions as an employment node and regional shopping center for the residents and businesses located in a "trade area" bordered on the east by Central Expressway (US 75) on the west by Interstate 35E, on the south by Interstate 635 (LBJ Freeway) and on the north by Highway 190, (President George Bush Turnpike).

FACTORS SHAPING GROWTH

Addison's growth has been impacted by several factors. The Town has extensive frontage on its eastern edge along the **Dallas North Tollway**, which has been a catalyst for real estate development and has strongly influenced Addison's growth. The Tollway provides direct access to downtown Dallas on the south and Highways 190 and 121 on the north. Addison has experienced significant development activity on the Tollway corridor during the past 30 years, and the Tollway corridor continues to be a prime location for high-density office development and full service hotels.

Addison also has the properties on three corners of the **Belt Line Road/Dallas North Tollway** intersection, a Main-and-Main location in the North Dallas area for office buildings, restaurants, retail, and hotels.

The **Addison Airport** is a general aviation airport which is owned by the Town and is considered to be one of the community's greatest assets. The Addison Airport is a single runway facility and is ranked by the Federal Aviation Administration (FAA) as one of the busiest airports of its kind. The airport is used extensively by corporate executives who wish to conduct business in offices located in the North Dallas area.

The Airport is an asset to the Town, and in order to secure its ability to operate safely the Town has put two protective measures in place:

Noise Contours, which were established through a FAA Part 150 Study, extend along the sides and off of both ends of the runway. Properties within the Noise Contours experience a Day-Night Average Noise Level (DNL) of between 65-85 decibels. The Town prohibits single and multi-family residential development within the Noise Contours.

Imaginary Surfaces, which were established through a FAA Part 77 Study, project imaginary surfaces from the sides and ends of the runway.

The imaginary surfaces establish height limits around the runway that allow aircraft to land and take off safely. The Town limits the height of buildings around the runway to protect both the users of the airport and the people in buildings around it.

The noise and height challenges have been a mixed blessing through the Town's history, for while they have prohibited residential development in some areas, the business generated by the Airport has attracted commercial development.

Addison is located within two school districts: **The Dallas Independent School District** (DISD) and the **Carrollton-Farmers Branch Independent School District** (CFBISD). The fact that Addison is split between two districts, and the fact that most of the city is part of a large urban school district has caused it to be a less attractive location for a large number of families who choose their home based on where their children will attend schools. Until 2011, Addison did not have a public school within its boundaries. However, in August of 2011, DISD opened the George Herbert Walker Bush Elementary School on Spring Valley Road, which provides a local school for grades K-5th. While Addison has limited offerings for public schools, it is home to two of two large and well-established private schools: The Greenhill School and the Trinity Christian Academy. It also has other private schools, such as the Parish Episcopal School and Jesuit Preparatory School, close by.

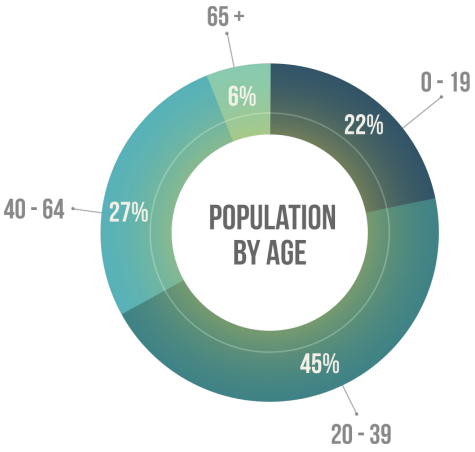
Since 1975, Addison has permitted the sale of alcoholic beverages for on-premises consumption, and the sale of beer, wine, and distilled spirits for off-premises consumption. Addison's decision, early in its development, to allow the sale of alcoholic beverages had a dramatic impact on its development. The Town's ability to have "liquor by the drink", long before other suburbs, coupled with its convenient location, drew two large full-service hotels to the city in the early 1980s. The Dallas Marriott Quorum and the Registry Hotel (now the Intercontinental Hotel) provided an immediate drawing card for high-density office uses, and the many employees housed in high-density office buildings provided diners for restaurants at lunch, and the sale of liquor by the drink gave the restaurants a healthy dinner business. The cluster of restaurants in Addison was unrivaled by any other city in the Dallas-Fort Worth region, and made Addison famous nation-wide as a proving ground for new restaurant concepts.

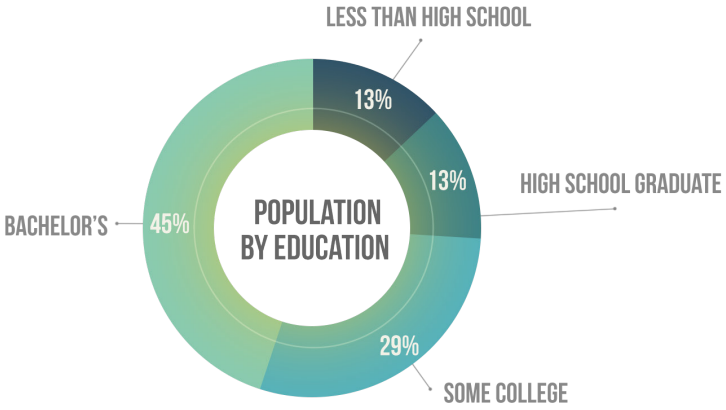
Since the late 1990s, the extension of the Dallas North Tollway to Highway 121 has caused the development of other restaurant clusters, and other communities have voted in the sale of alcoholic beverages for both on and off-premises consumption. However, restaurants are still Addison's foremost retail business. The Town currently has 166 full-service restaurants offering every conceivable type of cuisine.

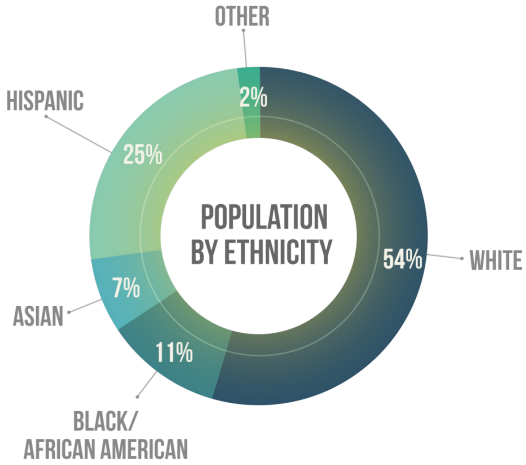
FACTS & FIGURES

2010 POPULATION:	13,062
2011 ASSESSED VALUE:	$3,028,042,600
POPULATION BY GENDER	
MALE:	49.8%
FEMALE:	50.2%
MEDIAN AGE:	32.5 YEARS
MEDIAN HOUSHOLD INCOME:	$53,790
NUMBER OF HOUSING UNITS:	8,804
TOTAL EMPLOYMENT IN ADDISON:	45,649
AREA OF TOWN:	4.35 SQ. MI.

DEVELOPABLE LAND REMAINING:	5%
HOUSING UNITS:	8,826 TOTAL
OWNER OCCUPIED:	2,269 UNITS
	25.5%
	1.792 PER UNIT
RENTER OCCUPIED:	6,558 UNITS
	74.5%
	1.763 PER UNIT
EDUCATION:	45% WITH A BACHELOR'S DEGREE OR HIGHER

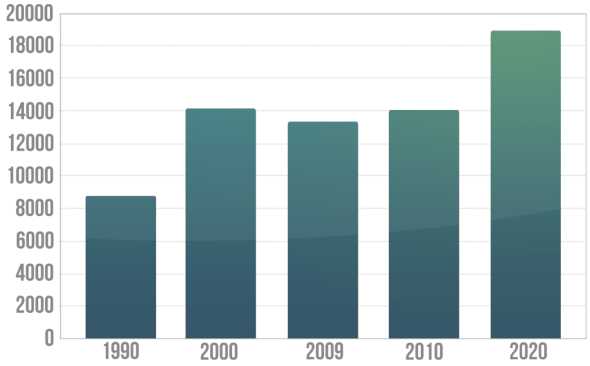


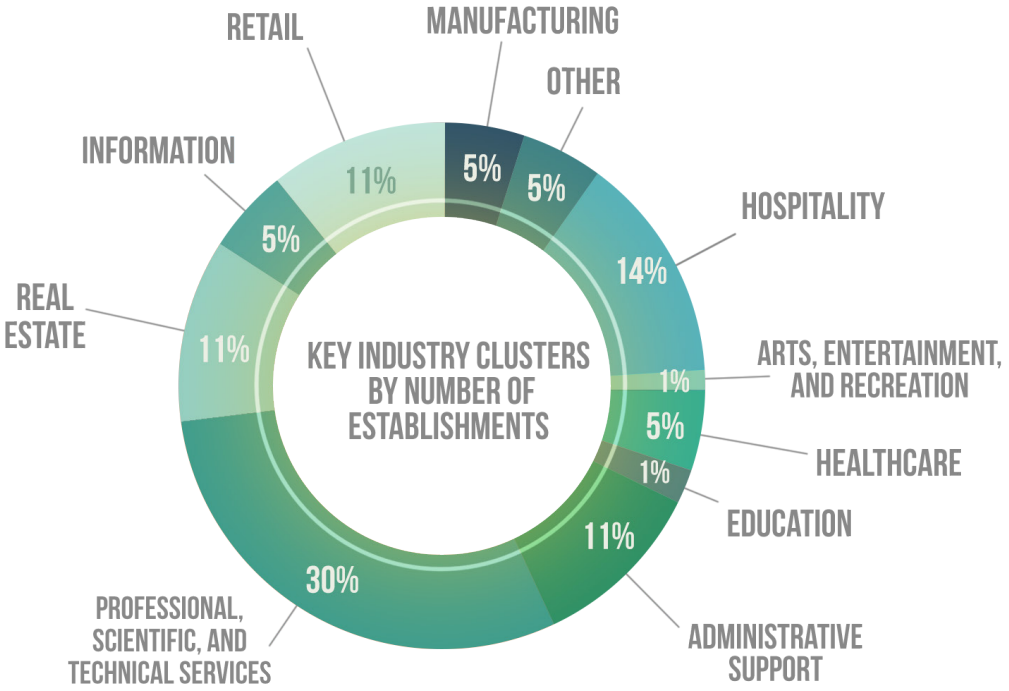


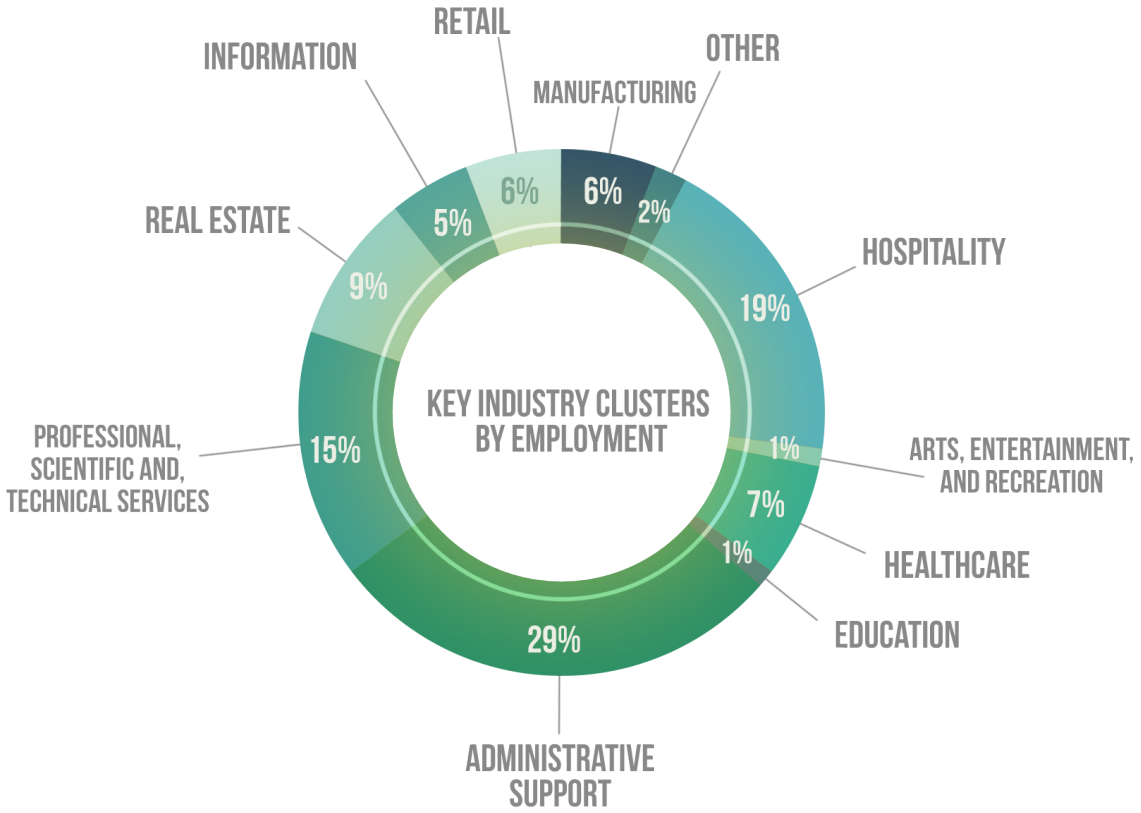


POPULATION TREND

Multi-family redevelopment meant a brief decline in population, but is back on an upswing with new higher density residential developments in Addison.




KEY INDUSTRY CLUSTERS BY NUMBER OF ESTABLISHMENTS
RETAIL
MANUFACTURING
OTHER
INFORMATION
HOSPITALITY
REAL ESTATE
ARTS, ENTERTAINMENT, AND RECREATION
HEALTHCARE
EDUCATION
ADMINISTRATIVE SUPPORT
PROFESSIONAL, SCIENTIFIC, AND TECHNICAL SERVICES
11%
5%
5%
14%
1%
5%
1%
11%
30%
11%
5%


KEY INDUSTRY CLUSTERS BY EMPLOYMENT
RETAIL
INFORMATION
MANUFACTURING
OTHER
REAL ESTATE
HOSPITALITY
PROFESSIONAL, SCIENTIFIC AND, TECHNICAL SERVICES
ARTS, ENTERTAINMENT, AND RECREATION
HEALTHCARE
EDUCATION
ADMINISTRATIVE SUPPORT
6%
6%
2%
5%
9%
19%
15%
1%
7%
1%
29%

ADDISON'S TOP TEN LARGEST EMPLOYERS

COMPANY	LOCATION	JOBS	INDUSTRY
BANK OF AMERICA (MBNA)	16001 NORTH DALLAS PARKWAY	3,400	FINANCE
MARY KAY COSMETICS	16251 NORTH DALLAS PARKWAY	1,070	COSMETICS
NATIONAL DEFAULT EXCHANGE MANAGEMENT	15000 SURVEYOR BLVD	566	MORTGAGE
REXEL	14951 NORTH DALLAS PARKWAY	550	INDUSTRIAL SUPPLY
AMERICAN HOME MORTGAGE SERVICING	16675 ADDISON ROAD	500	MORTGAGE
UNITED SURGICAL PARTNERS INTERNATIONAL	15305 NORTH DALLAS PARKWAY	360	MEDICAL
CONCENTRA OPERATING CORPORATION	5080 SPECTRUM DRIVE	321	MEDICAL
GLAZER'S FAMILY OF COMPANIES	14911 QOURUM DRIVE	280	SPIRITS
GREENHILL SCHOOL	4141 SPRING VALLEY ROAD	256	EDUCATION

ELEMENTS OF THE TOWN





LAND USE - RESIDENTIAL

RESIDENTIAL IN ALL SHAPES AND SIZES

The Town of Addison is often described as an "enclave community" Dictionary.com defines an enclave as any small, distinct area or group enclosed or isolated within a larger one. Addison is enclosed by other cities: Dallas on the east and north, Carrollton on the west, Farmers Branch on the south. Yet it is distinctly different from any of those other communities. Addison began as the other cities around it, a rural community with a small nucleus of retail along a train track. Yet Addison did not build an early population base. Even though Addison was located on Belt Line Road, a major arterial road that circled all of Dallas County, it stayed small, with little development except for the airport. In the early 1970s it was determined that the Dallas North Tollway would come through the Town, and at that point, commercial developers, sensing a good location in the making, began to buy up sites along the proposed Tollway route, and along Belt Line Road. Once the Town voted in alcoholic beverage sales, growth came quickly to the Town, but it was commercial and retail growth.



Aventura Condominiums

OWNER OCCUPIED

As Addison began to develop as a destination for business, hotels, and dining, its owner-occupied residential growth lagged behind the commercial growth. It's residential growth, or lack of it, was initially shaped by the Addison Airport, which required a lot of land for both the runway and the clear zone around it, and was not particularly pleasant to live around. The Airport also had noise and height restrictions that made many parts of the city unavailable for residential growth. Then in the 1970s, the Dallas Independent School District was desegregated, giving rise to large-scale migrations of families that fueled much of the suburban growth in the communities surrounding Addison such as Richardson, Carrollton, Farmers Branch, and Plano. While single-family development boomed in those cities, Addison, which was in the DISD, was viewed as a less desirable location for traditional single-family residential development.

However, as Addison's commercial base began to grow and include upscale hotels and fine restaurants, it's many benefits became apparent. It had an excellent location relative to both the Dallas-Fort Worth International Airport and Love Field. It was close to well-paying jobs that were developing in new mid-rise office buildings at the intersection of the LBJ Freeway and the Dallas North Tollway, and along the Tollway itself. It had easy access to Interstate 35E and Highway 75 (Central Expressway). It was also close to three of the largest retail malls in the Metroplex: Valley View Mall, Prestonwood Mall (since closed), and Galleria Mall. Addison's excellent location, great shopping, and many restaurants made it ideal for a young and energetic population that fell into three basic demographic groups: empty nesters (couples with grown kids), single, young urban professionals (Yuppies), and double-income no-kids couples (DINKS).

The demographic groups that were drawn to

Addison impacted its housing stock. Addison has smaller lot sizes and smaller houses than other suburbs such as Richardson and Plano. It's population wanted good quality, smaller homes with low-maintenance yards, and that is the



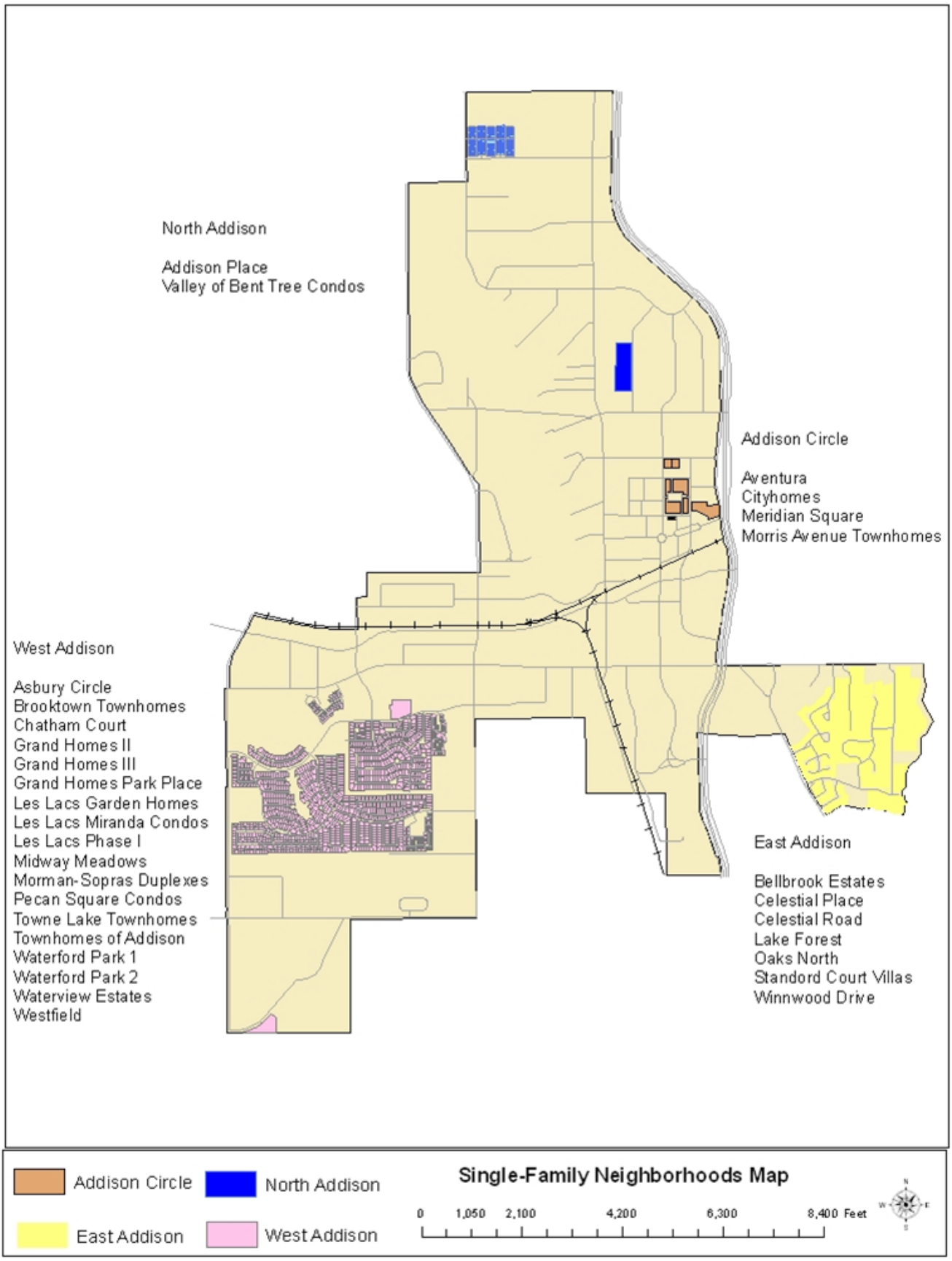
Oaks North patio home

product that homebuilders delivered. While there are some very large lots in the Winnwood-Celestial area, Addison is predominantly a community of patio homes. The smaller 50' x 100' lots, as well as attached townhomes and condominiums, suit Addison's mobile and busy population. The shape of the Town and the noise contours for the Addison Airport caused residential growth to happen in "pockets" on the east, west, and north edges of the Town. Within the three pockets, there are distinct neighborhoods with a mixture of housing densities. The small neighborhoods make Addison a friendly place to live and one where neighbors know one another.

Since its early days, the Town's municipal services to residents, and particularly to homeowners, have been exemplary. The Addison Way, as it is known, describes the above-and-beyond service that is given to residents by all municipal departments be it Police, Fire, Parks, Utilities, or the City Manager's office. Exemplary services include free, on-demand pick-up of brush and bulk items, free library services to both the Dallas and Farmers Branch Library systems, "close patrol" by the Police Department when residents go out of Town, and the Town's maintenance of all landscaped medians and perimeter plantings in the neighborhoods. The Homeowners in Addison feel that they live in a small town in the middle of a big city, an enclave in which they know all their neighbors and know the names of the Police officers that patrol their neighborhoods. Homeowners also feel that their voices are heard and their opinions matter in how the Town is run, and each one of them can, if they choose, get involved in the Town and make a difference in the quality of life in Addison.



Addison Circle Townomes


North Addison
Addison Place
Valley of Bent Tree Condos
Addison Circle
Aventura
Cityhomes
Meridian Square
Morris Avenue Townhomes
West Addison
Asbury Circle
Brooktown Townhomes
Chatham Court
Grand Homes II
Grand Homes III
Grand Homes Park Place
Les Lacs Garden Homes
Les Lacs Miranda Condos
Les Lacs Phase I
Midway Meadows
Morman-Sopras Duplexes
Pecan Square Condos
Towne Lake Townhomes
Townhomes of Addison
Waterford Park 1
Waterford Park 2
Waterview Estates
Westfield
East Addison
Bellbrook Estates
Celestial Place
Celestial Road
Lake Forest
Oaks North
Standord Court Villas
Winnwood Drive
Addison Circle
North Addison
East Addison
West Addison
Single-Family Neighborhoods Map
0 1,050 2,100 4,200 6,300 8,400 Feet

The Addison Athletic Club, originally opened in 1987 and expanded to include an outdoor pool in 2003, provides all Addison residents a country-club level facility that includes work-out equipment, a gymnasium, indoor and outdoor pools, racquetball courts, meeting rooms, and a child care facility. The facility is free to all Addison residents and is limited to residents only. The Athletic Club facility is tailored to Addison's population. It is more like a full-service commercial fitness facility than a traditional neighborhood recreation center. The Athletic Club also provides a venue for residents to meet one another and see their neighbors and friends. It is also the site of the Town's community garden, which allows residents who live on small lots to grow their own vegetables.



Athletic Club Outdoor Pool

In the 1991 Comprehensive Plan, the Town set a goal for housing:

> **"Expand the residential population of Addison by offering new housing opportunities including a range of new product types. Provide opportunities for the construction of a mix of housing types for person of diverse economic groupings."**

The Town has certainly fulfilled that goal. Today Addison provides 9,363 homes in every size and level of affordability. While there are some traditional families who choose Addison for the convenient location, excellent city services, and access to private schools, the majority of Addison's households do not have children living in the home. Addison is widely regarded as an attractive alternative for the many people in the Metroplex who want to live in an exciting urban environment, not a typical "bedroom community." The on-going challenge for the Town will be in keeping Addison's small-town "enclave" feel and maintaining and enhancing the Town's wonderful residential neighborhoods.

OWNER-OCCUPIED HOMES

LARGE LOT (12,000 SQ.FT. OR LARGER) DETACHED	NUMBER OF UNITS	PERCENTAGE
BELLBROOK ESTATES	47	
CELESTIAL ROAD LOTS	8	
LAKE FOREST LOTS	18	
WINNWOOD DRIVE LOTS	33	
TOTAL	**106**	**5%**

SMALL LOT (12,000 SQ. FT. OR LESS) DETACHED		
ADDISON PLACE	174	
CELESTIAL PLACE	22	
CHATHAM COURT, CAMDEN-CHANCEY	47	
GRAND HOMES II, SOUTH OF LES LACS AVENUE	167	
LES LACS GARDEN HOMES, RIVE AZURE, CANOT	218	
LES LACS PHASE I, LEXUS-SHERRY-LAKECREST	47	
MIDWAY MEADOWS	218	
OAKS NORTH	118	
WATERFORD PARK 1, EAST SIDE OF LAKE	65	
WATERFORD PARK 2, WEST SIDE OF LAKE	117	
WATERVIEW ESTATES, WATERVIEW CIRCLE	49	
WESTFIELD, HERITAGE-VINTAGE	41	
TOTAL	**1,283**	**56%**

OWNER-OCCUPIED HOMES CONT.

DUPLEXES AND ATTACHED TOWNHOMES	NUMBER OF UNITS	PERCENTAGE
ASBURY CIRCLE	72	
BROOKTOWN TOWNHOMES	39	
CITYHOMES	183	
MERIDIAN SQUARE	52	
MORMAN-SOPRAS DUPLEXES	88	
MORRIS AVENUE TOWNHOMES	6	
STANFORD COURT VILLAS	19	
TOWNE LAKE TOWNHOMES	63	
TOWNHOMES OF ADDISON	93	
TOTAL	**615**	**26%**
CONDOMINIUMS		
ADVENTURA	86	
LES LACS MIRADA CONDOS	44	
PECAN SQUARE CONDOS	63	
VALLEY OF BENT TREES CONDOS	102	
TOTAL	**295**	**13%**
TOTAL OWNER-OCCUPIED HOMES	**2,299**	**100%**

At this point in Addison's development, all of the available single-family land has been built out. There are no more lots available and no more raw land that could be developed as traditional one-home-on-one lot subdivisions. The limited number of homes may be one of the reasons owner-occupied homes in Addison enjoy good property values. They are typically valued at a higher price per square foot than similar homes in neighboring communities. When homes in Addison come on the market, they sell quickly and generally for close to asking price. The continued value of the neighborhoods is a testament to several factors: Addison is a good location, the services are excellent, it is a safe community, and its streets and parks are attractive and well-maintained. There might be some additional areas that could be rezoned and redeveloped for townhome or condominium development, but Addison does not feel the need to add more residents just for the sake of boosting the population and does not want to sacrifice the quality of its owner-occupied housing for quantity.

The Town recognizes that attractive and viable residential neighborhoods are not a gift, but an obligation. Neighborhoods must be constantly protected, managed, and maintained. Addison has always made an excellent commitment to the quality of its neighborhoods. The Town's Parks Department maintains all entrances to the neighborhoods and all islands, plazas, and common areas within neighborhoods. The Town does not want maintenance left to homeowners' associations that might not keep it up to the standard that Addison residents expect. In addition, the Town works diligently to keep the streets in all neighborhoods in good repair and the curbs clean by providing weekly brush and bulk item pick-up, as well as on-call brush pick-up. The Town's Code Enforcement division patrols neighborhoods and responds to complaints about home maintenance issues, and works with homeowners and neighborhood associations to keep individual homes maintained. The neighborhoods are constantly patrolled by Addison Police personnel who manage and monitor traffic in the neighborhoods, and Addison's residential fire-sprinkler ordinance requires that all homes in Addison constructed after 1992 be provided with emergency fire sprinkler systems, which substantially reduces the threat of having one or more homes burned out by fire.

Addison currently has good quality owner-occupied housing stock that is viable, attractive, and well-maintained. The Town should commit to keeping its homes and neighborhoods viable and maintaining the property values by keeping up with maintenance, linking neighborhoods together to help residents connect with their neighbors, and where possible, expanding and improving neighborhood entrances, lighting, and landscaped common areas within the neighborhoods.

GOAL: Recognize that quality of neighborhoods should not be sacrificed for quantity. Keep the owner-occupied housing stock in Addison at its current level, and keep the neighborhoods competitive by ensuring they remain safe, well-maintained, and attractive.

OBJECTIVES:

1. Keep properties in the neighborhoods well-maintained.

STRATEGY: Maintain an active Code Enforcement program to keep individual homes and yards maintained to an acceptable standard.

2. Enhance existing neighborhood infrastructure when possible.

STRATEGY: Institute an annual program for assessing quality and useful life of neighborhood amenities, and allocate funds for replacement , additions, or remodels as needed.

3. Provide pedestrian connections within the neighborhoods, between neighborhoods, and from neighborhoods to local services and amenities such as retail uses and recreational facilities.

STRATEGY: Require pedestrian connections for any new neighborhoods or redevelopments and include connections from neighborhoods into the Master Trail Plan.

RENTER OCCUPIED

Addison's first residential developments were multi-family complexes built in the late 1960s in the Brookhaven Club Drive area (now Vitruvian Park). Some of those early complexes are still operating and providing homes to Addison residents. The Town has always had a substantially larger population of multi-family renters than a typical suburb. At present, 76% of Addison's residents live in multi-family as compared to 24% in owner-occupied housing.

Multi-family residents also enjoy the Town's enhanced level of service and benefits such as free membership to the Addison Athletic Club and free library access to the libraries in Farmers Branch and Dallas. The Town extends its philosophy of building neighborhoods—not just projects, to its multi-family communities and provides a park and open space amenity as close as possible to every complex. The Town has three multi-family areas with a variety



A courtyard in Addison Circle

of densities: Addison Circle, North Addison, and Vitruvian Park.

ADDISON CIRCLE

In 1991 the Town conducted a strategic planning effort called Vision 2020. During that effort, the Town's staff and the Vision 2020 Group embarked on a thorough study of the existing multi-family



Beckert Park in Addison Circle

product in Addison and throughout the Metroplex. The committee determined that the standard "garden" apartment, which was constructed at

a density of 18-24 units per acre, had a product life-cycle of about 25 years, and for the last 10 of those years, it was in decline. Developers typically used multi-family complexes as a way to "warehouse" land with the hope that it would ultimately be developed for a higher use, such as an office building. They typically used cheap materials, such as wood siding and stucco, and built the apartments to be "exterior loaded" (like a roadside motel). Addison had several complexes that had reached the end of their viable life cycle, but there was not any plan to tear them down and redevelop them. They were simply renting for less and less, and deteriorating to the point that they did not provide safe, decent housing.

The staff investigated multi-family complexes in other parts of the United States and Europe and after looking at several older models in cities such as Boston, Chicago, and New York, it decided that deterioration in multi-family was not inevitable, but was a result of product design.

The staff and Vision 2020 group felt that the first things to deteriorate on low-density garden apartments were the asphalt parking lots and exterior doors and balconies. They felt that a higher density product, for example 66 to 100 units per acre, would force developers to build parking garages rather than surface lots, and require them to go to interior-loaded corridors (like an urban hotel), which would show less wear-and-tear than the exterior doors prevalent in the garden-style product. The committee also felt that requiring developers to build brick facades, as opposed to stucco or wood siding, would provide a higher-quality product. The Group determined that allowing developers to build at a higher density would allow them to build a better product—one that would not simply warehouse land, but be a highest and best use with a life-cycle of 50 years or more.

The Committee determined that it would lead Addison in a controversial new direction. While every suburb in the area was fighting against multi-family projects and insisting on lower densities, Addison would embrace them and insist on higher densities.



Bosque Park in Addison Circle

The Town Council adopted the new philosophy and found a chance to test it on Addison Circle. The Town identified an 86-acre raw land site adjacent to the Tollway and instructed the staff to seek out a developer to build a high-density, mixed-use development with a substantial multi-family base. High density multi-family on a raw land site in the suburbs was unheard of at that time and would be a risk for any developer. The Council, realizing that a developer would need an incentive, agreed to construct all the streets, parks, and plazas in the new development, and provide Town maintenance of all streets, parks, and plazas. That provided a "kick start" to the development and assured that all neighborhood amenities would be maintained to an Addison standard, and more importantly, they would be public and useable by all residents and

visitors to Addison. In 1996 construction began on the first multi-family project. Today Addison Circle is almost built-out and contains:

MULTI-FAMILY UNITS	2,141 UNITS
TOWNHOMES/ CONDOMINIUM UNITS	407 UNITS
OFFICE BUILDINGS	2 BUILDINGS CONTAINING 550,000 SQ. FT.
RETAIL/RESTAURANT	6 RESTAURANTS AND 75,000 SQ. FT.

The Town provided over $11,000,000.00 in infrastructure improvements which include a major public art work, Blueprints at Addison Circle, five parks and over a dozen tree-lined streets. Addison Circle has been a desirable place to live for renters in the north Dallas corridor since the first building was completed in 1997. It continues to draw good occupancies at the top of the rental market. It has won numerous design awards, and is an Urban Land Institute case study on mixed-use development. The staff has provided countless tours to planners and city officials from all over the world who marvel not only at the Town's decision to seek higher densities, but at its ability to actually make the project happen.

NORTH ADDISON

The Ledgemont Lane area contains most of the Town's stock of low-density garden apartments. There are 1,326 units on the east and west sides of Ledgemont Lane. Those units abut Quorum Park to the east and have immediate access to it. They are known as the Bent Tree units because all four complexes have the term Bent Tree in their names. They were constructed in the early 1980s, and while they are no longer at the top of the rental market, they have been very well maintained and provide an affordable housing product for the Town.



Bent Tree Trails Apartments

The Code Enforcement staff works diligently with the various managers of the complexes to see they are well maintained. Further north up Addison Road are two more complexes: Bent Tree Park and Bent Tree Gardens. These complexes were also built in the 1980s and are also garden-style products in the 18-20 units per acre range. At the very north edge of the Town is the Camden Addison complex. It contains 456 garden units and is bordered on the south edge by the North Addison Linear Park. The developer of the Camden Addison provided the land and funded the improvements for the North Addison Linear Park in order to provide a buffer between the project and the adjacent Addison Place subdivision and the Trinity Christian Academy. These garden-style units allow Addison to offer a variety of housing types for multi-family residents. However, the Town has to continue to be diligent about helping the complex owners keep these units

viable, safe, and well-maintained.

VITRUVIAN PARK/WEST ADDISON

The Town continues to believe that *more density-not less* is the right course for Addison, and in 2007 it embarked on its most ambitious project using its high-density approach. Addison, known among developers in the area for its density-friendly philosophy, attracted the notice of UDR, a multi-family REIT (Real Estate Investment Trust). UDR purchased the aging and very deteriorated Greenhaven complex in the Brookhaven Club area with the thought of rehabilitating it, but soon determined that it could not justify the remodel because it could not get higher rents when the other complexes around the Greenhaven were in as bad or worse shape. UDR determined that it could buy the other eight complexes in the area and approached the Town about a total redevelopment scheme. The Town encouraged UDR to rebuild at higher densities and incorporate the adjacent Greenhaven Village shopping center, Town trail system, and Brookhaven Community College into the plan.



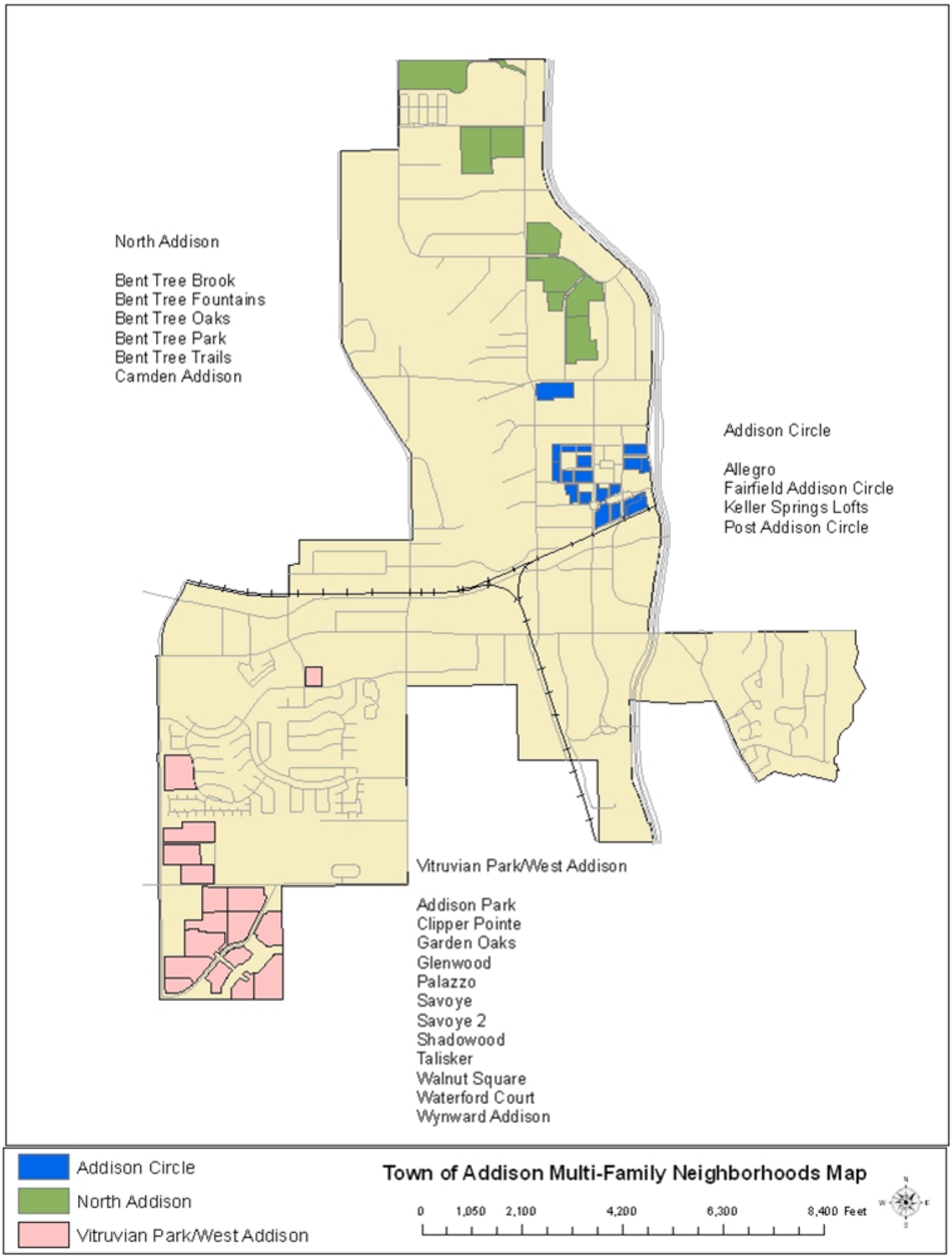
Vitruvian Park Master Plan

The result is Vitruvian Park, a 114-acre mixed use development featuring a multi-family base. At present, there are two completed complexes (Savoye and Savyoye 2) totaling 739 units and another 391-unit complex (Fiori) under construction.



Savoye and Savoye II

Once again, the Town funded the infrastructure so that all parks and open spaces could be developed and maintained to the Town's standard, and open and available to the public at all times. The first phase of the Vitruvian infrastructure was a 12-acre creekside park complete with two signature bridges, a plaza, fountains, and an amphitheater.


North Addison
Bent Tree Brook
Bent Tree Fountains
Bent Tree Oaks
Bent Tree Park
Bent Tree Trails
Camden Addison
Addison Circle
Allegro
Fairfield Addison Circle
Keller Springs Lofts
Post Addison Circle
Vitruvian Park/West Addison
Addison Park
Clipper Pointe
Garden Oaks
Glenwood
Palazzo
Savoye
Savoye 2
Shadowood
Talisker
Walnut Square
Waterford Court
Wynward Addison
Addison Circle
North Addison
Vitruvian Park/West Addison
Town of Addison Multi-Family Neighborhoods Map
0
1,050
2,100
4,200
6,300
8,400 Feet

To date, the development in Vitruvian Park has all taken place south of Vitruvian Way, the street that bisects the property from Marsh Lane to Spring Valley Road. North of Vitruvian Way there are approximately 1,000 of the original Brookhaven Club neighborhood multi-family units, which are at densities of 18-20 units per acre. The complexes are all owned by UDR and are scheduled to be torn down at some point and replaced with new, higher-density units, retail shops, and green spaces. There are also three complexes of garden apartments (Shadowood, Wynward Addison, and Addison Park) that are north of Spring Valley Road and were not purchased by UDR.

RENTER-OCCUPIED HOMES

NAME OF COMPLEX	STREET ADDRESS	NUMBER OF UNITS
ADDISON PARK	14600 MARSH LANE	212
ALLEGRO ADDISON PARK	15750 SPECTRUM DRIVE	393
BENT TREET BROOK	4820 WESTGROVE DRIVE	248
BENT TREE FOUNTAINS	16400 LEDGEMONT LANE	184
BENT TREE OAKS	4815 WESTGROVE DRIVE	196
BENT TREE PARK	4500 SOJOURN DRIVE	496
BENT TREE TRAILS	16300 LEDGEMONT LANE	202
CAMDEN ADDISON	17200 WESTGROVE DRIVE	456
CLIPPER POINT	4015 VITRUVIAN WAY	260
FAIRFIELD ADDISON CIRCLE	15700 QUORUM DRIVE	414
FIORI	3990 VITRUVIAN WAY	391
GARDEN OAKS	4005 VITRUVIAN WAY	181
GLENWOOD	3800 SPRING VALLEY ROAD	168
KELLER SPRINGS LOFTS	3800 KELLER SPRINGS ROAD	353
POST ADDISON CIRCLE	5009 ADDISON CIRCLE DRIVE	1,334
SAVOYE	3850 VITRUVIAN WAY	392
SAVOYE2	3875 PONTE AVENUE	347
SPRINGHAVEN	3820 SPRING VALLEY ROAD	184
SHADOWOOD	14500 MARSH LANE	184
TALISKER	3925 VITRUVIAN WAY	201
WALNUT SQUARE	4051 BELTWAY DRIVE	57
WATERFORD COURT	14700 MARSH LANE	196
WYNWARD ADDISON	3721 SPRING VALLEY ROAD	136
TOTAL		7,185

As noted both in this section and in the Town History section, Addison has different ideas about housing than its neighboring cities. It is an enclave for both higher-density owner-occupied and higher-density renter-occupied homes. The Town believes higher densities make several good things possible:

• They use land efficiently. Land in Addison is scarce and expensive. Higher densities do not waste land with heat-producing surface parking lots, but force multi- family developers to build parking structures.

• They waste less green space. Addison prefers to concentrate its grass and trees into meaningful open spaces rather than have scraps of landscaping tucked between garden apartment buildings or in side yards between single-family lots.

• Buildings can be constructed of better quality materials and have a longer life. Addison has already witnessed the staying power of the higher-density multi-family that was constructed in Addison Circle. The buildings have held up very well over the 15 years they have been constructed and are still sought after by tenants.

• They allow concentrations of population that make mass transit feasible. Higher densities provide populations that can ride transit. Addison Circle is a "transit- ready" development. It is built adjacent to the Cotton Belt rail line that is in the Dallas Area Rapid Transit (DART) system plan. Even though the train line is in the plan, it will take many years to get it constructed to Addison. However, Addison Circle has a density that will allow residents to live there and walk to mass transit. Very few locations in the Metroplex can boast of a density and location that is designed to work with mass transit.

• They encourage healthier life-styles. The Town attempts to connect all residential neighborhoods to common open spaces, to each other, and to adjacent retail areas so that residents can walk or bicycle to neighborhood amenities.

• They allow more people to live within Addison's small area and limited boundaries, thus providing more consumers for Addison's stores and restaurants and more employees for the jobs located within the Town.

Addison does not plan to build any more garden-style, low-density rental units, but will insist on higher densities and a mix of uses for any new developments, or redevelopments of existing multi-family properties. The Town also believes strongly in the idea that any home in Addison should be located within a neighborhood which provides recreational and social amenities such as a trail, park, plaza, or open space, and where possible, a pedestrian connection to other neighborhoods and to local retail uses. Pedestrian connections provide an important way for residents to connect to their neighbors and local services. The Town believes that the keys to long-term success for renter-occupied projects are the same as those for owner-occupied homes. They should be kept viable and maintained by keeping up with maintenance, linking neighborhoods together, and where possible, linking neighborhoods to local retail uses and recreation- al amenities such as trails, parks, and the Athletic Club.

GOAL:

Keep the renter-occupied housing stock in Addison competitive by ensuring it remains safe and well-maintained, and require that any new multi-family developments, or redevelopments, be built within neighborhoods that are supported with public facilities.

OBJECTIVES:

1. Support renter-occupied units with neighborhood amenities such as parks and trails.

STRATEGY: Require any new multi-family developments or redevelopments to provide recreational space and amenities for its residents.

2. Where possible, enhance existing amenities in neighborhoods.

STRATEGY: Institute an annual program for assessing quality and useful life of neighborhood amenities.

STRATEGY: Allocate funds on an annual basis for replacement or remodels as needed.

3. Improve the quality of Addison's existing multi-family product.

STRATEGY: Allow higher densities on redevelopment of older properties so that developers can build better quality buildings with structured parking.

4. Keep multi-family properties well-maintained.

STRATEGY: Maintain an active Code Enforcement program to see that all multi-family properties are maintained to an acceptable standard.

LAND USE - MIXED USE

A MIXED USE LEADER

Addison was one of the first communities in the Metroplex to embrace new urbanism and Mixed Use Communities. Addison Circle, when it developed in 1995, was the first high-density, mixed-use community to build in a suburb on a "green field" site. Addison Circle served as a model for Legacy Town Center in Plano, Southlake Town Center in Southlake, the West Village in Dallas, and other mixed use communities that combined multi-family housing, retail, and office uses. However, Addison went several steps beyond those other developments by combining the private sector development with the municipal development of the Addison Conference and Theatre Centre and Addison Circle Park. The influence of Addison Circle has been felt far beyond the metroplex, as the staff has hosted and toured city staffs and elected officials from as far away as Canada and Australia.

One of the lessons the Town learned on Addison Circle was that a mixed use development needs constant participation and support to stay viable. Addison provides that participation through maintenance of all the parks and landscaping within Addison Circle, and it provides additional support through the Special Events, such as Oktoberfest and Kaboom Town, which are held in Addison Circle Park, and the Summer Series, which brings live music to Addison Circle every Saturday night through the summer.

The Town built a reputation as a community that embraced and understood mixed use development, and that reputation served it well when UDR was considering the purchase of the nine apartment



Deck and a Community Room at Savoye 2 in Vitruvian Park.

complexes that would eventually become Vitruvian Park. Addison's expertise in building out and programming events for mixed use communities has helped Vitruvian Park get off to a very successful beginning through its first three projects.

Mixed Use communities, when first introduced into the Metroplex, were popular because of the novelty of being able to live above a shop or restaurant. However, "live above the shop" is not a new idea, but one that dates back to the Greeks and Romans. A vertical mix of land uses has always been normal in cities such as New York, Boston, and Chicago, but it was a new idea for the Dallas area and for Addison. While there are some challenges in integrating retail and residential uses into one structure, Addison's mixed use developments remain popular with residents

who want a more urban lifestyle, but don't want to live in downtown Dallas.



Beckert Park in Addison Circle.

LOOKING FORWARD.

As Addison continues to mature, the mixed use direction continues to make sense for the Town. Land has always been a precious commodity for Addison, and will be even more so in the future. Mixed Use developments provide a more efficient use of land, particularly when they incorporate structured parking. In addition, as gas prices continue to rise, more and more people will seek a location close to work. Also, the "Millennials", which is the demographic term used to describe the huge mass of young adults that are graduating from college and entering the work force, do not seem to be as enamored of automobiles and driving as previous generations. The children of the baby boomers represent a huge demographic group, much like the baby boomers themselves. The early indicators for this group show that they prefer to live in mixed use environments with access to shopping, coffee shops, restaurants, and transit. This "facebook" generation is much more interested in their neighborhood than their individual unit, and they are less likely than their parents and generations ahead of them to embrace a lifestyle that involves a daily commute of more than 10 minutes. They also seek mixed use communities that include multi-family uses. Millennials with jobs do not expect to keep them for their lifetime, and they are less likely to purchase a home because they want the flexibility to move to a new job in another city or state. Mixed use communities in other cities have been very successful at attracting these new "creative class" residents, and Addison, like most other communities, also seeks to attract the Millennials because they bring energy and creativity to a community. What's more, world-class corporations who are looking to move or establish a new location, seek locations where their current employees, or future employees they want to attract, find desirable. Vibrant mixed use neighborhoods can be a great recruiting tool for attracting new tenants for office and commercial space.

Mixed use communities also make sense for Addison because they present an opportunity to build character and a sense of place for the Town. They create neighborhoods where multi-family residents and homeowners can meet their neighbors in the parks and shops within the development and socialize with them In fact, the parks in Addison Circle and Vitruvian Park are the most popular spots in the development and provide the "third places" that make a community welcoming and livable.

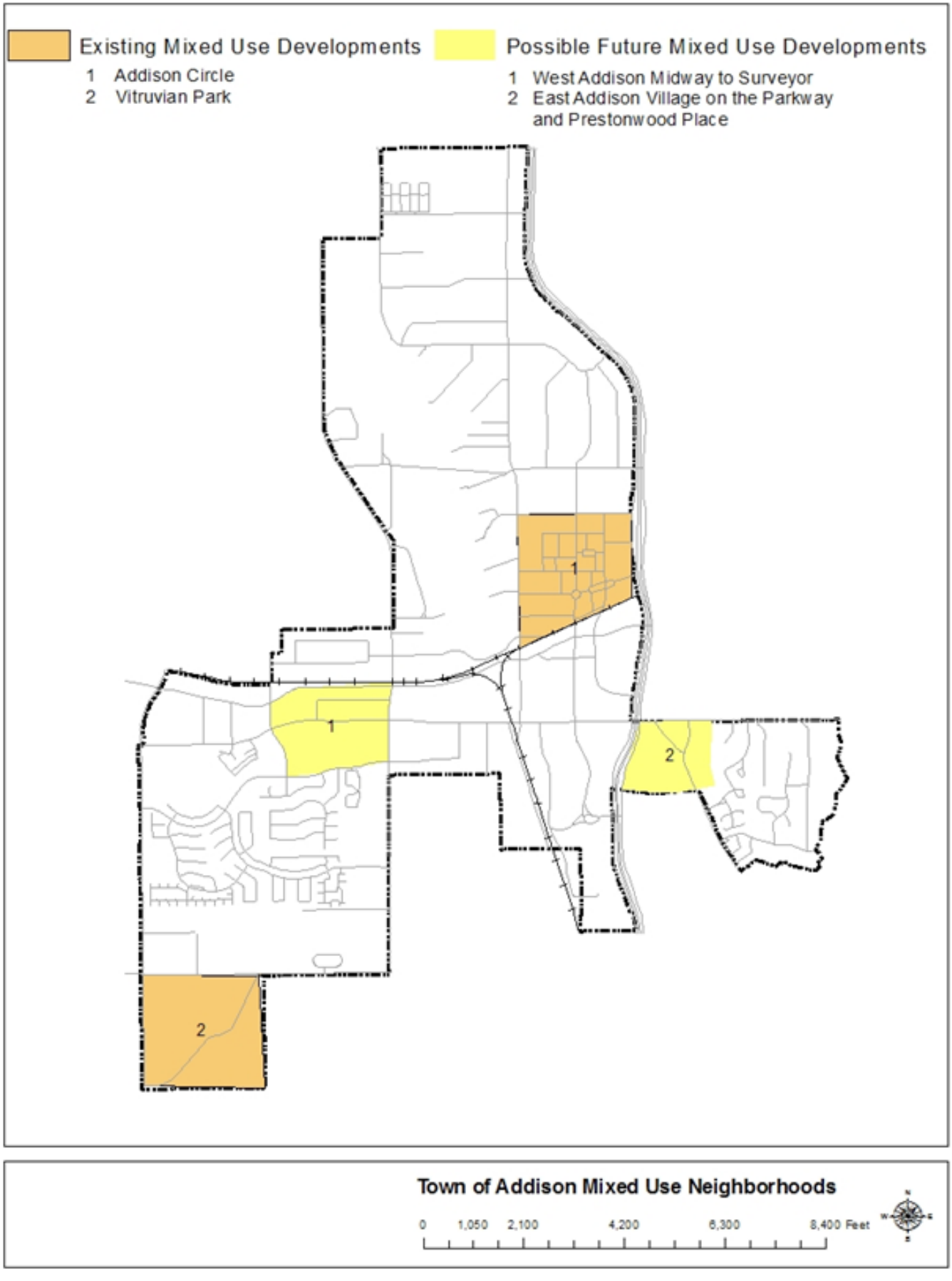


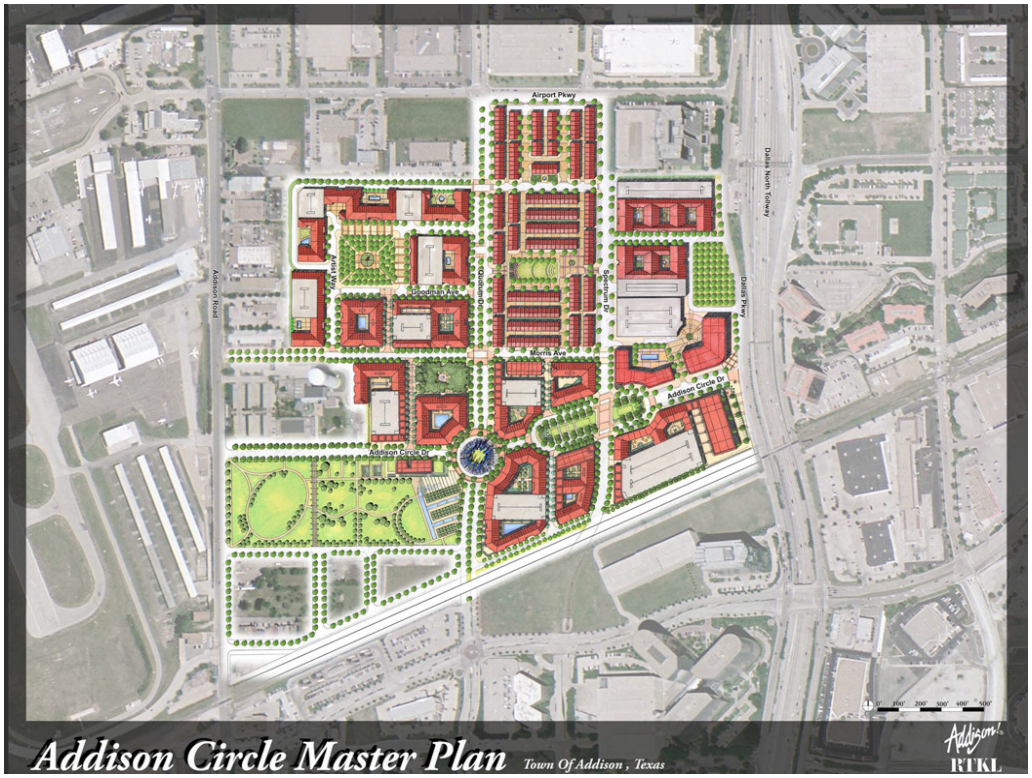
The Fiori at Vitruvian Park, currently under construction.

Addison should consider mixed use developments as a viable alternative as sections of the Town face redevelopment. Several locations along Belt Line Road would lend themselves to to mixed use development, as well as other locations such as the Village on the Parkway (5100 Belt Line Road) and the Prestonwood Place shopping center (5290 Belt Line Road). As the population of the United States and the Metroplex continues to increase and natural resources continue to dwindle, more and more cities will find themselves moving in the Live Above the Shop direction that Addison has already embraced.

GOAL:

Continue to support Addison's mixed use developments through maintenance of public spaces and programming to keep the spaces vibrant, and consider additional mixed use developments as older areas of the city become ripe for redevelopment.


Existing Mixed Use Developments
1 Addison Circle
2 Vitruvian Park
Possible Future Mixed Use Developments
1 West Addison Midway to Surveyor
2 East Addison Village on the Parkway and Prestonwood Place
1
1
2
2
Town of Addison Mixed Use Neighborhoods
0 1,050 2,100 4,200 6,300 8,400 Feet



PROJECTS:

1996, Columbus Realty Phase I:	460 multi-family units
	10,000 square feet retail
1997, Post Properties, Phase II:	610 multi-family units
	65,000 square feet retail
	340,000 square feet office
	6 townhomes
1999, Posat Properties, Phase III:	264 multi-family units
1999, Aventura Condominiums:	86 condo units
2005, CityHomes Condominiums:	183 condo units
2006, Fairfield Residential:	414 multi-family units
2006, Allegro I and II:	393 multi-family units
2008, Savannah Homes:	48 townhomes
	90 condo units
2007, OPUS West Group	201,000 square feet office

TOTALS

Multi-family units:	**2,141 units**
Townhome/Condominium units:	**407 units**
Office:	**550,000 square feet**
Retail:	**75,000 square feet**



PROJECTS:

2009, Savoye	392 multi-family units
	10,000 square feet retail
2011, Savoye 2	247 multi-family units
	34,000 square feet office
2012, Fiori	391 multi-family units

CURRENT TOTALS:

Multi-family units:	**1,130 multi family units**
Office:	**34,000 square feet**
Retail:	**10,000 square feet**

PROJECTED TOTALS:

Multi-family units:	**6,401**
Office space:	**77,000**
Retail space:	**174,200**

Addison Housing Unit Break Down
Updated May 2016

Single Family	Current	*Projected*
Addison Place	174	*174*
Bellbrook/Havenshire	43	*43*
Celestial Place	21	*21*
Lake Forest Dr and Hodge Lot	14	*14*
Les Lacs	733	*733*
Midway Meadows	284	*284*
Oaks North	118	*118*
Park Place	43	*43*
Winnwood/Celestial	37	*37*
Total	**1,467**	***1,467***

Town Homes		
Asbury Circle	74	*74*
Brookhaven Townhomes	32	*32*
Meridian Square	42	*42*
Morris Ave Townhomes	6	*6*
Stanford Court	19	*19*
Townhomes of Addison	95	*95*
Towne Green	37	*37*
Towne Lake	24	*24*
District A	182	*182*
La Mirada	44	*44*
Future Addison Grove	-	*178*
Total	**555**	***733***

Condominiums/Flats		
Aventura	87	*87*
Valley of Bent Tree	102	*102*
Pecan Square	66	*66*
Meridian Square*	90	*90*
Total	**345**	***345***

* Under Construction

MultiFamily	Current	*Projected*
Garden		
Addison Park	212	*212*
Bent Tree Brook	248	*248*
Bent Tree Fountains	184	*184*
Bent Tree Oaks	196	*196*
Bent Tree Park	496	*496*
Bent Tree Trails Apartments	202	*202*
Camden Addison	456	*456*
Clipper Pointe Apartments	260	-
Garden Oaks Apartments	181	-
Glenwood Apartments	168	-
Shadowood Apartments	184	*184*
Springhaven Apartments	184	-
Talisker of Addison	240	-
Walnut Square Townhomes	57	*57*
Waterford Court Apartments	196	*196*
Wynward Addison Apartments	136	*136*
Total	3,600	2,567
Urban		
Allegro Addison Circle	272	*272*
Allegro Addison Circle II	121	*121*
Fiori	391	*391*
Keller Springs Lofts	353	*353*
Post Addison Circle	1,334	*1,334*
Savoye	392	*392*
Savoye 2	347	*347*
Fairfield Addison Circle, LP	414	*414*
Future Vitruvian	-	*4,431*
Future Addison Grove	-	*330*
Total	**3,624**	***8,385***
Total Multi-Family	**7,224**	***10,952***
Grand Total Housing	**9,591**	***13,497***

MultiFamily	75.3%	*81.1%*
Garden	*37.5%*	*19.0%*
Urban	*37.8%*	*62.1%*
Single Family	15.3%	*10.9%*
Town Homes	5.8%	*4.1%*
Condominiums/Flats	3.6%	*2.6%*

memo

STRATEGIC COMMUNITY SOLUTIONS

Strategic Community Solutions LLC	
To:	Addison Mayor and City Council
From:	Karen Walz
Date:	February 20, 2015
Re:	Results of Housing Workshop

On Monday, February 16, 2015, the Addison City Council held a workshop to discuss housing issues and opportunities. Strategic Community Solutions, LLC, Ricker-Cunningham and Kimley-Horn provided background information and facilitated the discussion. This memo summarizes key points about the Council agreement on housing issues. It also provides additional information in response to Council questions. Finally, it outlines a proposed set of next steps to formalize and implement this agreement.

Workshop Objective: Council discussion, agreement and direction on housing issues in the Town of Addison.

Workshop Outcomes: By the end of the workshop, the Council had:

- A common understanding of the terminology used to describe various housing choices.
- A shared agreement about the housing choices that will best support the Council's view of Addison's desired future.
- Provided general direction to staff about steps to take so Addison's development and redevelopment over time provides these housing choices. This memo includes staff's recommendations for action.

Housing Choice Terminology

The housing choices shown in Table 1 below. For each housing choice, we describe the housing type (the physical characteristics of the unit) as well as the housing tenure (the ownership status of the unit). Note that units which are individually owned are not necessarily owner-occupied; the unit owner may rent these units to a tenant. Detailed information about each housing choice are provided in tables at the end of this memo.

Table 1: Housing Choices for Addison

#	Housing Choice	Housing Type	Housing Tenure
1	Detached Home	Single unit in a building with yards on some or all sides	Each unit is individually owned
2	Townhome/ Rowhouse	Multi-story unit on its own lot that shares a wall with at least one other unit.	Each unit is individually owned. The land on which the unit is located may or may not be individually owned.
3	Flat	Single story unit in a multi-story building that includes other residential and non-residential uses.	Each unit is individually owned.
4	Garden Apartment	Unit in a 2 or 3 story residential building.	Building owner(s) rent individual units to residents.
5	Urban Apartment	Unit in a multi-story building that includes other residential and non-residential uses.	Building owner(s) rent individual units to residents.
6	Extended Stay Hotel Room	Hotel structure with cooking facilities in rooms.	Hotel owner(s) rent individual rooms to guests; in some instances, these guests are essentially long-term residents.
7	Assisted Housing Unit	Unit in a building that includes common areas and services to assist residents in daily life activities.	Building owner(s) rent individual units to residents.

Council Direction on Housing Issues: The points listed below reflect the Addison City Council's direction, as we understand it. They describe the housing choices that are part of the future City Council desires for this community.

- Whenever possible, the Town should establish plans for revitalization and development for districts or special study areas, instead of considering plans on a site-by-site basis. A process like the one used for the Sam's Club Special Study Area should be followed.
- For study areas and individual developments, the Town encourages mixed use designs that integrate residential and non-residential components.
- Mixed use developments in Addison should include a mix of housing choices, not simply a single residential option.

- The Town encourages development that makes more individually owned housing choices available in Addison. Desired ownership units include detached homes, townhome/rowhouse and flats, so a wide range of residential densities support this objective and may be approved.
- At the property or project scale, Addison will consider the highest and best use of the property and the 'best fit' mix of uses and housing choices for that property within the context of the entire Addison community.
- Addison will continue to insist on high quality building and site design, an inviting public realm and trails or sidewalks that connect each building with the rest of the Addison community.
- Addison views independent and/or assisted housing as housing choices which address the demands of the growing 55+ age group and as a potential fit with this community's character. Since there are no assisted housing units in Addison today, the Town will conduct research and investigation to understand how this housing could or should be included in Addison's future.

Potential Next Steps: The items below propose steps to formalize and implement this City Council direction over the next 18 months. Staff will take the lead on carrying out these steps and will bring products back to Council for consideration and action.

- Take action to provide policy direction for the Sam's Club Special Study Area. The Council should consider and act on the recommendations from its study area committee.
- Review and refine the 2013 Comprehensive Plan to reflect this Council direction.
    - The goals, objectives and strategies for residential land use and mixed use development should be reviewed.
    - The maps or diagrams that illustrate appropriate development patterns and intensities in Addison may need revision as well.
    - The Council has identified three areas from the plan for special revitalization studies. As these studies are completed, new study areas may be identified and added to the plan.
    - The plan's policy direction for land use change outside these special study areas should be clarified, so property owners and developers understand the Town's intent for redevelopment in other parts of the Town.
- Research the market for flats and identify barriers that may discourage or delay the construction of this housing in Addison. Determine what actions by the Town could remove those barriers and implement those actions supported by the Council.
- Investigate examples in other US regions where redevelopment of commercial properties has included detached homes. Understand what factors are important to the projects' successes. Determine how these examples might be applied as part of Addison's future.

- Investigate tools that help address the past experience of market volatility for condominium ownership units. Determine what actions by the Town could reduce that volatility and implement those actions supported by the Council.
- Ensure that Town programs and incentives do everything they can to ensure that housing, once it's built, remains desirable. Work with owners of existing urban apartment complexes to understand and support their initiatives to keep these areas thriving. Do the same with owners of existing garden apartment complexes, and with the homeowner associations in the townhome, rowhouse and detached home neighborhoods within Addison.
- Research the details of independent/assisted housing for the 55+ age group – what is included in the various housing products and what factors make them successful. Investigate the demographic and market trends affecting demand for these units in Addison. Determine how or whether independent/assisted housing units fit in Addison's future.
- If independent/assisted housing is found to be a desirable component of Addison's future housing mix, prepare a set of design guidelines for these projects, so their physical design will be compatible with the Addison community.
- When resources are available, initiate processes like the one used for the Sam's Club Study Area for redevelopment of the Inwood Road and Midway West areas.

Implications of Housing Choices

Table 2 provides information on the implications of typical examples of these housing choices. It shows the typical density and value per acre for each housing type. These values have been updated by Ricker-Cunningham in response to the Council's discussion. In the February 16th presentation, density and unit values were based on 2014 sales in Addison and surrounding Trade Area communities, weighted toward sales within the Town. In response to Council's discussion, current (2015) listings for single family, townhome/rowhouse, and condominium/flat units were reviewed to further "test" values going forward. Because single family detached units in Addison tend to be at a higher density than surrounding communities, the value per acre calculation was adjusted upward. Current listings of condominium/flat units also supported an increase in value per acre for that housing product type.

Table 2 also shows the rate of crime per unit based on actual data from the Addison Police Department for the past six months.

Table 2: Implications of Housing Choices

Housing Choice	Density (Units/Acre)	Value per Acre	Crimes/ Unit
Detached Home	6	$2,100,000	0.036
Townhome/ Rowhouse	12	$4,200,000	0.032
Flat	30	$6,750,000	0.032
Garden Apartment	20	$1,600,000	0.063
Urban Apartment	50	$5,750,000	0.022
Extended Stay Hotel Room			0.079
Assisted Housing Unit (none in Addison today)			NA

Source: Strategic Community Solutions LLC; Kimley-Horn; Ricker-Cunningham.

Table 3 provides information on the number of units that exist today in the Town of Addison and the share of existing housing units (including the Extended Stay Hotel Rooms) represented by each of these Housing Choices. Though Extended Stay Hotel Rooms and Assisted Housing Units are not generally considered as part of a community's housing stock, these housing choices are included here because they are relevant in terms of existing or future choices in Addison. Table 3 also shows Addison's future housing choices if the units in Vitruvian's remaining phases are added to the existing housing stock and the garden apartment units that they replace are deducted from the existing housing stock.

Table 3: Mix of Housing Choices

Housing Choice	Existing Units	% of Units	Existing and Future Vitruvian Units	% of Units
Detached Home	**1,467**	**13.9%**	**1,467**	**9.3%**
Townhome/ Rowhouse	**555**	**5.3%**	**555**	**3.5%**
Flat	**345**	**3.3%**	**345**	**2.2%**
Garden Apartment	**3,600**	**34.2%**	**2,567**	**16.3%**
Urban Apartment	**3,624**	**34.4%**	**9,856**	**62.6%**
Extended Stay Hotel Room	**945**	**9.0%**	**945**	**6.0%**
Total Units	**10,536**	**100.0%**	**15,735**	**100.0%**

Details of Workshop Discussion

The Council's discussion addressed the questions shown below. Comments on each question are presented here based on notes recorded on flip charts during the discussion.

1. **How do each of these housing choices contribute to the Council's view of Addison's desired future?**

Detached Home

- It's consistent with what I know
- Is it feasible here?
- More stable residences and residents
- Difficult in infill locations due to land price
- Need to learn lessons from other areas of country on how to model infill detached residential and redeveloped detached housing
- Cambridge Crossing may be good prototype for smaller lot detached
- School district may drive demand
- Need detached to provide balance to community
- Balance will continue to decrease since there's not much room left for this

Townhome/Rowhouse

- Will be good fit – infill and redevelopment
- Provide neighborhood stability since they're ownership units
- Individuality of units
- More opportunity for unique design
- May bring better balance of ownership units
- Increase value so there will be future reinvestment in parcels with single family

Flats

- Condos tend to become rental in a down economy
- Provide stability (ownership)
- Better balance (ownership)
- Flats tend to lead the downward trend in the real estate market and are the last to rebound
- More tendency to go into default
- Appeal to Active Seniors and Millennials

Garden Apartments

- Less quality than urban

- Values go down over time
- Demographics in units change over time

Urban Apartments

- Appeal to people who are "renters by choice"
- Have a large number in Addison
- Post Properties project (in Addison Circle) has aged well
- Natural fit in Addison's commercial environment (opportunities for people to live here and walk to work in office buildings)
- Need these to attract corporations
- Demand for live/work/play
- Attract desirable demographics (Empty Nesters/Millennials)

Extended Stay Hotel Room

- Serves a purpose – have adequate supply
- Difficult for a city to regulate – pre-empted by state
- Not typical to have residents in lodging – need to regulate
- Risky for Addison until State regulates (close loopholes)

Assisted Housing

- Need to add to mix to provide balance
- Desired by existing residents who want to stay in Addison
- Addison has no experience in this – What are the issues? – Next step may be to Research/Education; we have no knowledge currently
- Should be high priority
- People need all levels of care
- But Addison has only 4.4 square miles – we may not provide for all needs
- Flats serve part of this need
- There may be other options that property owners will bring forward that Council wants to entertain

2. What mix of housing choices is most desirable for Addison in the future?

Short Term	Long Term
	Mixed Use with open space Look at bigger picture (on larger sites) Mixture of housing choices Diversify some uses as they redevelop

What mix is desired by Council?

- Want more owner occupied (detached, townhome, flats)✓✓✓
- Want highest and best use and best fit for parcel by parcel✓✓✓
- For redevelopment of existing commercial areas, want multi-use, including a variety of residential (mix of choices)
- 85% multi-family is out of balance – want more ownership – could be condo/flat/townhome/detached✓✓
- Don't want rezonings for multi-family alone
- Want a process for looking at larger chunks of land
- Want to start the learning curve on assisted living

3. Where could or should desired new housing locate within Addison?

The Council did not address this issue, but recognized it could be part of a future discussion.

4. What steps could or should the Town take to shift the market to achieve the desired mix? The answers to this question will provide staff with direction for action on next steps. Some of these steps could be:

a. Removing barriers to investment
b. Changing plans and development policies/regulations
c. Making Town infrastructure investments
d. Changing Town incentives

The Council agreed that staff should develop recommendations for these next steps.

AI-2036 **6.**
Work Session and Regular Meeting
Meeting Date: 01/10/2017
Department: City Secretary

AGENDA CAPTION:
Consider **Approval Of The December 13, 2016 Regular Meeting Minutes.**

BACKGROUND:
The City Secretary has prepared the minutes for approval.

RECOMMENDATION:
Administration recommends approval.

Attachments

Minutes

D R A F T

OFFICIAL ACTIONS OF THE ADDISON CITY COUNCIL
WORK SESSION

December 13, 2016
Addison Town Hall, 5300 Belt Line Rd., Dallas, TX 75254
5:00 PM Executive Session
6:00 PM Work Session
7:30 PM Regular Meeting

Present: Mayor Meier; Mayor Pro Tempore Arfsten; Deputy Mayor Pro Tempore Hughes; Councilmember Angell; Councilmember Duffy; Councilmember Walden; Councilmember Wilcox

Executive Session

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1. Closed (executive) session of the Addison City Council pursuant to:

   Section 551.072, Tex. Gov. Code, to deliberate the purchase, exchange, lease, sale or value of real property

   - **4460 Belt Line Road, Addison, TX 75001**
   - **4500 Belt Line Road, Addison, TX 75001**

   Section 551.074, Tex. Gov. Code, to deliberate the appointment, employment, evaluation, reassignment, duties, discipline or dismissal of a public officer or employee, pertaining to:

   - **City Manager Evaluation**

   Council convened into Executive Session at 5:01 pm.

Reconvene from Executive Session

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2. **RECONVENE INTO REGULAR SESSION:** In accordance with Texas Government Code, Chapter 551, the City Council will reconvene into Regular Session to consider action, if any, on matters discussed in Executive Session.

Council recessed from Executive Session at 5:51 pm.

Deputy Mayor Pro Tempore Hughes moved that Council authorize the City Manager to negotiate and execute necessary documents to sell properties at 4460 Belt Line Road and 4500 Belt Line Road.

Council reconvened into Executive Session at 5:52 pm.
Council adjourned from Executive Session at 7:37 pm.

WORK SESSION

3. Present And Discuss **The Purpose And Proposed Process For An Asset Management Plan For The Town Of Addison**

Due to time constraints, Council moved this item to the January 10, 2017 meeting.

4. Present And Discuss **The Housing Policy For The Town of Addison.**

Due to time constraints, Council moved this item to the January 10, 2017 meeting.

REGULAR MEETING

Pledge of Allegiance

Announcements and Acknowledgements regarding Town and Council Events and Activities

Discussion of Events/Meetings

5. Present A **Proclamation Acknowledging The Service And Accomplishments Of Tom Lamberth.**

Public Comment.
The City Council invites citizens to address the City Council on any topic not on this agenda. Please fill out a **City Council Appearance Card** and submit it to a city staff member prior to Public Participation. Speakers are allowed **up to three (3) minutes per speaker** with **fifteen (15) total minutes** on items of interest or concern and not on items that are on the current agenda. In accordance with the Texas Open Meetings Act, the City Council cannot take action on items not listed on the agenda. The Council may choose to place the item on a future agenda.

Mayor Meier stated there were cards requesting to speak on items that were on the agenda and asked Council to consider allowing these citizens to speak.

Mayor Pro Tempore Arfsten stated it seemed that the exception was being applied at every meeting rather than a few.

Councilmember Duffy agreed and stated he felt more inclined not to allow the requests to speak on items listed on the agenda. Councilmember Duffy stated the rules are stated on the agenda and citizens are aware what can be covered during the Public Forum.

Deputy Mayor Pro Tempore Hughes stated he would be inclined to let these requests speak but go forward from this point on to communicate clearly that in the future there should not be an expectation that someone can speak on a topic on the agenda. Deputy Mayor Pro Tempore Hughes stated changing the way Council allows citizens to speak would be changing the way Council has done business in the past. Mayor Meier stated he didn't believe that Council has ever denied anyone the chance to speak. Mayor Meier stated he believed it was an effort to be transparent and let everyone have an opportunity to speak.

Deputy Mayor Pro Tempore Hughes moved to allow the 3 citizens speak and communicate clearly that in the future it should not be an expectation that someone can speak on a topic on the agenda. Mayor Meier seconded the motion. The vote was cast 5-1 in favor of the motion. Councilmember Duffy voted against. Councilmember Angell abstained.

Fran Powell, 14796 Lochinvar Court, spoke regarding the difference between citizens who own homes and those who rent.

Sheila Barkofske, 4130 Proton #26 B, spoke regarding the COLA agenda item.

Kristine Edens, 5034 Meridian Lane, spoke regarding the Housing policy item.

Consent Agenda:

All items listed under the Consent Agenda are considered routine by the City Council and will be enacted by one motion with no individual consideration. If individual consideration of an item is requested, it will be pulled from the Consent Agenda and discussed separately.

Councilmember Angell asked to pull item #8.

Mayor Meier asked to pull items #9, #10 & #11.

Mayor Pro Tempore Arfsten moved to approve Items #7, #12-16 as submitted. Deputy Mayor Pro Tempore Hughes seconded the motion. The vote was cast 7-0 in favor of the motion.

Item #8- Councilmember Angell stated he wanted to thank the staff for all the hard work on this project. Councilmember Walden moved to approve Item #8 as submitted. Councilmember Duffy seconded the motion. The vote was cast 7-0 in favor of the motion.

Item #9- Mayor Meier stated he wanted to voice appreciation for the applicant doing the improvements and overall project for this item. Mayor Meier moved to approve Item #9 as submitted. Deputy Mayor Pro Tempore Arfsten seconded the motion. The vote was cast 7-0 in favor of the motion.

Item #10- Mayor Meier stated he wanted to thank the staff for the hard work to complete the bond funded project. Mayor Meier moved to approve Item #10 as submitted. Deputy Mayor Pro Tempore Hughes seconded the motion. The vote was cast 7-0 in favor of the motion.

Item #11- Mayor Meier stated he appreciated the hard work staff put into the priorities for the legislative agenda. Mayor Meier asked Council what to do next now that the priorities have been set. Council agreed that Mayor Meier, Mayor Pro Tempore Arfsten and Deputy Mayor Pro Tempore Hughes would make visits to Austin as necessary to discuss priorities with the Town's representatives.

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7. Consider **Approval Of The November 8 And November 14, 2016 Regular Meeting Minutes.**

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8. Consider Authorizing The City Manager To **Approve A Final Payment To Shirley and Sons Construction Co. Inc., For The Dredging Of The Winnwood Ponds** In The Amount Of $58,833.47.

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9. Consider Authorizing The City Manager To **Approve An Amendment To The Ground Lease At 4500 Westgrove Drive With Key Development, LLC.**

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10. Consider Action On The **Final Payment To Groves Electric Company For The Completion Of The Beltway/Proton Pedestrian Connectivity Project** In An Amount Of $101,392.02.

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11. Consider Action On A **Resolution Adopting The 2017 Legislative Agenda For The Town Of Addison, Texas; Directing The City Manager Or His Designee To Act With Regard To The Town's 2017 Legislative Agenda** .

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12. Consider Action On An **Ordinance Amending Section 62-138 Of The Code Of Ordinances Concerning Holiday Decorations By Extending The Display Period For Such Decorations And By Establishing Dates For The Installation And Removal Of Holiday Lights From Trees.**

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13. Consider Action On A **Resolution Authorizing The City Manager To Approve the Assignment Of The Economic Development Program Grant Agreement For The Addison Grove Redevelopment From Beltline Beltway Investments, Ltd. and Urban InTownhomes, LLC to Texas Capital Bank.**

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14. Consider Action On **A Resolution For A Consulting Services Agreement With Solutions For Local Control, LLC,** In The Amount Of $36,000.

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15. Consider Action On **A Resolution Authorizing The City Manager To Enter Into An Agreement With The Charter Communications For The Installation, Maintenance and Support Of A Network Of Hotspots At 13 Locations.**

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16. Consider Action On **A Resolution Approving Fee Increase For City Attorney Services.**

Regular Items

17. Hold A Public Hearing, Discuss, And Consider Action On A **Resolution Adopting A New Master Transportation Plan For The Town Of Addison**. Case 1750-Z/Town of Addison.

Assistant Director of Development Services Charles Goff presented the item to Council. Mr. Goff stated this item was continued from the previous meeting. Mr. Goff listed the names of the committee members and stated all members were invited to the meeting.

Mayor Meier thanked all committee members for their hard work on the plan.

Councilmember Duffy asked how the staff will apply this plan moving forward and if the plan was for redevelopment only or for new development.

Mr. Goff stated implementation is a two-part conversation. The intent of the plan is to put the standards in place and the second part is how to achieve those standards. Mr. Goff stated achieving those standards could take on many different forms from purchasing right of ways for the Town to improve or require improvements to be completed by an applicant when they want to redevelop a site. Mr. Goff stated a policy would have to be developed to determine what would trigger a redevelopment and make those standards effective.

Councilmember Duffy stated it would be helpful for staff to bring back a policy that details at what point the standards kick in for a piece of property, particularly for an existing piece of property.

City Manager Wes Pierson stated the policy is an intent to try to get ahead of the future redevelopment and future infrastructure projects. Mr. Pierson stated if Council wished to hold tightly to the standards, the projects in the future will be looked at very closely when trying to apply the standards in the plan.

Deputy Mayor Pro Hughes stated his question all along was whether or not Council was serious about the plan and implementing the standards.

Councilmember Duffy asked if the standards would be applied to the Addison Grove development.

Mr. Goff stated the standards already had been applied.

Mayor Meier stated the Addison Grove standards are at the extreme end of the spectrum of the example. Mayor Meier stated he wasn't worried about those cases but he was concerned about the properties in the middle group. Those would need some clarity of policy and guidance for both staff and the the development community so everyone knows what the standard expectations will be.

Deputy Mayor Pro Tempore Hughes stated as he looked at the plan and voiced concerns over funding all standards mentioned in the plan, especially in regards to the sidewalks, curbs and parking. Deputy Mayor Pro Tempore Hughes also stated his belief that citizens need to be involved in making decisions on the second level feeder streets.

Mayor Meier agreed the plan is a great template for moving forward.

Councilmember Wilcox stated that implementing the plan and finding the right balance of all its aspects will be a long-term project, but it doesn't mean the Town shouldn't do it.

Deputy Mayor Pro Tempore Hughes questioned if the plan cannot be adopted fully for the two major thoroughfares, Midway Road and Belt Line Road, then why adopt it at all. Mayor Pro Tempore Hughes stated he would suggest tabling the item to give Councilmembers time to decide if they are comfortable with the guidance or if the standards are too much and need to be changed before adopting.

Mayor Meier stated he had read the plan and believed the plan was a good plan. Mayor Meier stated he also knew that future Council and staff will tweak the plan to make it work for the situation presented. Mayor Meier asked if as stated from Deputy Mayor Pro Tempore Hughes has Council read the plan and fine with the standards presented?

Deputy Mayor Pro Tempore Hughes stated he was not comfortable adopting a plan and giving guidance that cannot be funded or followed due to lack of resources.

Councilmember Wilcox stated the plan is long term and there may be time in the future when the funding will not be available. Councilmember Wilcox stated the plan has to start somewhere.

Mayor Pro Tempore Arfsten asked Mr Goff how long of a shelf life a plan like the one presented has.

Mr. Goff stated the plan will get the Town to 2040 and will be reviewed every 5 years to adapt as needed. Mr. Goff stated at the plan is for optimal conditions. If there are sites where the plan doesn't fit due to financial limitations or the site cannot adapt to the plan, developers can be asked to do less than the plan if warranted for the site. Mr. Goff stated it harder to ask for more than is what is in the plan, but the Town has the discretion to pare down the requirements if necessary.

Mayor Meier opened the Public Hearing.

Mary Carpenter, 4006 Winter Park, spoke regarding adopting the plan and encouraged Council to engage the citizens when making decisions on the second level feeder streets.

Mayor Meier closed the Public Hearing.

Councilmember Wilcox moved to approve item #17 as submitted. Councilmember Angell seconded the motion.

Deputy Mayor Pro Tempore Hughes stated he would be voting against the item due to the fact that the plan is still very conceptual in nature and he felt there were no concrete ideas for guidance. Deputy Mayor Pro Tempore Hughes stated he believed when the plan didn't go well in the future, it will come up that the public didn't understand the plan fully.

The vote was cast 6-1 in favor of the motion. Deputy Mayor Pro Tempore Hughes voted against.

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18. Present, Discuss, And Consider Action On A **Resolution Approving A Contract With Flowline Construction, Inc., For The Construction of The Vitruvian Phase 5 Public Infrastructure** In The Amount Of $3,823,868.

    Director of Infrastructure and Development Services, Lisa Pyles, informed Council that due to issues with the contract, staff was requesting this item would be moved to the January 10, 2017 meeting for action.

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19. Present, Discuss, And Consider Action On A **Resolution Authorizing The City Manager To Award A Professional Engineering Services Agreement to Kleinfelder, Inc., For Materials Testing Services Associated With The Construction Of The Vitruvian Phase 5** In The Amount Of $58,100.

    Assistant Director of Infrastructure, Jason Shroyer, presented the item to Council. Mr. Shroyer stated the item would approve the professional engineering services agreement for material testing with Kleinfelder for the Phase 5 of Vitruvian. Mr. Shroyer stated that staff was very pleased with past work done by Kleinfelder for Virtuvian projects.

    Councilmember Duffy moved to approve item #19 as submitted. Mayor Pro Tempore Arfsten seconded the motion. The vote was cast 7-0 in favor of the motion.

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20. Present, Discuss, And Consider Action On A **Resolution Authorizing The City Manager To Approve A Contract With UDR, Inc., For Construction Management Services In Connection With The Construction Of The Public Infrastructure Improvements For Phase 5 Of The Vitruvian Development Located At Marsh Lane And Vitruvian Way** In The Amount Of $305,909.44.

    Director of Infrastructure and Development Services Lisa Pyles presented the item to Council. Ms. Pyles stated this item would approve UDR as the construction manager for the construction of the public infrastructure improvements. Under this agreement, UDR will ensure that the improvements are completed in a timely manner and in accordance with the construction contract documents, plans, and specifications.

    Councilmember Walden moved to approve item #20 as submitted. Deputy Mayor Pro Tempore Hughes seconded the motion. The vote was cast 7-0 in favor of the motion.

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21. Present, Discuss, And Consider Action On A **Resolution Authorizing The City Manager To Award A Professional Engineering Services Contract To Icon Consulting Engineers, Inc., For Public Infrastructure Design Services Associated With The Vitruvian Phase 8 Development** In The Amount Of $97,800.

Assistant Director of Infrastructure Jason Shroyer presented the item to Council. Mr. Shroyer stated this design contract is only for the commercial development at Marsh Lane and Spring Valley Road. ICOn has designed all the public infrastructure at Vitruvian to date.

Deputy Mayor Pro Tempore Hughes moved to approve Item # 21 as submitted. Mayor Pro Tempore Arfsten seconded the motion. The vote was cast 7-0 in favor of the motion.

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22. Hold A Public Hearing, Discuss, And Consider Action On An **Ordinance Rezoning The Property Located At 5280 Belt Line Road At The Southwest Corner of Belt Line Road and Montfort Drive, Which Is Currently Zoned LR, Local Retail, By Approving A New Special Use Permit For A Restaurant And A New Special Use Permit For The Sale Of Alcoholic Beverages For On-Premises Consumption Only**. Case 1747-SUP/Meso Maya.

Assistant Director of Development Services Charles Goff presented the item to Council.

Mayor Meier asked if the Master Transportation Plan had been approved before the applicant had brought in their plans, how would the new regulations affect those plans?

Mr. Goff stated that until there is a true redevelopment on that site, there's not much that can happen. Mr. Goff stated there's not a landscape barrier to eat into without affecting both Belt Line Road and Montfort Drive. He stated until there is a major redevelopment of multiple pad sites at that location, there is not much that can be done to change the footprint of those locations individually.

Mayor Pro Tempore Arfsten asked Mr. Goff about the covered patio. Mr. Goff stated that a portion of the outer eating area will be redesigned into a covered patio with glass rollup doors.

Mayor Meier opened the Public Hearing. There were no speakers. Mayor Meier closed the Public Hearing.

Councilmember Walden moved to approve Item #22 as submitted. Mayor Pro Tempore Arfsten seconded the motion. The vote was cast 7-0 in favor of the motion.

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23. Present, Discuss, And Consider Action On An **Ordinance To Reappoint Larry Dwight As Presiding Municipal Judge To The Addison Municipal Court Of Record, And Of Agreement For Service Of The Said Judge.**

Deputy City Manager Cheryl Delaney Presented the item to Council. She stated this item was to reappoint Judge Larry Dwight to two-year term as Municipal Judge.

Mayor Meier thanked Judge Dwight for his service and helping to move Addison forward with technology and streamlining the court process. Mayor Pro Tempore also thanked Judge Dwight for his service.

Councilmember Angell moved to approve item #23 as submitted. Councilmember Wilcox seconded the motion. The vote was cast 7-0 in favor of the motion.

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24. Present And Discuss The **Finance Department Quarterly Financial Report Of The Town For The Quarter Ended September 30, 2016.**

Senior Budget Analyst Paul Debuff presented the item to Council.

Council asked questions regarding the information received.

Council thanked staff for the information.

Council recessed from 9:35 pm to 9:40pm.

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25. Present, Discuss, And Consider Action On An **Ordinance Providing For Increased Prior And Current Service Annuities Under The Act Governing The Texas Municipal Retirement System For Retiree And Beneficiaries Of Deceased Retirees Of The Town Of Addison (COLA).**

Director of Human Resources Passion Hayes presented the item to Council.

Council convened into Executive Session at 9:55 pm.

Council recessed from Executive Session at 10:15 pm.

Mayor Meier moved to ask the Attorney General to provide an opinion and guidance for the permission to share with the public the information the Council just reviewed, which included

specific benefits provided to current Addison retirees. Councilmember Wilcox seconded the motion.

Councilmember Walden asked City Attorney Brenda McDonald her opinion of asking for this guidance from the Attorney General.

City Attorney Brenda McDonald stated that the TMRS Act prohibits the release of any information regarding retirees that would allow individual retirees to be identified. The Attorney General opinion would need be requested even though the exception is a mandatory one.

Councilmember Walden asked the City Attorney if it was in her opinion that the law was clear in this matter.

City Attorney McDonald stated the law is clear. How the law is applied to the individual documents is what the Attorney General will review. Municipalities are required to seek opinions because the Attorney General has declined to make a blanket ruling on the exception.

Councilmember Walden stated out of respect of privacy and the spirit of the letter of the law he would not vote for the motion.

Mayor Meier stated he would revise the motion to include that the names be redacted so that the privacy issue be dealt with that way.

Councilmember Walden asked City Attorney McDonald if redacting the names would be sufficient under the law to provide the privacy to those individuals.

City Attorney McDonald stated that the statute is clear that any disclosure that would allow the public to be able to identify the retiree is what is prohibited. The question for the Attorney General will be with the names redacted, if citizens would be able to identify specific employees.

Deputy Mayor Pro Tempore Hughes stated he would like a clarification. He understood the motion to be to go to the Attorney General for the opinion. Then the Council would have a second decision whether or not to release the information if approved by the Attorney General.

Mayor Meier stated that was a good point. Mayor Meier stated if the Attorney General said to release the information, the Council would have the discretion to then release it. Mayor Meier stated he would

hope that the Council would be transparent with the information. Mayor Meier stated the public employee salary information is public during employment and he felt the benefits given in retirement should also be public.

City Attorney McDonald stated that if the Council is the requestor, the discretion to release goes to Council. However, if a member of the public was the requestor, the decision is solely the Attorney General's.

Mayor Meier stated the advantage of this motion is to allow Council the discretion to release the information if the Attorney General gives permission.

Mayor Meier restated the motion to request the Attorney General opinion for the information reviewed in Executive Session regarding current Addison retirees and their benefits and added the amendment to redact the names to ensure privacy.

Mayor Meier stated in support of the motion he believed the release of the information is consistent with the Council's commitment to transparency. Mayor Meier stated the more informed Council is and the community is the better. Mayor Meier stated the motion is not meant to violate anyone's privacy and he hoped to avoid that with the redaction.

The vote was cast 5-2 in favor of the motion to request an Attorney General opinion. Mayor Meier, Mayor Pro Tempore Arfsten, Deputy Mayor Pro Tempore Hughes, Councilmembers Angell and Wilcox in favor and Councilmembers Duffy and Walden voted against.

Mayor Meier then made a motion to increase the sustainability of the employees' pension fund by declining the ad hoc COLA pay increase for current retirees and instead redirecting the budgeted $55,000 to a one-time payment this year to TMRS and to our employee pension fund to help reduce the current $4.5 million unfunded liability. Councilmember Wilcox seconded the motion.

Mayor Meier stated this was an effort to benefit all retirees both current and future. Mayor Meier stated this action would help decrease the unfunded liability working along with the rate of return for the next year. Mayor Meier stated the amount is not additional money requested, the amount is already budgeted.

Mayor Pro Tempore Arfsten asked how this would help current retirees.

Mayor Meier stated this would help improve the solvency of the pension plan. Mayor Meier stated the hope is to make sure the benefits are there for all retirees in the future.

Councilmember Duffy stated unfunded liability is something in everyday life. Councilmember Duffy stated this unfunded liability will be eliminated over a 25 year period. He stated he felt this issue did not have to be addressed immediately. He stated the motion did not address the item as posted, the COLA, and he could not support it. Councilmember Duffy stated he believed it was not appropriate to redirect the money. He stated the issue was discussed during budget conversations with the amount being set aside for this item, for this purpose. Councilmember Duffy stated he understood that the Mayor voted against the budget due to this item but the majority of the Council voted for the budget including the COLA item. Councilmember Duffy stated the line was included in the budget for a specific purpose not to reduce the unfunded liability.

Deputy Mayor Pro Tempore Hughes asked if Mayor Meier would consider separating the items into two separate motions. Deputy Mayor Pro Tempore Hughes stated he saw one specific conversation on the COLA and another minor conversation on the $55,000.

Mayor Meier stated no. Mayor Meier stated for him it helped to get to the answer of the first one by declining the COLA and not just redirecting the money to something that is beneficial to the employees, that is why he proposed the addition of moving the $55,000 to help reduce the unfunded liability. Mayor Meier stated that to him, the motions are coupled and he wouldn't do one without the other. Mayor Meier stated that just because an item is included in the budget, doesn't mean the Council has to approve it. The item can be further discussed. Mayor Meier stated Council has received much more information since the discussions during the summer. Mayor Meier stated this motion is like other funds, Council is finding cash to put towards unfunded liabilities to cover costs.

Councilmember Wilcox stated that the rate of return from TMRS was only a target and only few believe that TMRS will reach that rate over the long term. Councilmember Wilcox stated that new information received since the summer and new information received in the last few months from TMRS has made him change his mind also.

Mayor Pro Tempore Arfsten asked City Manager Wes Pierson if the

COLA was approved and the unfunded liability went up to $5 million and next year the COLA was approved again, how that would affect the unfunded liability amount.

Mr. Pierson stated the unfunded liability amount will increase with each approval of an Ad Hoc COLA.

Mayor Pro Tempore Arfsten asked if there was a way for the unfunded liability not increase.

Mr. Pierson stated that the way to not increase the unfunded liability is to pre-fund the benefit. Mr. Pierson stated instead of continuing with Ad Hoc COLA increase, the Town would have an annual repeating funding mechanism to pre-fund the COLA.

Council discussed the funding options, recurring increases, budgeting the increases, retiree expectations for COLA increases and possible sunset provisions with legislation and financing the increases in the future.

Mayor Meier restated the motion to increase the sustainability of the employees pension fund by declining the ad hoc COLA pay increase for current retirees and instead redirecting the budgeted $55,000 to a one time payment this year to TMRS and to our employee pension fund to help reduce the current $4.5 million unfunded liability.

The vote was cast 4-3 in favor of the motion. Mayor Meier, Mayor Pro Tempore Arfsten, Deputy Mayor Pro Tempore Hughes, Councilmember Wilcox voted in favor and Councilmembers Angell, Duffy and Walden voted against.

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26. Present, Discuss And Consider Action On A Resolution **Adopting A Revised Housing Policy For The Town of Addison.**

    Due to the late hour, Council moved to table this item to the next meeting on January 10, 2017.

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27. Discussion And Possible Action Regarding The **Role Of The City Council In The Consideration And/Or Approval Of Severance Agreements Between The Town Of Addison And Town Employees.**

    Due to the late hour, Council moved to table this item to the next meeting on January 10, 2017.

Adjourn Meeting

Mayor Meier moved to adjourn the meeting due to the lateness of the hour. Mayor Pro Tempore Arfsten seconded the motion. The vote was cast 4-3 in favor of the motion. Councilmembers Angell, Duffy and Walden voted against.

NOTE: The City Council reserves the right to meet in Executive Session closed to the public at any time in the course of this meeting to discuss matters listed on the agenda, as authorized by the Texas Open Meetings Act, Texas Government Code, Chapter 551, including §551.071 (private consultation with the attorney for the City); §551.072 (purchase, exchange, lease or value of real property); §551.074 (personnel or to hear complaints against personnel); §551.076 (deployment, or specific occasions for implementation of security personnel or devices); and §551.087 (economic development negotiations). Any decision held on such matters will be taken or conducted in Open Session following the conclusion of the Executive Session.

_____
Mayor-Todd Meier

Attest:

_____
City Secretary-Laura Bell

AI-2037 **7.**

Work Session and Regular Meeting

Meeting Date: 01/10/2017

Department: City Manager

AGENDA CAPTION:

Consider **Action On A Resolution Approving An Amended Separation Agreement With The City Manager.**

BACKGROUND:

On October 27, 2015 the City Council appointed Wes Pierson City Manager of the Town of Addison. As is standard for the employment relationship between a City and its City Manager, the City Council approved a separation agreement that outlined the terms of severing the employment relationship with Mr. Pierson with or without cause.

The amendment to the separation agreement provides for two changes:

- It sets the compensation due to the City Manager in the event of involuntary termination at 12 months compensation (compensation= salary (less all normal payroll deductions) + TMRS employer contributions + City's contribution for Employee's health insurance); and
- It provides a requirement that the City Manager give 60 days' notice of a voluntary resignation by the City Manager.

Attached to this memo is a redline copy of the changes in the amended separation agreement.

RECOMMENDATION:

Administration recommends approval.

Attachments

Resolution with Agreement

Redline Agreement

TOWN OF ADDISON, TEXAS

RESOLUTION NO. _____

A RESOLUTION OF THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS APPROVING THE AMENDED SEPARATION AGREEMENT BETWEEN THE TOWN AND WES PIERSON, AUTHORIZING THE MAYOR TO EXECUTE THE AGREEMENT, AND PROVIDING AN EFFECTIVE DATE.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS:

Section 1. The Amended Separation Agreement between the Town of Addison and Wes Pierson, a copy of which is attached to this Resolution as **Exhibit A**, is hereby approved. The Mayor is hereby authorized to execute the agreement;

Section 3. This Resolution shall take effect from and after its date of adoption.

PASSED AND APPROVED by the City Council of the Town of Addison, Texas this the 10th day of January, 2017.

_____
Todd Meier, Mayor

ATTEST:

By: _____
Laura Bell, City Secretary

APPROVED AS TO FORM:

By: _____
Brenda N. McDonald, City Attorney

EXHIBIT A

STATE OF TEXAS §
§ **AMENDED SEPARATION AGREEMENT**
COUNTY OF DALLAS §

THIS Amended Separation Agreement ("Agreement") is made and entered into as of the last date set forth below, by and between the Town of Addison, Texas (the "City") and Wesley S. Pierson ("Pierson" or "Employee").

Recitals:

Whereas, as a part of the one year review of Pierson's employment by the City, the City Council and Pierson desire to amend this Agreement as set forth herein.

Whereas, the terms and considerations set forth in this Agreement are an inducement to the City and Pierson to continue the employment relationship.

NOW, THEREFORE, for and in consideration of the continued employment of Wes Pierson by the Town of Addison, Texas, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged and agreed, the Town of Addison, Texas and Wes Pierson agree as follows:

1. Incorporation of Recitals. The Recitals set forth above are true and correct and incorporated herein for all purposes.

2. Separation.

A. Following the commencement of Pierson's employment, the City may immediately terminate the Employee for any of the following, as determined by the Addison City Council, following written notice to Pierson and an opportunity for a hearing in accordance with Chapter 551 of the Texas Government Code:

> ethics violations as described in the Town of Addison Employee Handbook, Code of Ethics or the ICMA Code of Ethics, integrity compromises, violations of law other than Class C misdemeanors or minor traffic violations, violations of Town of Addison Employee Handbook, gross negligence, insubordination, willful and serious misconduct, or misappropriation of City assets. In the event of such termination, the City shall not pay the Employee any severance pay as described in paragraph 2.B.

B. In the event the Employee is involuntarily terminated by the City for reasons not specified in paragraph 2.A., the City agrees to pay the Employee separation pay in an amount equal to 12 months compensation comprised of salary (less all normal payroll deductions) + TMRS employer contributions + City's contribution for Employee's health insurance. The total payout described above will be considered "separation pay."

C. All other salary pay-out considerations including, but not limited to, unused vacation and compensable holiday time will remain consistent with City policy unless specifically addressed in this Agreement.

3. Resignation. In the event the Employee voluntarily resigns his position with the City, the Employee shall provide 60 days' notice unless the City and Employee agree otherwise.

4. Miscellaneous.

A. Application of Law. Except as herein provided, the laws and constitution of Texas, the City Charter, and applicable rules and regulations and rules of the City, as they now exist or hereafter may be amended, apply to Pierson as they would to other employees of the City.

B. Assignment. Neither party hereto has authority to and shall not assign, transfer, or otherwise convey any interest herein.

C. Rights and Remedies Cumulative; Non-Waiver. The rights and remedies provided by this Agreement are cumulative and the use of any one right or remedy by either party shall not preclude or waive its right to use any or all other remedies. Said rights and remedies are given in addition to any other rights the parties may have by law statute, ordinance, or otherwise. The failure by either party to exercise any right, power, or option given to it by this Agreement, or to insist upon strict compliance with the terms of this Agreement, shall not constitute a waiver of the terms and conditions of this Agreement with respect to any other or subsequent breach thereof, nor a waiver by such party of its rights at any time thereafter to require exact and strict compliance with all the terms hereof. Any rights and remedies either party may have with respect to the other arising out of this Agreement shall survive the cancellation, expiration or termination of this Agreement.

D. Applicable Law; Venue. In the event of any action under this Agreement, venue for all causes of action shall be instituted and maintained in Dallas County, Texas. The parties agree that the laws of the State of Texas shall govern and apply to the interpretation, validity and enforcement of this Contract; and, with respect to any conflict of law provisions, the parties agree that such conflict of law provisions shall not affect the application of the law of Texas (without reference to its conflict of law provisions) to the governing, interpretation, validity and enforcement of this Agreement.

E. No Third-Party Beneficiaries. This Agreement and all of its terms and provisions are solely for the benefit of the parties hereto and not intended to create or grant any rights, contractual or otherwise, to any other person or entity.

F. Severability. If any provision of this Agreement is held to be illegal, invalid or unenforceable, such provision shall be fully severable, and this Agreement shall be construed and enforced as if such illegal, invalid or unenforceable provision had never been a part of this Agreement, and the remaining provisions of this Agreement shall remain in full force and effect and shall not be affected by the illegal, invalid or unenforceable provision or by its severance from this Agreement.

G. Entire Agreement and Modification. This Agreement supersedes all previous Agreements and constitutes the entire understanding of the parties hereto. No changes, amendments or alterations shall be effective unless in writing and signed by both parties.

EXHIBIT A

H. Employee Acknowledgement. Pierson has read the contents of this Agreement and understands its terms and provisions.

EXECUTED in duplicate originals.

TOWN OF ADDISON, TEXAS

_____
Todd Meier, Mayor
Date: _____
Pursuant to Reso._____

WESLEY S. PIERSON, EMPLOYEE

_____
Wesley S. Pierson
Date: _____

STATE OF TEXAS §
§
COUNTY OF DALLAS §

AMENDED SEPARATION AGREEMENT

THIS Amended Separation Agreement ("Agreement") is made and entered into as of the last date set forth below, by and between the Town of Addison, Texas (the "City") and Wesley S. Pierson ("Pierson" or "Employee").

Recitals:

Whereas, as a part of the ~~Town of Addison, Texas has extended an offer~~one year review of Pierson's employment ~~to Pierson to serve as~~by the City ~~Manager for,~~ the City Council and Pierson ~~desires to accept the offer of employment conditioned upon the execution of~~desire to amend this Agreement ~~that establishes the terms of his separation from employment with the City~~as set forth herein.

Whereas, the terms and considerations set forth in this Agreement are an inducement to the City and Pierson~~, and their agreement~~ to continue the ~~offer of~~ employment ~~is conditioned on the terms and considerations contained herein~~relationship.

NOW, THEREFORE, for and in consideration of the continued employment of Wes Pierson by the Town of Addison, Texas, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged and agreed, the Town of Addison, Texas and Wes Pierson agree as follows:

1. Incorporation of Recitals. The Recitals set forth above are true and correct and incorporated herein for all purposes.

2. Separation.

A. Following the commencement of Pierson's employment, the City may immediately terminate the Employee for any of the following, as determined by the Addison City Council, following written notice to Pierson and an opportunity for a hearing in accordance with Chapter 551 of the Texas Government Code:

> ethics violations as described in the Town of Addison Employee Handbook, Code of Ethics or the ICMA Code of Ethics, integrity compromises, violations of law other than Class C misdemeanors or minor traffic violations, violations of Town of Addison Employee Handbook, gross negligence, insubordination, willful and serious misconduct, or misappropriation of City assets. In the event of such termination, the City shall not pay the Employee any severance pay as described in paragraph 2.B.

B. In the event the Employee is involuntarily terminated by the City for reasons not specified in paragraph 2.A., the City agrees to pay the Employee separation pay in an amount equal to ~~that described below:~~

1. 12 months compensation comprised of salary (less all normal payroll deductions) + TMRS employer contributions + City's contribution for Employee's health insurance ~~if Employee is terminated within the first 2 years of employment, or~~

2. ~~6 months compensation comprised of salary (less all normal payroll deductions) + TMRS employer contributions + City's contribution for Employee's health insurance if Employee is terminated after the first 2 years of employment.~~

. The total payout described above will be considered "separation pay."

C. All other salary pay-out considerations including, but not limited to, unused vacation and compensable holiday time will remain consistent with City policy unless specifically addressed in this Agreement.

~~3~~3. Resignation. In the event the Employee voluntarily resigns his position with the City, the Employee shall provide 60 days' notice unless the City and Employee agree otherwise.

4. Miscellaneous.

A. Application of Law. Except as herein provided, the laws and constitution of Texas, the City Charter, and applicable rules and regulations and rules of the City, as they now exist or hereafter may be amended, apply to Pierson as they would to other employees of the City.

B. Assignment. Neither party hereto has authority to and shall not assign, transfer, or otherwise convey any interest herein.

C. Rights and Remedies Cumulative; Non-Waiver. The rights and remedies provided by this Agreement are cumulative and the use of any one right or remedy by either party shall not preclude or waive its right to use any or all other remedies. Said rights and remedies are given in addition to any other rights the parties may have by law statute, ordinance, or otherwise. The failure by either party to exercise any right, power, or option given to it by this Agreement, or to insist upon strict compliance with the terms of this Agreement, shall not constitute a waiver of the terms and conditions of this Agreement with respect to any other or subsequent breach thereof, nor a waiver by such party of its rights at any time thereafter to require exact and strict compliance with all the terms hereof. Any rights and remedies either party may have with respect to the other arising out of this Agreement shall survive the cancellation, expiration or termination of this Agreement.

D. Applicable Law; Venue. In the event of any action under this Agreement, venue for all causes of action shall be instituted and maintained in Dallas County, Texas. The parties agree that the laws of the State of Texas shall govern and apply to the interpretation, validity and enforcement of this Contract; and, with respect to any conflict of law provisions, the parties agree that such conflict of law provisions shall not affect the application of the law of Texas (without reference to its conflict of law provisions) to the governing, interpretation, validity and enforcement of this Agreement.

E. No Third-Party Beneficiaries. This Agreement and all of its terms and provisions are solely for the benefit of the parties hereto and not intended to create or grant any rights, contractual or otherwise, to any other person or entity.

F. Severability. If any provision of this Agreement is held to be illegal, invalid or unenforceable, such provision shall be fully severable, and this Agreement shall be construed and enforced as if such illegal, invalid or unenforceable provision had never been a part of this Agreement, and the remaining provisions of this Agreement shall remain in full force and effect and shall not be affected by the illegal, invalid or unenforceable provision or by its severance from this Agreement.

G. Entire Agreement and Modification. This Agreement supersedes all previous Agreements and constitutes the entire understanding of the parties hereto. No changes, amendments or alterations shall be effective unless in writing and signed by both parties.

H. Employee Acknowledgement. Pierson has read the contents of this Agreement and understands its terms and provisions.

EXECUTED in duplicate originals.

TOWN OF ADDISON, TEXAS	**WESLEY S. PIERSON, EMPLOYEE**
_____	_____
Todd Meier, Mayor	Wesley S. Pierson
Date: _____	Date: _____
Pursuant to Reso._____	

AI-2010 **8.**

Work Session and Regular Meeting

Meeting Date: 01/10/2017

Department: Infrastructure- Development Services

AGENDA CAPTION:

Consider Action On A **Resolution Approving An Interlocal Mutual Aid Agreement Between And Among The North Central Texas Participating Local Governments In The Public Works Emergency Response Team.**

BACKGROUND:

When a natural disaster strikes a community, it can quickly overwhelm the ability of that community to adequately respond to the emergency. A recent example of this was the December 26, 2015, tornado that tore through Rowlett located in North Texas. In response to emergencies such as this, the Public Works Emergency Response Team (PWERT) was created to provide public works assistance at no cost to participating cities when an emergency or disaster such as this overwhelms local resources.

Currently, there are 46 cities throughout the Dallas Fort Worth area who are members of PWERT, including Addison's three border cities (Dallas, Farmers Branch, and Carrollton). Member cities of PWERT may request aid and assistance in the form of personnel, equipment, materials, and/or other associated services from other members' public works agencies through PWERT. Recognizing that a disaster may strike multiple communities who are members of PWERT at the same time, the Agreement does not obligate the Town, or any party, to provide aid or assistance to another requesting municipality if in their opinion those resources cannot be offered at that time.

The Mutual Aid Agreement (MAA) requires approval by Council prior to membership in the program. This agreement does not interfere with or take the place of any other mutual aid agreements that the Town may have and it does not alter the consolidated dispatch service.

Staff recommends that the MAA be approved and the Town become a member of PWERT because it will allow for a streamlined and effective process to gather personnel, equipment, and materials during an emergency when resources and personnel are strained and focused on the immediate situation. Membership will also eliminates the need to coordinate with each individual city for assistance since PWERT serves as the liaison between the requesting and responding city in providing resources.

This Agreement becomes effective on the date of adoption and continues in force for one year from that date. At that time, the Agreement automatically renews each year unless the Town terminates its participation by giving notice to the other parties and a resolution is passed by Council. The termination becomes final 30 days after the date of the notification to the other parties of its intent to terminate.

Since its creation in 2012, PWERT has gained a great deal of knowledge in the provision of emergency resource coordination. That knowledge will be an invaluable tool for the Town of Addison. Addison has been fortunate not to have experienced a disaster of a devastating magnitude as some of the surrounding cities have, but it is prudent that we be prepared for that possibility.

RECOMMENDATION:

Administration recommends approval.

Attachments

Resolution with Agreement

RESOLUTION NO._____

A RESOLUTION AUTHORIZING THE MAYOR TO EXECUTE AN AGREEMENT FOR PUBLIC WORKS MUTUAL AID BY AND BETWEEN PARTICIPATING LOCAL GOVERNMENTS AND SPECIAL DISTRICT PARTIES IN THE NORTH CENTRAL TEXAS REGIONAL AREA OF THE STATE OF TEXAS FOR THE PURPOSE OF PROVIDING PUBLIC SERVICES IN THE EVENT OF AN EMERGENCY, DISASTER, AND/OR CIVIL DISASTER; EACH PARTY MAY TERMINATE THE AGREEMENT UPON THIRTY (30) DAYS WRITTEN NOTICE TO THE OTHER PARTICIPATING PARTIES, AND PROVIDING AN EFFECTIVE DATE.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS:

Section 1. That the Mayor is hereby authorized to enter into an interlocal agreement with the participating Local Governments and Special District Parties for Mutual Aid in the protection of life and property from emergencies, disasters, and/or civil disasters, a copy of which is attached to this Resolution as **Exhibit A,** is hereby approved.

Section 2. That the Mayor is authorized to take those steps reasonable and necessary to comply with the intent of this resolution.

Section 3. That this resolution shall take effect on the date of adoption as indicated on the signature page for each party.

DULY PASSED AND APPROVED by the City Council of the Town of Addison, Texas this 10th day of January, 2016.

_____
Todd Meier, Mayor

ATTEST:

By:
Laura Bell, City Secretary

APPROVED AS TO FORM:

_____
Brenda McDonald, City Attorney

APPROVED AS TO CONTENT:

_____
Lisa Pyles, Director of Infrastructure and Development Services

EXHIBIT A

NORTH CENTRAL TEXAS PUBLIC WORKS
MUTUAL AID AGREEMENT

This mutual aid agreement ("Agreement") is entered into by, between, and among the North Central Texas Participating Local Governments and/or Public/Political Sub-Divisions located wholly or partially within the State of Texas acting by and through their duly authorized officials. The undersigned Participating Local Governments and any and/or Public/Political Sub-Divisions of the State of Texas adopting this agreement upon a formal order of their respective governing bodies as provided therein may be referred to in this Agreement individually as "Party" and collectively as "Parties." By signing this document, and sending it to the Public Works Emergency Response Team, at an address maintained by the NCTCOG, the agency has indicated that it consents to be a party to this emergency mutual aid agreement, and acknowledges that it is not necessary to receive copies of the agreement from other agencies that are party to such agreement.

RECITALS

WHEREAS, the Parties recognize the vulnerability of the people and communities located within local governments and public subdivisions to damage, injury, and loss of life and property resulting in emergencies, disasters or civil emergencies and recognize that such incidents may present equipment and personnel requirements beyond the capacity of each individual (governmental entity) (Party); and

WHEREAS, the governing officials of the Parties desire to secure for each Party the benefits of Mutual Aid for the protection of life and property in the event of an emergency, disaster or civil emergency or public works emergency; and

WHEREAS, the Parties *that* wish to make suitable arrangements to provide Mutual Aid are so authorized, and make this Agreement pursuant to *all governmental power inherent in home rule and other municipalities and all statutory authority, including, but not limited to, the Interlocal Cooperation Act Chapter* 791 of the Texas Government Code); *the Texas Disaster Act of 1975 as amended Chapter 418 of the Texas Government Code including the* Texas Statewide Mutual Aid System of the Emergency Management Chapter, set out in Subchapter E-1 of Texas Government Code, Section 418.111 et seq, *and any amendments to that authority or other authority that may be set out in the constitution or laws of the State of Texas*; and

WHEREAS, it is understood that the creation of this Agreement and the Texas Statewide Mutual Aid System (SB11) under Chapter 418 E-1 does not replace or supersede existing mutual aid agreements or interfere with the ability of municipalities to enter into written mutual aid agreements in the future. It is understood that if a written agreement is entered into by governmental entities or municipalities requesting resources, then the terms of that agreement control the rights and responsibilities of the participating parties to the extent the agreement provides terms that differ from the Texas Statewide Mutual Aid System; and

WHEREAS, it is expressly understood that any mutual aid extended under this Agreement and the operational plan adopted pursuant thereto, is furnished in accordance with the "Texas Disaster Act" and other applicable provision of law and except as otherwise provided by law, that the responsible local official in whose jurisdiction an incident requiring Mutual Aid has occurred shall remain in charge at such incident including the direction of such personnel and equipment provided him/her through the operation of such Mutual Aid Plans.

NOW, THEREFORE, the Parties agree as follows:

Section 1: Incorporation: The above whereas provisions and statements are incorporated as if written word for word below.

Section 2: Purpose: This Agreement is hereby established to provide planning and operating procedures whereby public works related Agencies may request aid and assistance in the form of personnel, equipment, materials and/or other associated services from other public works related agencies. This agreement allows for better coordination of efforts, identifies available resources and helps ensure that timely aid can be provided.

Section 3: Definitions

A. "Agency" means any municipal public works agency, township road district, county highway departments, or any Public/Political sub-division that performs a public works function that abides by the provisions as found in this Agreement.
B. "Administrative Agency" means the entity designated by the Parties to be responsible for maintaining the documents associated with this Agreement including distributing Point of Contact and Resource Inventory information.
C. "Assisting Party" or "Responding Party" means the agency or organization which has received a request to furnish aid and assistance from another Party and has agreed to provide the same.
D. "Civil Emergency" means an unforeseen combination of circumstances or the resulting consequences thereof within the geographic limits of a given jurisdiction that calls for immediate action or for which there is an urgent need for assistance or relief to protect the general citizenry.
E. "Disaster" means the occurrence or imminent threat of widespread or severe damage, injury, or loss of life or property resulting from any natural or manmade cause, including but not limited to fire, flood, earthquake, wind, storm, wave action, winter storm, biological or health hazards, dam or levee break, drought, explosion, riot, acts of terrorism and other public calamity requiring emergency action or requiring homeland security activity (as that term is defined in Chapter 421 of the Texas Government Code entitled Homeland Security) that is or likely to be, beyond the control of the services, personnel, equipment and facilities of a Party that requires assistance under this Agreement, but must be coordinated through the appropriate local accredited/certified Emergency Management Agency coordinator.
F. "Emergency" means any occurrence or threat thereof, whether natural or caused by man, in war or in peace, which results in substantial injury or harm to the population, or substantial damage to or loss of property.
G. "Homeland Security Activity" means any activity related to the prevention or discovery of, response to, or recovery from a terrorist attack, natural or man-made disaster, hostile military or paramilitary action, or extraordinary law enforcement emergency.
H. "Mutual Aid" means providing resources such as personnel, equipment, services and supplies. These resources support typical public works missions or tasks such as: removal of debris, restoration of water/wastewater operations, flood control, infrastructure system repairs, standby power, and damage assessment.
I. "National Incident Management System (NIMS)" means a Presidential directive that provides a consistent nationwide approach that allows federal, state, local and tribal governments as well as private sector and nongovernmental organizations to work together to manage incidents and disasters of all kinds.

J. "Operational Period" shall mean a period of time beginning at the time of the request for Mutual Aid and lasting no longer than thirty six (36) hours. Typically assistance would be given in Twelve (12) hour shifts for operational efficiencies. It is the intention of this mutual aid to be for assistance in the initial response to the emergency and not part of the long term recovery. If assistance is requested beyond the initial 36 hours, then the requesting agency must work with the responding agency directly and put in place a mutual agreeable contract and payment for services rendered. It is also understood that any agency responding under this mutual aid agreement will not receive any reimbursement for their mutual aid assistance up to the first 36 hours, even if the event becomes a declared emergency by the President. After the first 36 hours repayment shall be provided. It is also understood that any agency for any reason may decline to assist or recall their mutual aid at any time.

K. "Point of Contact" means a person and/or an agency's department/office serving as the coordinator or focal point of information dealing with public works emergency response activities.

L. "Public Works Emergency Response Team" (PWERT) means a working group of Public Works Officials representing their agencies; whose mission is to develop and maintain a region wide network of public works' related agencies. This teams' principal purpose is to provide mutual aid response and recovery assistance, to each other, when confronted with natural or man-made emergencies or disasters. This Group is designated as the Administrative Agency to manage this Agreement.

M. "Requesting Party" means the agency or organization receiving aid and assistance from a Assisting Party.

N. "Public/Political Sub-Division" means a basic level of independent local government or quasi-government authorized by Section 52 of the Texas Constitution that typically have a specific or limited purpose including Dallas Fort Worth International Airport, Toll Authorities, independent school districts, water or wastewater districts and improvement and economic development districts and exist separately from general purpose local governments such as county, city or townships.

Section 4: Term

This Agreement shall become effective as to each Party on date of adoption as indicated on the signature page for each Party and shall continue in force and remaining binding on each and every Party for twelve (12) months from the effective date. This Agreement shall renew automatically for a period of one year upon the completion of the initial term and each subsequent term unless such time as the governing body of a Party terminates its participation in this Agreement pursuant to Section 4 of this Agreement. Termination of participation in this Agreement by a Party or Parties shall not affect the continued operation of this Agreement between and among the remaining Parties.

Section 5: Termination

Any Party may at any time by resolution or notice given to all the other Parties decline to participate in the provision of Public Works Mutual Aid. The Governing Body of a Party shall, by Resolution, give notice of termination of participation in this Agreement and submit a copy of such resolution to the Administrative Agency and all other Parties. Such termination shall become effective thirty (30) days after filing of such notice. The termination by one or more of the Parties of its participation in this Agreement shall not affect the operation of this Agreement as between the other Parties hereto.

Section 6: Responsibility of Parties

Provision of Aid: Each Party recognizes that it may be requested to provide aid and assistance at a time when it is necessary to provide similar aid and assistance to the Party's own constituents. This Agreement shall not be construed to impose any unconditional obligation on any Party to provide aid and assistance. A Party may choose not to render aid and assistance at any time for any reason, or to recall aid that has been deployed at anytime.

Section 7: Request for Assistance: The request for assistance will:

A. Be made only with a Declaration of a state of Local Civil Emergency or Declaration of Disaster by a Requesting Party pursuant to Section 418.108, Texas Government Code or after a proclamation of a State of Emergency under Section 433.001, Texas Government Code,
B. Be made only without a Declaration of a state of Local Civil Emergency or Declaration of Disaster if the requesting agency expects to use the resource(s) for less than one operational period or if the declaration of emergency is expected to be issued during the first operational period.
C. Be made by the highest ranking authority of Requesting Party available at the time of need,
D. Be made to the highest ranking authority of the Responding Party available at the time of need, and
E. Specify to the greatest extent possible the nature of the problem requiring assistance and the resources requested.

Section 8: Procedures for Requests and Provision of Mutual Aid: See Attachment 1

Section 9: Cost Limitation

A Requesting Party shall not be required to reimburse a Responding Party for costs incurred during the first Operational Period as defined in Section 2 of this Agreement. A Requesting Party shall be required to reimburse a Responding Party for costs incurred after the first Operational Period.

Section 10: Expending Funds:

A Responding Party that performs services or furnishes aid pursuant to this Agreement shall do so with their own current funds. No Party shall have any liability for the failure to expend funds to provide aid hereunder.

Section 11: Insurance

A. Worker's Compensation Coverage: Each Party shall be responsible for its own actions and those of its employees and is responsible for complying with the Texas Workers' Compensation Act.
B. Automobile Liability Coverage: Each Party shall be responsible for its own actions and is responsible for complying with the Texas motor vehicle financial responsibility laws.
C. To the extent permitted by law and without waiving sovereign immunity, each Party shall be responsible for any and all claims, demands, suits, actions, damages, and causes of action

related to or arising out of or in any way connected with its own actions and the actions of its personnel in providing Mutual Aid assistance rendered or performed pursuant to the terms and conditions of this Agreement. Each party agrees to obtain general liability and public official's liability insurance, if applicable, or maintain a comparable self-insurance program.

Section 12: Miscellaneous

A. Entirety: This Agreement contains all commitments and agreements of the Parties with respect to the Mutual Aid to be rendered hereunder during or in connection with an Emergency, Disaster and/or Civil Emergency. No other oral or written commitments of the Parties with respect to mutual aid under this Agreement shall have any force or effect if not contained herein, except as provided in Section 12E below.
B. Other Mutual Aid Agreements: This Agreement is not intended to replace or conflict with - local mutual aid agreements for other emergency response needs such as fire and police or for other purposes.
C. Severability: If a provision contained in this Agreement is held invalid for any reason, the invalidity does not affect other provision of the Agreement that can be given effect without the invalid provision, and to this end the provisions of the Agreement are severable.
D. Validity and Enforceability: If any current or future legal limitations affect the validity or enforceability of a provision of this Agreement, then the legal limitations are made as part of the Agreement and shall operate to amend this Agreement to the minimum extent necessary to bring this Agreement into conformity with the requirement of the limitations, and so modified, this Agreement shall continue in full force and effect.
E. Amendment: This Agreement may be amended only by the mutual written consent of the Parties.
F. Governing Law and Venue: The Laws of the State of Texas shall govern this Agreement. In the event of an Emergency or Disaster physically occurring with the geographical limits of only one county that is a Party hereto, venue shall lie in the county in which the Emergency or Disaster occurred. In the event an Emergency or Disaster physically occurring in more than one county that is a Party thereto, venue shall be determined in accordance with the Texas Rules of Civil Procedure.
G. Signatories: The PWERT shall be the official repository of original pages of the Parties to this Agreement and will maintain an up-to-date list of those Parties. Each Party will retain a copy of their own originally signed document with an additional individual signature page from their Agency to be filed with the PWERT under this Agreement. *PWERT will maintain contact information from all of the parties and provide for a means of communication whenever there is a need to call for mutual aid. This agreement may be signed in multiple copies, and it is only necessary for the agencies to notify the PWERT and keep them informed of the contact information.*
H. PWERT – the Administrative Agency, managing this agreement, provides for one membership seat for each participating agency and one alternate seat. The primary seat should be held by a Public Works Official or designee. The alternate seat should held by a member of the jurisdiction of the Emergency Management Division or designee. The jurisdiction is not required to fill the seats, but, it is strongly recommended in order to receive information and training for emergency response.

EXECUTED this_____day of_____, 2016

Local Government, Texas

By: _____
Printed Name: _____
Title: _____

Attachment 1

PROCEDURES TO USE FOR THE NORTH CENTRAL TEXAS PUBLIC WORKS MUTUAL AID AGREEMENT

Here are the suggested steps for your agency to follow when using the Agreement. Generally if the Emergency Operations Center for your city is activated follow the incident command system and associated communications operations plan to request resources.

1. Requesting Party Steps to Follow:

A. Assess the situation and determine the resources needed.
B. Fill out the REQUESTING PARTY Checklist (Form 1).
C. Locate agencies included in the agreement **OR** Contact the Public Works Emergency Response Team (PWERT) standby point of contact for assistance to complete the remaining steps.
D. Call one or more agencies that may have the resources you need.
E. Fill out a REQUESTING PARTY MUTUAL AID INFORMATION Form (Form 2).
F. Send copy of the form to the RESPONDING PARTY as soon as possible.

2. Responding Party Steps to Follow:

A. Make sure you can fulfill the request before providing an answer. Notes: 1) obtain required local authority to deploy the resources 2) providing assistance is voluntary and an agency is not required to fulfill the request if you determine the resources are critical to your operational needs.
B. Analyze the risk level of the request.
C. Complete the RESPONDING PARTY Checklist (Form 3) with the information given by the REQUESTING PARTY.
D. Brief your employees and prepare the equipment.
E. Complete the Employee & Equipment Information Form (Form 4). Provide copies to your responding staff and to the REQUESTING PARTY.
F. Dispatch staff to the REQUESTING PARTY for assistance.

3. Supervision and Control: The responding personnel, equipment and other resources will be under the operational control of the Requesting Party. These response operations shall be NIMS compliant as well as organized and functioning within an Incident Command System (ICS), Unified Control System (UCS). Direct supervision and control of responding party's resources shall remain with their designated supervisor(s). The designated supervisor(s) shall: maintain personnel time records, material records and a log of equipment hours and report work progress to the Requesting Party. The Responding Party's personnel and other resources remain subject to recall by the Responding Party's authority at any time, subject to reasonable notice to the Requesting Party.

4. Food, Housing and Self Sufficiency: Unless specifically instructed otherwise, the Responding Party will have the ability to be self-sufficient as practicable from the time of arrival to their designated staging area location to the time of their arrival back at the Responding Party's home department. However, the requesting agency may need to provide resources for tasks extending normal supplies. For example, if the required tasks require significant mobile activities and fuel, the Requesting Party should be prepared to augment their gas/diesel supplies.

5. Communications: Unless specifically instructed otherwise, the Requesting Party shall have the responsibility for coordinating communications between the personnel of the Responding Party and the Requesting Party. Responding Party should be prepared to furnish their own internal communications equipment sufficient to only maintain communications among their respective operating units.

AI-2023 **9.**
Work Session and Regular Meeting
Meeting Date: 01/10/2017
Department: City Manager

AGENDA CAPTION:
Present, Discuss And Consider Action On A **Resolution Adopting A Revised Housing Policy For The Town of Addison.**

BACKGROUND:
The City Council has held a series of discussions regarding the Town's current housing policy. At the September 29, 2016, city Council Meeting, staff was instructed to prepare a Resolution that revised the policy in two ways:

First, Council requested that "Where feasible and appropriate: be added to the first section of the policy, so that it would read:

> Where feasible and appropriate, new housing should increase the proportion of fee-simple ownership in Addison's housing mix. Apartment-only rezoning is unlikely to be approved, as currently the ratio of rental to ownership properties is higher than desired.

Second, Council requested that a fifth section be added that would allow for exceptions to the policy. This new section would read as follows:

> The City Council acknowledges that there may exceptional projects that do not comply with elements of this policy. The Council encourages developers and staff to pursue projects that represent the highest and best use of each property and that advance portions of this policy or other Town goals.

This language recognizes that there may be projects that warrant special consideration, defines staff's role in bringing such projects forward and broadly states the criteria for considering exceptions to the policy.

The other components of the policy were left unchanged.

The full policy can be found in the attached resolution.

RECOMMENDATION:
Administration recommends approval.

Attachments

Housing Resolution

Housing Policy - Red Line Version

TOWN OF ADDISON, TEXAS

RESOLUTION NO. _____

A RESOLUTION OF THE CITY COUNCIL OF THE TOWN OF ADDISON, TX APPROVING AND SUPPORTING A HOUSING POLICY WITHIN THE TOWN OF ADDISON PURSUANT TO THE LAWS OF THE STATE OF TEXAS AND THE ADDISON CODE OF ORDINANCES; PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City Council has researched the current housing stock and discussed and deliberated a wide range of housing alternatives for the Town of Addison, Texas; and

WHEREAS, the City Council desires to make a policy statement to guide City Staff and potential developers as new housing developments are proposed and brought forward for City Council consideration.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS:

Section 1. Addison Housing Policy. When new housing is proposed in Addison, the Addison City Council encourages it to be developed according to the following principles:

1. Where feasible and appropriate, new housing should increase the proportion of fee- simple ownership in Addison's housing mix. Apartment-only rezoning is unlikely to be approved, as currently the ratio of rental to ownership properties is higher than desired.

2. A proposal should offer a 'best fit' mix of uses and housing choices within the context of the surrounding Addison community. The Town may use a study area committee (with staff, elected, and appointed members such as area residents and business representatives) to evaluate a proposal's fit in Addison.

3. New housing should create or enhance neighborhoods of urban character rather than locate on a stand-alone, nonintegrated property and should continue the high quality design and walkability that make Addison's existing neighborhoods distinctive,

4. Proposals for independent and/or assisted living may be considered by the Town of Addison. Since there are no assisted living housing units in Addison today, the Town will conduct research to understand how this housing could or should be included in Addison's future.

5. The City Council acknowledges that there may be exceptional projects that do not comply with elements of this policy. The Council encourages developers and staff to pursue projects that represent the highest and best use of each property and that advance portions of this policy or other Town goals.

Section 2. Recitals. The above and forgoing recitals are true and correct and are incorporate herein and made part hereof for all purposes.

Section 3. Effective Date. This Resolution shall take effect upon its passage and approval.

PASSED AND APPROVED by the City Council of the Town of Addison, Texas this the 10th day of January, 2017.

Todd Meier, Mayor

ATTEST:

By: _____
Laura Bell, City Secretary

APPROVED AS TO FORM:

By: _____
Brenda N. McDonald, City Attorney

TOWN OF ADDISON, TEXAS

RESOLUTION NO. R016-___

A RESOLUTION OF THE CITY COUNCIL OF THE TOWN OF ADDISON, TX APPROVING AND SUPPORTING A HOUSING POLICY WITHIN THE TOWN OF ADDISON PURSUANT TO THE LAWS OF THE STATE OF TEXAS AND THE ADDISON CODE OF ORDINANCES; PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City Council has researched the current housing stock and discussed and deliberated a wide range of housing alternatives for the Town of Addison, Texas; and

WHEREAS, the City Council desires to make a policy statement to guide City Staff and potential developers as new housing developments are proposed and brought forward for City Council consideration.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS:

Section 1. Addison Housing Policy. When new housing is proposed in Addison, the Addison City Council encourages it to be developed according to the following principles:

1. Where feasible and appropriate, n~~N~~ew housing should increase the proportion of fee-simple ownership in Addison's housing mix. Apartment-only rezoning is unlikely to be approved, as currently the ratio of rental to ownership properties is higher than desired.

2. A proposal should offer a 'best fit' mix of uses and housing choices within the context of the surrounding Addison community. The Town may use a study area committee (with staff, elected, and appointed members such as area residents and business representatives) to evaluate a proposal's fit in Addison.

3. New housing should create or enhance neighborhoods of urban character rather than locate on a stand-alone, nonintegrated property and should continue the high quality design and walkability that make Addison's existing neighborhoods distinctive,

4. Proposals for independent and/or assisted living may be considered by the Town of Addison. Since there are no assisted living housing units in Addison today, the Town will conduct research to understand how this housing could or should be included in Addison's future.

5. The City Council acknowledges that there may be exceptional projects that do not comply with elements of this policy. The Council encourages developers and staff to pursue projects that represent the highest and best use of each property and that advance portions of this policy or other Town goals.

Section 2. Recitals. The above and forgoing recitals are true and correct and are incorporate herein and made part hereof for all purposes.

Section 3. Effective Date. This Resolution shall take effect upon its passage and approval.

PASSED AND APPROVED by the City Council of the Town of Addison, Texas this the 11th day of October, 2016.

_____
Todd Meier, Mayor

ATTEST:

By: _____
Laura Bell, City Secretary

APPROVED AS TO FORM:

By: _____
Brenda N. McDonald, City Attorney

AI-2033 **10.**

Work Session and Regular Meeting

Meeting Date: 01/10/2017

Department: City Manager

AGENDA CAPTION:

Present, Discuss, And Consider Action On A **Resolution Approving A Contract With Flowline Construction, Inc., For The Construction of The Vitruvian Phase 5 Public Infrastructure** In The Amount Of $3,823,868.

BACKGROUND:

Vitruvian Park, located at the corner of Marsh Lane and Vitruvian Way is a development that is funded by both private and public investment. The Master Facilities Agreement between the Town and UDR that was entered into on June 26, 2013, provides for, among other things, the allocation and expenditure of the authorized funds that are or may be available to design and construct the public infrastructure improvements necessary to support the development. In that agreement, the Town agreed to pay for the public infrastructure improvements in the development from proceeds from bond programs.

The scope of work for the construction of the public infrastructure improvements includes, a new public roadway and associated streetscape and utility improvements along the east right-of-way line of Marsh Lane and the north right-of-way line of Vitruvian Way. Construction services specifically for the new public roadway will include water, wastewater, storm drainage, paving, electric duct bank, telecommunications duct bank, miscellaneous conduits, landscaping, irrigation, and streetscape improvements. Improvements along Marsh Lane will include the extension of water, wastewater, storm drainage, and gas main improvements along with streetscape, landscaping and irrigation modifications. Improvements along Vitruvian Way will include the addition of parallel parking spaces to the existing street section along with streetscape, landscape, irrigation and miscellaneous utility improvements from the Marsh Lane intersection to the existing Ponte Avenue intersection. In order to prevent damage to the newly established streetscape, it will be installed in phases as the buildings are constructed.

The Town engaged Icon Consulting Engineers, Inc., in early January 2016 to prepare plans and specifications for the project. Their design contract was awarded on February 9, 2016.

Icon Consulting Engineers, Inc., completed the design in September 2016 and the project was posted to BidSync on September 29, 2016. The plan development incorporated a base bid which included the majority of the public infrastructure improvements and an additive alternate which included the streetscape elements. Plans and specifications for the project can be found on the Town of Addison website under the Finance Department tab. The bids closed on October 25, 2016 and the Town

received two bids. The bid comparison can be found in the attached bid tabulation document.

Description	Flow-Line Construction, Inc.	John Burns Construction Co.
Bid	$3,197,299	$3,657,448
Add Alt 1	$626,569	$942,417
Total	$3,823,868	$4,599,865

Flowline Construction, Inc., has been determined to be the lowest responsible bidder. Staff has reviewed their references and found them to be capable of performing this work. We are recommending award of the base bid along with the additive alternate. The contract value for this project is $3,823,868 and is budgeted in the Vitruvian Bond Funds. The budget for Vitruvian Phase 5 based on the Master Facilities Agreement is $4,780,852. The project is expected to take approximately 12 months to complete, weather permitting.

RECOMMENDATION:

Administration recommends approval.

Attachments

Resolution with Contract
Site Plan Exhibit
Project Specifications
Funding Disbursement
Form 1295

TOWN OF ADDISON, TEXAS

RESOLUTION NO. _____

A RESOLUTION OF THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS APPROVING A CONSTRUCTION CONTRACT BETWEEN THE TOWN OF ADDISON AND FLOW-LINE CONSTRUCTION, INC., FOR SERVICES RELATED TO THE VITRUVIAN PHASE V PUBLIC INFRASTRUCTURE IN AN AMOUNT NOT TO EXCEED $3,823,868 AUTHORIZING THE CITY MANAGER TO EXECUTE THE AGREEMENT, AND PROVIDING AN EFFECTIVE DATE.

BE IT RESOLVED BY THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS:

Section 1. The Contract Agreement between the Town of Addison and Flow-Line Construction, Inc., for services related to the Vitruvian Phase V Public Infrastructure in an amount not to exceed $3,823,868, a copy of which is attached to this Resolution as **Exhibit A** and which incorporates the Town of Addison's General and Specific Conditions for construction contracts, and the Advertisement for Bids, Instruction to Bidders, General Provisions, Special Provisions, Plans and other bid documents**,** is hereby approved. The City Manager is hereby authorized to execute the agreement.

Section 2. This Resolution shall take effect from and after its date of adoption.

PASSED AND APPROVED by the City Council of the Town of Addison, Texas this the 10th day of January, 2017.

_____
Todd Meier, Mayor

ATTEST:

By: _____
Laura Bell, City Secretary

APPROVED AS TO FORM:

By: _____
Brenda N. McDonald, City Attorney

EXHIBIT A

CONTRACT AGREEMENT

STATE OF TEXAS

COUNTY OF DALLAS

THIS AGREEMENT is made and entered into this _____ day of _____, **2016**, by and between the Town of Addison, of the County of Dallas and State of Texas, acting through its City Manager, thereunto duly authorized so to do, Party of the First Part, hereinafter termed the OWNER, and **Flow-Line Construction, Inc.** of the City of **Dallas**, County of **Dallas**, State of Texas, Party of the Second Part, hereinafter termed CONTRACTOR.

WITNESSETH: That for and in consideration of the payment and agreement hereinafter mentioned, to be made and performed by the OWNER, the said CONTRACTOR hereby agrees with the said OWNER to commence and complete construction of certain improvements as follows:

Town of Addison Public Improvements
to be known as

VITRUVIAN PARK
PUBLIC INFRASTRUCTURE – BLOCK 200

and all extra work in connection therewith, under the terms as stated in the General and Specific Conditions of the AGREEMENT; and at his own proper cost and expense to furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance and other accessories and services necessary to complete the said construction, in accordance with the conditions and prices stated in the Proposal attached hereto and in accordance with the Advertisement for Bids, Instructions to Bidders, General Provisions, Special Provisions, Plans, and other drawings and printed or written explanatory matter thereof, and the Technical Specifications and Addenda thereto, as prepared by the OWNER, each of which has been identified by the endorsement of the CONTRACTOR and the OWNER thereon, together with the CONTRACTOR's written Proposal and the General Provisions, all of which are made a part hereof and collectively evidence and constitute the entire AGREEMENT.

The CONTRACTOR hereby agrees to commence work within ten (10) calendar days after the date of written notice to do so shall have been given to him, to complete the work within One Hundred Eighty Days **(180)** calendar days, after he commences work, subject to such extensions of time as are provided by the General Provisions.

The OWNER agrees to pay the CONTRACTOR $3,823,868.00 in current funds for the performance of the Contract in accordance with the Proposal submitted thereof, subject to additions and deductions, as provided in the General Provisions, and to make payments of account thereof as provided therein.

IN WITNESS WHEREOF, the parties of these presents have executed this AGREEMENT in the year and day first above written.

TOWN OF ADDISON, TEXAS (OWNER)

By: _____
Wes Pierson, City Manager

ATTEST:

By: _____
Laura Bell, City Secretary

(CONTRACTOR)

By: _____

ATTEST:

By: _____

The following to be executed if the CONTRACTOR is a corporation:

I, **Eduardo M. Hernandez** certify that I am the secretary of the corporation named as CONTRACTOR herein; that **Eduardo M. Hernandez**, who signed this Contract on behalf of the CONTRACTOR is the **President** (official title) of said corporation; that said Contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

Signed: _____

Corporate Seal

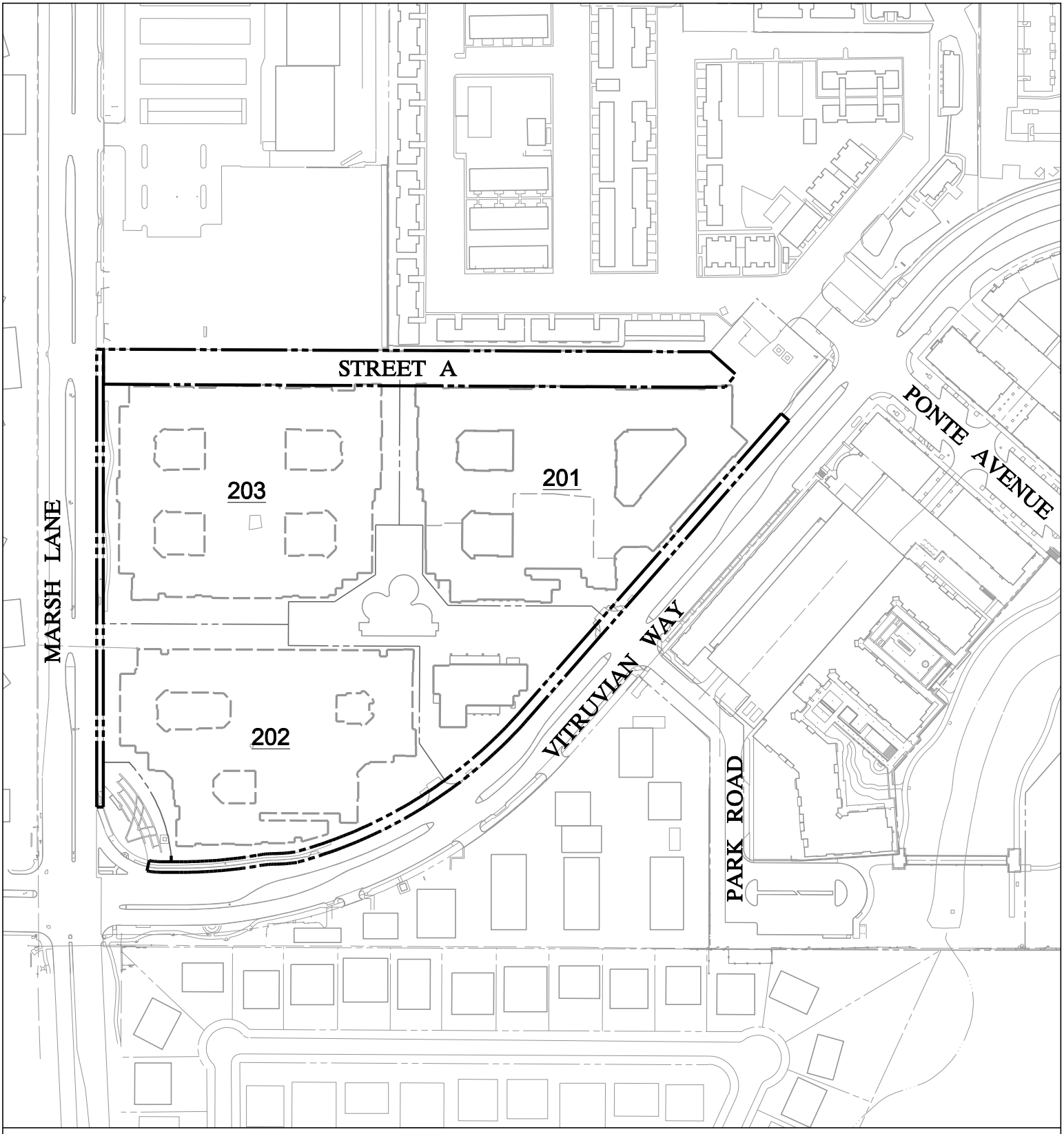


EXHIBIT A
Vitruvian Park - BLOCK 2
INFRASTRUCTURE

01/18/16

icon Consulting Engineers, Inc.
Civil Engineers - Designers - Planners
Vermilion Office Park
2840 W. Southlake Blvd., Suite 110
Southlake, Tx 76092
Phone: (817) 552-6210
Fax: (817) 778-4845

N

SCALE: 1"=200'

SPECIFICATIONS AND CONTRACT DOCUMENTS

FOR THE CONSTRUCTION OF

VITRUVIAN PARK

PUBLIC INFRASTRUCTURE – BLOCK 200

TOWN OF ADDISON, TEXAS

Infrastructure & Development Services # 2016-09
Bid Number 16-184

August, 2016

PREPARED BY:

icon Consulting Engineers, Inc.
Civil Engineers - Designers - Planners
Engineering Firm Registration Number F-9007

2840 W. Southlake Blvd., Suite 110
Southlake, Texas 76092
(817) 552-6210



TOWN OF ADDISON, TEXAS

MAYOR

Todd Meier

COUNCIL MEMBERS

Bruce Arfsten

Ivan Hughes

Al Angell

Jim Duffy

Paul Walden

Dale Wilcox

CITY MANAGER

Wes Pierson

DIRECTOR OF INFRASTRUCTURE & DEVELOPMENT SERVICES

Lisa Pyles

ASSISTANT DIRECTOR OF INFRASTRUCTURE & DEVELOPMENT SERVICES

Jason Shroyer, P.E.

CITY SECRETARY

Laura Bell

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SECTION AB

ADVERTISEMENT FOR BIDS

ADVERTISEMENT FOR BIDS

1. Sealed bids addressed to the Town of Addison, Texas, for **Paving, Drainage and Utility Improvements for Vitruvian Park Public Infrastructure – Block 200** in the Town of Addison, Texas, hereinafter called "City" or "Owner" in accordance with specifications and contract documents prepared by **Icon Consulting Engineers, Inc.** will be received at the office of the Purchasing Department, 5350 Belt Line Road, Addison, Texas until **2:00 p.m. on Thursday, October 20, 2016**. Bids received by the appointed time will be opened and read aloud. Any bids received after closing time will be returned unopened.

2. The Contractor shall identify his bid on the outside of the envelope by writing the words **INFRASTRUCTURE & DEVELOPMENT SERVICES #2016-09, VITRUVIAN PARK PUBLIC INFRASTRUCTURE – BLOCK 200.**

3. Paper bids shall be required and accompanied by a cashier's check or certified check upon a national or state bank in an amount not less than five percent (5%) of the total maximum bid price payable without recourse to the Town of Addison, or a bid bond in the same amount from a reliable surety company licensed by the State of Texas to act as a Surety and be listed on the current U.S. Treasury Listing of Approved Sureties, or a Binder of Insurance executed by a surety company licensed by the State of Texas to act as a surety or its authorized agent as a guarantee that the bidder will enter into a contract and execute a Performance Bond within ten (10) days after notice of award of contract to him.

4. Plans, specifications and bidding documents may be downloaded from www.bidsync.com. The Town of Addison is a "free buyer", meaning that prospective bidders need only a free registration to sign up for plan updates. Bidders assume all risk for acquiring plans and/or specs from third party sites and plan rooms, as only Bidsync.com will be directly updated by Addison.

5. The right is reserved by the Mayor and the City Council as the interests of the City may require to reject any or all bids and to waive any informality in bids received and to select the proposal deemed most advantageous to the Town.

6. The Bidder (Proposer) must supply all the information required by the Proposal Form.

7. A Performance Bond, Labor and Material Payment Bond, and Maintenance Bond will be required by the Owner; each Bond shall be in the amount of 100% of the total contract amount. Bonds shall be issued by a surety company licensed by the State of Texas to act as a Surety and be listed on the current U.S. Treasury Listing of Approved Sureties.

8. For information, call Will Newcomer, Purchasing Manager, Town of Addison (972) 450-7091. For information on the work to be performed, call Jason Shroyer, P.E., Town of Addison, (972) 450-2849 or Bruce F. Dunne, P.E., Icon Consulting Engineers, Inc., (817) 552-6210.

9. The project consists of installing proposed public water, wastewater, storm drain, electrical, telecommunications and other related improvements in accordance with the plans and specifications.

11. Pre-Bid Conference will be held at 2:30 p.m., on Wednesday, October 12, 2016 in the Conference Room of the Town of Addison's Service Center, 16801 Westgrove Dr., Addison, Texas 75001.

TOWN OF ADDISON, TEXAS

SECTION IB

INSTRUCTIONS TO BIDDERS

INSTRUCTIONS TO BIDDERS

A. PROJECT: **VITRUVIAN PARK PUBLIC INFRASTRUCTURE – PHASE V**, in the Town of Addison.

The bids will be evaluated as stated in Section "P" of the instructions to Bidders.

B. PROJECT DESCRIPTION: This project consists of furnishing and installing paving, drainage and utility improvements in accordance with the plans and specifications.

C. PROPOSALS: Proposals must be in accordance with these instructions in order to receive consideration.

D. DOCUMENTS: Documents include the Bidding Requirements, including the Advertisement for Bids, these Instructions to Bidders, Proposal Forms, Contract Agreement, Bid Bond, Performance Bond, Payment Bond, Maintenance Bond, Contractor's Affidavit of Bills Paid, General Provisions, Special Provisions, Technical Specifications, Waiver of Lien, Drawings, and Addenda which may be issued by the Town of Addison during the bidding period. Bidding Documents may be viewed and/or obtained under the terms and conditions set forth in the Advertisement for Bids, Section AB of this Project Manual.

E. EXAMINATION OF DOCUMENTS AND SITE: Bidders shall carefully examine the Bidding Documents and the construction site to obtain first-hand knowledge of the scope and the conditions of the Work. Each Contractor, Subcontractor and Sub-subcontractor, by submitting a proposal to perform any portion of the Work, represents and warrants that he has examined the Drawings, Specifications (Project Manual) and the site of the Work, and from his own investigation has satisfied himself as to the scope, accessibility, nature and location of the Work; the character of the equipment and other facilities needed for the performance of the Work; the character and extent of other work to be performed; the local conditions; labor availability, practices and jurisdictions and other circumstances that may affect the performance of the Work. No additional compensation will be allowed by the Owner for the failure of such Contractor, Subcontractor or Sub-subcontractor to inform himself as to conditions affecting the Work. **A Pre-Bid Meeting will be held at 2:30 P.M. on Wednesday, the 12th day of October, 2016** at the Addison Service Center, 16801 Westgrove Drive, Addison, Texas 75001.

F. INTERPRETATION OF DOCUMENTS: If any person contemplating submitting a bid for the proposed Contract is in doubt as to the meaning of any part of the Drawings, Specifications (Project Manual) or other proposed Contract Documents, he may submit to the Town of Addison, not later than seven (7) calendar days prior to the date set for opening bids, a written request for an interpretation or clarification. Bidders should act promptly and allow sufficient time for a reply to reach them before preparing their bids. Any interpretation or clarification will be in the form of an Addendum duly issued. No alleged verbal interpretation or ruling will be held binding upon the Owner.

G. SUBSTITUTIONS: Conditions governing the submission of substitutions for specific materials, products, equipment and processes are in the Special Provisions. Requests for substitutions must be received by the Town of Addison seven (7) calendar days prior to the established bid date.

H. ADDENDA: Interpretations, clarifications, additions, deletions and modifications to the Documents during the bidding period will be issued in the form of Addenda and a copy of such Addenda will be released through www.bidsync.com. It is the responsibility of each person who has been issued a set of bid documents to obtain addenda through www.bidsync.com. Addenda will be a part of the Bidding Documents and the Contract Documents, and receipt of them shall be acknowledged in the Bid Form. All such interpretations and supplemental instructions will be in the form of written addenda to the contract documents which, if issued, will be sent by telegram, certified or registered mail, facsimile, email or hand delivered to all prospective bidders (at the respective addresses furnished for such purposes) not later than three (3) calendar days prior to the date fixed for the opening of bids. If any bidder fails to acknowledge the receipt of such addenda in the space provided in the bid form, his bid will nevertheless be construed as though the receipt of such addenda had been acknowledged.

I. COMPLETION TIME: It is understood and agreed to between the Town of Addison and the Contractor that time is of the essence of this contract and that the time allocated for completion of this project will be **180 calendar days**. The time period shall commence ten (10) calendar days following written notification from the Town of Addison that the Contractor may begin work. Reference Special Provision 22 for Explanation of Contract Time. The completion date of the contract will be same date of the Town's final acceptance of the improvements.

J. FAILURE TO COMPLETE ON TIME: The time of completion is an essential element of this contract. For each day that any work shall remain uncompleted after the time specified in the proposal and the Contract, or the increased time granted by the Town of Addison, or as equitably increased by additional work or materials ordered after the Contract is signed, the sum of **$500 per day** shall be deducted from the monies due the Contractor. The sum of money thus deducted for such delay, failure or noncompletion is not to be considered as a penalty, but shall be deemed, taken and treated as reasonable liquidated damages, per day that the Contractor shall be in default after the time stipulated in the Contract for completing the work. The said amounts are fixed and agreed upon by and between the Town of Addison and Contractor because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the Town of Addison would sustain and which shall be retained from the monies due, or that may become due, the Contractor under this Contract: and if said monies be insufficient to cover the amount owing, then the Contractor or its surety shall pay any additional amounts due. In the event that the actual damages incurred by the Town of Addison exceed the amount of liquidated damages, the Town of Addison shall be entitled to recover its actual damages.

K. PREPARATION OF BIDS: Prices quoted shall include all items of cost, expense, taxes, fees and charges incurred by, or arising out of, the performance of the work to be performed under the Contract. Bids shall be submitted in duplicate and shall be signed in ink. Any bid on other than the required form will be considered informal and may be rejected. Erasures or other changes in a bid must be explained or noted over the initials of the bidder. Bids containing any conditions, omissions, unexplained erasures and alterations, or irregularities of any kind may be rejected as informal. The prices should be expressed in words and figures or they may be deemed informal and may be rejected. In case of discrepancy between the prices written in the bid and those given in the figures, the price in writing will be considered as the bid. In the case of a discrepancy between a unit price and its extension, the unit price will govern. Failure to submit all requested information will make a bid irregular and subject to rejection. Bids shall be signed with name typed or printed below signature, and, if a partnership, give full name of all partners. Where bidder is a corporation, bids must be signed with the legal name of the corporation followed by the name of the state

of incorporation and the legal signature of an officer authorized to bind the corporation to a contract.

NOTE: AN ELECTRONIC SPREADSHEET IS POSTED ON BIDSYNC FOR THE CONTRACTORS CONVENIENCE. THIS SPREADSHEET MAY BE USED IN LIEU OF THE MANUAL HANDWRITTEN PROPOSAL FORM IN THE SPECIFICATIONS AND SHALL BE ATTACHED TO THE PROPOSAL AND MADE PART OF THE CONTRACT DOCUMENTS. USING THE SPREADSHEET OPTION SHALL NOT AMEND NOR MODIFY ANY WORDING IN THE PROPOSAL FORM OR THE PLANS AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING THAT THE SPREADSHEET ADEQUATELY CONVEYS THEIR BID.

L. SUBMITTAL OF BIDS: Sealed proposals will be received at the time, date and place stated in the Advertisement for Bids. Proposals shall be made on unaltered Proposal Forms furnished by the Town of Addison. Submit proposal in an opaque, sealed envelope addressed to the Owner and plainly mark on the outside of the envelope the project name, and the name and address of the bidder. The envelopes shall be marked with the following project names:

INFRASTRUCTURE & DEVELOPMENT SERVICES # 2016-09
VITRUVIAN PARK PUBLIC INFRASTRUCTURE – BLOCK 200

The Bid Bond must be completed and signed by each bidder and submitted with the bid. Submit Bids by mail or in person prior to the time for receiving bids set forth in the Advertisement for Bids issued by the Town.

Electronic bidding on bidsycn.com will not be considered for this project. The Town of Addison uses bidsync to distribute bids and proposals. There will be NO COST to the contractor for standard bids or proposals. The project is considered a standard bid. For cooperative Bids and Reverse Auctions ONLY, the successful contractor/supplier agrees to pay bidsync a transaction fee of one percent (1%) of the total amount of all contracts for goods and/or services. Cooperative Bids and Reverse Auctions will be clearly marked on the bid documents. To assure that all contractors/suppliers are treated fairly, the fee will be payable whether the bid/proposal is submitted electronically, or by paper means. Refer to www.bidsync.com for further information.

M. MODIFICATION AND WITHDRAWAL OF BIDS: Prior to the time set for bid opening, bids may be withdrawn or modified. Bids may be modified only on the official bid form and must be signed by a person legally empowered to bind the bidder. No bidder shall modify, withdraw or cancel his bid or any part thereof for sixty (60) calendar days after the time agreed upon for the receipt of bids.

N. DISQUALIFICATION: The Owner reserves the right to disqualify proposals, before or after the opening, upon evidence of collusion with intent to defraud or other illegal practices relating to this proposal upon the part of the bidder.

O. SUBMISSION OF POST-BID INFORMATION: Upon notification of acceptance, the selected bidder shall, within five (5) calendar days, submit the following:

1. A designation of the portions of the Work proposed to be performed by the bidder with his own force.

2. A list of names of the subcontractors or other persons or organizations, including those who are to furnish materials and equipment fabricated to a special design proposed for such portions of the Work as may be designated in the Bidding Documents or as may be requested by the Town of Addison. The bidder will be required to establish to the satisfaction of the Owner the reliability and responsibility of the proposed Subcontractors and suppliers to furnish and perform the Work.

3. Other information as required.

P. AWARD: The Owner reserves the right to accept any or to reject any bids without compensation to bidders and to waive irregularities and informalities. The Town of Addison Infrastructure & Development Services Department, in making its recommendation, will consider the following elements:

1. Whether the bidder is a contractor with experience in the type of work involved.

2. Whether the bidder has adequate plant, equipment and personnel to perform the work properly and expeditiously.

3. Whether the bidder has a suitable financial status and reputation for meeting obligations incident to work of the kind specified.

4. Whether the bidder has complied with the terms and conditions of the A+B bidding.

Alternate items may or may not be awarded. Addition or deletion of other items or schedules will be governed by the *Standard Specifications for Public Works Construction – North Central Texas, 4th Edition*, (hereinafter called SSPWC) Item 104.2 "Change or Modification of Contract".

Q. EXECUTION OF THE CONTRACT: The successful bidder will be required to enter into a contract with the Owner within ten (10) days of notice by the Owner that his bid has been accepted. Failure to enter into a contract within the established time limit shall be considered grounds for forfeiture of the bid bond.

R. CONSTRUCTION SCHEDULE: It is the Owner's desire to have the project completed and operational in as short a time as possible. The number of calendar days for completion of the project will begin with the date specified in the Notice to Proceed. The Notice to Proceed will be issued in a manner to facilitate a smooth construction of the project. The Contractor shall begin construction within ten (10) calendar days of the issuance of the Notice to Proceed.

S. FORM OF CONTRACT: The contract for the construction of the project will be drawn up by the Owner. A sample form of agreement is included in the Contract Agreement Section.

T. BONDS: A Performance Bond, a Labor and Material Payment Bond and a Maintenance Bond will be required by the Owner. The performance and payment bonds shall name the Town of Addison, and others as directed by the Town, as joint obligees. Sample forms have been included in the Performance Bond, Payment Bond and Maintenance Bond sections.

U. BID SECURITY: Bids shall be accompanied by a cashier's check or certified check upon a national or state bank in an amount not less than five percent (5%) of the total maximum bid price payable without recourse to the Town of Addison, or a bid bond in the same amount from a surety company licensed to do business in the State of Texas as a guarantee that the

bidder will enter into a contract and execute a Performance Bond and Payment Bond within ten (10) calendar days after notice of award of contract to him. Such checks or bid bonds will be returned to all except the three lowest bidders within three (3) days after the opening of bids, and the remaining checks or bid bonds will be returned promptly after the Owner has made an award of contract, or, if no award has been made within thirty (30) calendar days after the date of the opening of bids, upon demand of the bidder at any time thereafter, so long as he has not been notified of the acceptance of his bid.

V. RESOLUTIONS: If the bidder is a corporation, a copy of the resolution empowering the person submitting the bid to bind the bidder must be included with the bid.

W. CONSTRUCTION STAKING: Construction staking and re-staking will not be provided by the Owner. Benchmarks and Horizontal Control are shown on the plans. There is no separate bid item for staking, therefore, the contractor must include value for staking in the various bid items as subsidiary to the contract. Any staking or re-staking that is required shall be the responsibility of the Contractor and shall be at no cost to the Owner.

X. FINAL PAYMENT: The general provisions for Final Payment shall be as stated in Item 1.09.5.4 of the North Central Texas Standard Specifications for Public Works Construction (4^{th} Edition) including all Amendments and Additions. Prior to final payment the Contractor shall provide the Owner with the following items:

1. A Contractor's Affidavit of Bills Paid in accordance with Section BP.
2. A Consent of Surety Company to Final Payment.
3. A complete set of record plans which indicate all construction variations from the original construction documents in accordance with Item 5 of the Special Provisions.
4. A two (2) year Maintenance Bond in accordance with Section MB.
5. Acknowledgement that the project has been reviewed and accepted by TDLR.

Y. PREVAILING WAGE RATES: Wage rates paid on this project shall not be less than specified in the schedule of general prevailing rates of per diem wages as attached in the Special Provisions.

Z. PRIORITY OF CONTRACT DOCUMENTS: In case of conflict between contract documents, priority of interpretation shall be in the following order: signed agreement, performance and payment bonds, proposal, special provisions (or conditions), technical specifications, general provisions, advertisement for bids, project drawings, *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges* adopted by the Texas Department of Transportation June 1, 2004; Standard Specifications for Public Works Construction – North Central Texas (NCTCOG, October 2004); Town of Addison Standard Drawings. This priority list shall take precedence over item 1.05.1 of the SSPWC.

SECTION PF

PROPOSAL FORM

PROPOSAL FORM

10/25, 2016

TO: The Honorable Mayor and Town Council
Town of Addison, Texas

Gentlemen:

The undersigned bidder, having examined the plans, specifications and contract documents, and the location of the proposed work, and being fully advised as to the extent and character of the work, proposes to furnish all equipment and to perform labor and work necessary for completion of the work described by and in accordance with the Plans, Specifications and Contract for the following prices, to wit:

Signed by: _____

ACKNOWLEDGMENT OF ADDENDA:

The Bidder acknowledges receipt of the following addenda:

Addendum No. 1 _____

Addendum No. 2 _____

Addendum No. 3 _____

VITRUVIAN PARK PUBLIC INFRASTRUCTURE - BLOCK 200
PAVING, DRAINAGE AND UTILITY IMPROVEMENTS
TOWN OF ADDISON PROJECT #2016-09

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
1	1	L.S.	For Mobilization (not to exceed 5% of total bid amount) complete in place, the sum of one hundred fifty thousand Dollars and zero Cents per Lump Sum	150,000.00	150,000.00
2	1	L.S.	For Installation and Maintenance of Barricades, Signage, Pav't Markings and Traffic Control Measures for Marsh Lane Water Improvements complete in place, the sum of Ten thousand Dollars and Zero Cents per Lump Sum	10,000.00	10,000.00
3	1	L.S.	For Installation and Maintenance of Barricades, Signage, Pav't Markings and Traffic Control Measures for Marsh Lane Sanitary Sewer Improvements complete in place, the sum of Nine thousand Dollars and Zero Cents per Lump Sum	9,000.00	9,000.00
4	1	L.S.	For Installation and Maintenance of Barricades, Signage, Pav't Markings and Traffic Control Measures for Marsh Lane and Vitruvian Way Paving Improvements complete in place, the sum of Fifteen thousand Dollars and Zero Cents per Lump Sum	15,000.00	15,000.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
5	2	EA.	For Furnishing and Installing Project Signs in Accordance with Sign Plan complete in place, the sum of _____ One thousand Dollars and Zero Cents per Each	1,000.00	2,000.00
6	1	L.S.	For Compliance with Storm Water Pollution Prevention Plan Including Maintenance of Erosion Control Devices complete in place, the sum of _____ Four thousand Dollars and Zero Cents per Lump Sum	4,000.00	4,000.00
7	3	EA.	For Furnishing, Installation and Maintenance of Construction Entrance complete in place, the sum of _____ Four thousand Dollars and Zero Cents per Each	4,000.00	12,000.00
8	1,335	L.F.	For Furnishing, Installation and Maintenance of Silt Fence Sediment Barrier complete in place, the sum of _____ Four Dollars and Zero Cents per Linear Foot	4.00	5,340.00
9	18	EA.	For Furnishing, Installation and Maintenance of Inlet Protection Devices complete in place, the sum of _____ Two Hundred Dollars and Zero Cents per Each	200.00	3,600.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
10	110	L.F.	For Furnishing, Installation and Maintenance of Tree Protection Fencing complete in place, the sum of _____ Two Dollars and Zero Cents per Linear Foot	2.00	220.00
11	2,715	S.Y.	For Sawcutting, Removal & Recycling of Existing Asphalt Street Pavement (Reference Special Provision 85) complete in place, the sum of _____ Ten Dollars and Zero Cents per Square Yard	10.00	27,150.00
12	1,025	S.Y.	For Sawcutting, Removal & Recycling of Existing Concrete Street Pavement (Reference Special Provision 85) complete in place, the sum of _____ Fifteen Dollars and Zero Cents per Square Yard	15.00	15,375.00
13	2,441	S.F.	For Sawcutting, Removal & Recycling of Existing Concrete Sidewalk Pavement (Reference Special Provision 85) complete in place, the sum of _____ Two Dollars and Zero Cents per Square Foot	2.00	4,882.00
14	746	L.F.	For Sawcutting, Removal and Recycling of Existing Concrete Curb and Gutter complete in place, the sum of _____ Ten Dollars and Zero Cents per Linear Foot	10.00	7,460.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
15	1	EA.	For Removal and Disposal of Existing Drop Inlet and Concrete Apron complete in place, the sum of _____ Two thousand Dollars and Zero Cents per Each	2,000.00	2,000.00
16	1	EA.	For Removal and Disposal of Existing 10' Curb Inlet complete in place, the sum of _____ Two thousand Dollars and Zero Cents per Each	2,000.00	2,000.00
17	45	EA.	For Removal and Disposal of Existing Trees complete in place, the sum of _____ Three Hundred Dollars and Zero Cents per Each	300.00	13,500.00
18	850	L.F.	For Removal and Disposal of Existing Cable Barrier Fence complete in place, the sum of _____ Four Dollars and Zero Cents per Linear Foot	4.00	3,400.00
19	1	L.S.	For Removal and Disposal of Existing Overhead Secondary (450 LF) and 3 Poles with Lights complete in place, the sum of _____ Five thousand Dollars and Zero Cents per Lump Sum	5,000.00	5,000.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
20	420	L.F.	For Removal and Disposal of Existing Concrete Block Wall and Footing complete in place, the sum of _____ Forty Dollars and Zero Cents per Linear Foot	40.00	16,800.00
21	32	L.F.	For Removal and Disposal of Existing 6' High Chain Link Fencing complete in place, the sum of _____ Fourteen Dollars and Zero Cents per Linear Foot	14.00	448.00
22	3	EA.	For Removal, Storage and Re-installation of Existing Street Signage complete in place, the sum of _____ One Hundred Twenty Dollars and Zero Cents per Each	120.00	360.00
23	1	L.S.	For Removal and Disposal of Existing Tree Planters and Bollards along Marsh Lane complete in place, the sum of _____ Four thousand Dollars and Zero Cents per Lump Sum	4,000.00	4,000.00
24	2,465	C.Y.	For Unclassified Street Excavation and Controlled Density Placement of Embankment Materials for Westgate Lane, Drive Approach on Marsh Lane and Parallel Parking along Vitruvian Way complete in place, the sum of _____ Twenty Dollars and Zero Cents per Cubic Yard	20.00	49,300.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
25	4,595	S.Y.	For Fine Grading and Subgrade Preparation complete in place, the sum of _____ Four Dollars and Zero Cents per Square Yard	4,00	18,380.00
26	4,595	S.Y.	For 6" Lime Stabilized Subgrade complete in place, the sum of _____ Seven Dollars and Zero Cents per Square Yard	7,00	32,165,00
27	83	TONS	For Furnishing and Placing Hydrated Lime (8% by Weight) complete in place, the sum of _____ Two Hundred Ten Dollars and Zero Cents per Ton	210.00	17,430.00
28	3,861	S.Y.	For Furnishing and Placing 10" Reinforced Concrete Street Pavement (4200 PSI) complete in place, the sum of _____ Ninety Five Dollars and Zero Cents per Square Yard	95,00	366,795,00
29	103	S.Y.	For Furnishing and Placing 8" Reinforced Concrete Street Pavement (4200 PSI) complete in place, the sum of _____ One Hundred Fifteen Dollars and Zero Cents per Square Yard	115,00	11,845.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
30	2,586	L.F.	For Constructing 6" Reinforced Monolithic Concrete Curb complete in place, the sum of _____ Thirty Dollars and Zero Cents per Linear Foot	30.00	77,580.00
31	75	L.F.	For Constructing 6" Reinforced Monolithic Concrete Rollover Curb complete in place, the sum of _____ Fourty Five Dollars and Zero Cents per Linear Foot	45.00	3,375.00
32	158	L.F.	For Constructing 6" Reinforced Concrete Curb & Gutter complete in place, the sum of _____ Fifty Dollars and Zero Cents per Linear Foot	50.00	7,900.00
33	48	L.F.	For Constructing Concrete Street Header complete in place, the sum of _____ Fourty Dollars and Zero Cents per Linear Foot	40.00	1,920.00
34	2,819	S.F.	For Furnishing and Placing 4-inch thick Reinforced Concrete Sidewalk Pavement complete in place, the sum of _____ Eight Dollars and Zero Cents per Square Foot	8.00	22,552.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
35	353	S.Y.	**For Furnishing and Placing 4" Crushed Limestone Flex Base** complete in place, the sum of _____ Twenty Five Dollars and Zero Cents per Square Yard	25.00	8,825.00
36	311	S.Y.	**For Furnishing and Placing 4" HMAC Type "B" Base Course** complete in place, the sum of _____ Forty Two Dollars and Zero Cents per Square Yard	42.00	13,062.00
37	311	S.Y.	**For Furnishing and Placing 2" HMAC Type "D" Surface Course** complete in place, the sum of _____ Twenty Three Dollars and Zero Cents per Square Yard	23.00	7,153.00
38	62	GAL	**For Furnishing and Placing Emulsion Asphalt Membrane (MS-2) (0.2 Gal/SY)** complete in place, the sum of _____ Fifty Two Dollars and Zero Cents per Gallon	52.00	3,224.00
39	315	S.F.	**For Furnishing, Laying and Compacting Short Term Asphalt Pavement Repair** complete in place, the sum of _____ Eleven Dollars and Zero Cents per Square Foot	11.00	3,465.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
40	1,530	C.Y.	For Furnishing and Placement of Topsoil Placement to a Depth of 6" complete in place, the sum of _____ Forty Dollars and Zero Cents per Cubic Yard	40.00	61,200.00
41	83	S.F.	For Furnishing and Installing Pavestone ADA Truncated Dome Concrete Paver, Running Bond Pattern, 2-3/8" Thickness, Bellows Brown Color complete in place, the sum of _____ Eleven Dollars and Zero Cents per Square Foot	11.00	913.00
42	345	S.F.	For Furnishing and Installing Pavestone Concrete Street Paver, Running Bond Pattern, 3-1/8" Thickness, Bellows Brown Color complete in place, the sum of _____ Twelve Dollars and Zero Cents per Square Foot	12.00	4,140.00
43	4	EA.	For Furnishing and Installing White Thermoplastic "ARROW" Pavement Marking complete in place, the sum of _____ Six Hundred Dollars and Zero Cents per Each	600.00	2,400.00
44	2	EA.	For Furnishing and Installing White Thermoplastic "ONLY" Pavement Marking complete in place, the sum of _____ Seven Hundred Dollars and Zero Cents per Each	700.00	1,400.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
45	320	L.F.	For Furnishing and Installing 4-Inch Wide White Solid Thermoplastic Pavement Marking complete in place, the sum of _____ Four Dollars and Zero Cents per Linear Foot	4.00	1,280.00
46	305	L.F.	For Furnishing and Installing 8-Inch Wide Yellow Solid Thermoplastic Pavement Marking complete in place, the sum of _____ Eight Dollars and Zero Cents per Linear Foot	8.00	2,440.00
47	86	L.F.	For Furnishing and Installing 8-Inch Wide White Solid Thermoplastic Pavement Marking complete in place, the sum of _____ Eight Dollars and Zero Cents per Linear Foot	8.00	688.00
48	48	L.F.	For Furnishing and Installing 24-Inch Wide White Solid Thermoplastic Pavement Marking (Stop Bar) complete in place, the sum of _____ Twenty Four Dollars and Zero Cents per Linear Foot	24.00	1,152.00
49	91	L.F.	For Furnishing and Installing 12-Inch Wide White Solid Thermoplastic Pavement Marking (Crosswalk) complete in place, the sum of _____ Twelve Dollars and Zero Cents per Linear Foot	12.00	1,092.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
50	16	EA.	For Furnishing and Installing Type 11-AA-4 Reflectorized Pavement Marker complete in place, the sum of _____ Six Dollars and Zero Cents per Each	6.00	96.00
51	5	EA.	For Furnishing and Installing Type 1-C-4 Reflectorized Pavement Marker complete in place, the sum of _____ Six Dollars and Zero Cents per Each	6.00	~~76~~ 30.00
52	7	EA.	For Furnishing and Installing Type 11 Reflectorized Blue Pav't Markers for Hydrants complete in place, the sum of _____ Six Dollars and Zero Cents per Each	6.00	42.00
53	2	EA.	For Furnishing and Installing Stop Sign (R1-1) complete in place, the sum of _____ Four Hundred Dollars and Zero Cents per Each	400.00	800.00
54	1	EA.	For Furnishing and Installing Stop Sign (R1-1) Complete with Two Street Name Signs and Mount per Vitruvian Park Standards complete in place, the sum of _____ Five Hundred Dollars and Zero Cents per Each	500.00	500.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
55	2	EA.	For Furnishing and Installing Speed Limit Sign (R2-1) complete in place, the sum of _____ Three Hundred Dollars and Zero Cents per Each	300.00	600.00
56	285	L.F.	For Excavation of Earthen Drainage Swale complete in place, the sum of _____ Fifteen Dollars and Zero Cents per Linear Foot	15.00	4,275.00
57	1	EA.	For Removal of Plug and Connecting Proposed Pipe to Existing 24-Inch Storm Sewer Pipe complete in place, the sum of _____ Two Thousand Dollars and Zero Cents per Each	2,000.00	2,000.00
58	1	EA.	For Constructing Standard 5' Type "B" Square Storm Drain Manhole over Existing 39" RCP complete in place, the sum of _____ Seven Thousand Dollars and Zero Cents per Each	7,000.00	7,000.00
59	7	EA.	For Constructing Standard 4' Type "A" Square Storm Drain Manhole complete in place, the sum of _____ Six Thousand Dollars and Zero Cents per Each	6,000.00	42,000.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
60	1	EA.	For Constructing Standard 3' Square Drop Inlet with 2' Concrete Apron complete in place, the sum of _____ Seven Thousand Dollars and Zero Cents per Each	7,000.00	7,000.00
61	2	EA.	For Constructing 10' Standard Curb Inlet complete in place, the sum of _____ Ten Thousand Dollars and Zero Cents per Each	10,000.00	20,000.00
62	6	EA.	For Constructing 6' Standard Curb Inlet complete in place, the sum of _____ Nine Thousand Dollars and Zero Cents per Each	9,000.00	54,000.00
63	475	L.F.	For Furnishing and Installing 30-Inch Reinforced Concrete Pipe (Class III) complete in place, the sum of _____ One Hundred Twenty Dollars and Zero Cents per Linear Foot	120.00	57,000.00
64	309	L.F.	For Furnishing and Installing 27-Inch Reinforced Concrete Pipe (Class III) complete in place, the sum of _____ One Hundred Ten Dollars and Zero Cents per Linear Foot	110.00	33,990.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
65	513	L.F.	**For Furnishing and Installing 24-Inch Reinforced Concrete Pipe (Class III)** complete in place, the sum of _____ One Hundred Six Dollars and Zero Cents per Linear Foot	106.00	54,378.00
66	692	L.F.	**For Furnishing and Installing 18-Inch Reinforced Concrete Pipe (Class III)** complete in place, the sum of _____ One Hundred Dollars and Zero Cents per Linear Foot	100.00	69,200.00
67	1	EA.	**For Furnishing and Installing Concrete Plug for 24-Inch Reinforced Concrete Pipe (Class III)** complete in place, the sum of _____ Eighty Dollars and Zero Cents per Each	80.00	80.00
68	16	EA.	**For Furnishing and Installing Concrete Plug for 18-Inch Reinforced Concrete Pipe (Class III)** complete in place, the sum of _____ Sixty Dollars and Zero Cents per Each	60.00	960.00
69	1,989	L.F.	**For TV Inspection of Storm Drain System** complete in place, the sum of _____ Five Dollars and Zero Cents per Linear Foot	5.00	9,945.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
70	1	L.S.	For Preparing, Furnishing, Installing and Maintaining Trench Safety System for Storm Drain Improvements complete in place, the sum of _____ Ten Thousand Dollars and Zero Cents per Lump Sum	10,000 00	10,000.00
71	837	L.F.	For Removal and Disposal of Existing 8" Water Line complete in place, the sum of _____ Eighteen Dollars and Zero Cents per Linear Foot	18.00	15,066.00
72	5	L.F.	For Removal and Disposal of Existing 6" Water Line complete in place, the sum of _____ Seventeen Dollars and Zero Cents per Linear Foot	17.00	85.00
73	1	EA.	For Removal of Plug & Blocking and Connection to Existing 12-inch Water Pipe complete in place, the sum of _____ Two Thousand Dollars and Zero Cents per Each	2,000.00	2,000.00
74	7	EA.	For Removal and Disposal of Existing Meter Boxes and Service Lines complete in place, the sum of _____ One Hundred Dollars and Zero Cents per Each	100,00	700.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
75	2	EA.	For Removal of 45 Degree Bend & Blocking and Connection to Existing 8-inch Water Pipe complete in place, the sum of _____ Two Thousand Dollars and Zero Cents per Each	2,000.00	4,000.00
76	3	EA.	For Connection to Existing 8" Water Pipe complete in place, the sum of _____ Two Thousand Dollars and Zero Cents per Each	2,000.00	6,000.00
77	1	EA.	For Removal and Salvaging of Existing Fire Hydrant Assembly complete in place, the sum of _____ Five Hundred Dollars and Zero Cents per Each	500.00	500.00
78	687	L.F.	For Furnishing and Installing 12-Inch PVC Water Pipe by Open Cut with Std. Embedment complete in place, the sum of _____ Eighty Dollars and Zero Cents per Linear Foot	80.00	54,960.00
79	20	L.F.	For Furnishing and Installing 12-Inch Ductile Iron Water Pipe by Open Cut with Std. Embedment complete in place, the sum of _____ One Hundred Eighty Dollars and Zero Cents per Linear Foot	180.00	3,600.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
80	1,510	L.F.	For Furnishing and Installing 8-Inch PVC Water Pipe by Open Cut with Std. Embedment complete in place, the sum of _____ Seventy Dollars and Zero Cents per Linear Foot	70.00	105,700.00
81	102	L.F.	For Furnishing and Installing 8-Inch Ductile Iron Water Pipe by Open Cut with Std. Embedment complete in place, the sum of _____ One Hundred Thirty Dollars and Zero Cents per Linear Foot	130.00	13,260.00
82	46	L.F.	For Furnishing and Installing 6-Inch PVC Water Pipe by Open Cut with Std. Embedment complete in place, the sum of _____ Seventy Dollars and Zero Cents per Linear Foot	70.00	3,220.00
83	33	L.F.	For Furnishing and Installing 4" PVC Water Pipe by Open Cut with Std. Embedment complete in place, the sum of _____ Sixty Five Dollars and Zero Cents per Linear Foot	65.00	2,145.00
84	106	L.F.	For Furnishing and Installing 2" CU Water Pipe by Open Cut with Std. Embedment complete in place, the sum of _____ Forty Dollars and Zero Cents per Linear Foot	40.00	4,240.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
85	51	L.F.	**For Furnishing and Installing 1 1/2" CU Water Pipe by Open Cut with Std. Embedment** complete in place, the sum of _____ Forty Dollars and Zero Cents per Linear Foot	40.00	2,040.00
86	8	EA.	**For Furnishing and Installing 12-Inch Gate Valve Complete w/ Valve Box, Extention, Collar, Debris Cap and Cover** complete in place, the sum of _____ Two Thousand Four Hundred Dollars and Zero Cents per Each	2,400.00	19,200.00
87	21	EA.	**For Furnishing and Installing 8-Inch Gate Valve Complete w/ Valve Box, Extention, Collar, Debris Cap and Cover** complete in place, the sum of _____ Sixteen Hundred Dollars and Zero Cents per Each	1,600.00	33,600.00
88	7	EA.	**For Furnishing and Installing 6-Inch Gate Valve Complete w/ Valve Box, Extention, Collar, Debris Cap and Cover** complete in place, the sum of _____ Eleven Hundred Dollars and Zero Cents per Each	1,100.00	7,700.00
89	1	EA.	**For Furnishing and Installing 4-Inch Gate Valve Complete w/ Valve Box, Extention, Collar, Debris Cap and Cover** complete in place, the sum of _____ Nine Hundred Dollars and Zero Cents per Each	900.00	900.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
90	7	EA.	For Furnishing and Installing Fire Hydrant Assembly, Complete in Place complete in place, the sum of _____ Thirty Five Hundred Dollars and Zero Cents per Each	3,500.00	24,500.00
91	6.80	TONS	For Furnishing and Installing Ductile Iron Full Bodied Mechanical Joint Type Fittings w/ Restraining Glands for Water Pipe complete in place, the sum of _____ Eight Thousand Dollars and Zero Cents per Ton	8,000.00	54,400.00
92	5	EA.	For Furnishing and Installing 2" Water Service Tap complete in place, the sum of _____ Five Hundred Dollars and Zero Cents per Each	500.00	2,500.00
93	2	EA.	For Furnishing and Installing 1 1/2" Water Service Tap complete in place, the sum of _____ Four Hundred Dollars and Zero Cents per Each	400.00	800.00
94	1	EA.	For Furnishing and Installing 2" Meter and Meter Box complete in place, the sum of _____ Two Thousand Dollars and Zero Cents per Each	2,000.00	2,000.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
95	3	EA.	For Furnishing and Installing 2" Meter Box complete in place, the sum of _____ Seven Hundred Dollars and Zero Cents per Each	700.00	2,100.00
96	2	EA.	For Furnishing and Installing 1 1/2" Meter Box complete in place, the sum of _____ Six Hundred Dollars and Zero Cents per Each	600.00	1,200.00
97	2	EA.	For Reconnection of Exist Domestic/Irrigation Water Services to New 12" Water Pipe complete in place, the sum of _____ One Thousand Three Hundred Dollars and Zero Cents per Each	1,300.00	2,600.00
98	37	EA.	For Final Adjustment of Existing Water Valves to Finish Grade complete in place, the sum of _____ One Hundred Dollars and Zero Cents per Each	100.00	3,700.00
99	1	EA.	For Furnishing and Installing Automatic Flushing Device, Kupferle 9800i - Genesis or Approved Equal complete in place, the sum of _____ Twenty Four Thousand Dollars and Zero Cents per Each	24,000.00	24,000.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
100	1	L.S.	For Preparing, Furnishing, Installing and Maintaining Trench Safety System for Water Line Improvements complete in place, the sum of _____ Three Thousand Dollars and Zero Cents per Lump Sum	3,000.00	3,000.00
101	3	EA.	For Connection to Existing Sanitary Sewer Manhole complete in place, the sum of _____ Two Thousand Dollars and Zero Cents per Each	2,000.00	6,000.00
102	1	EA.	For Abandonment of Existing Sanitary Sewer Manhole per Town of Addison Requirements complete in place, the sum of _____ Two Thousand Dollars and Zero Cents per Each	2000.00	2000.00
103	898	L.F.	For Cutting and Filling of Existing 8" Sewer Pipe with Flowable Fill (NTCOG 504.2.3.4) complete in place, the sum of _____ Seven Dollars and Zero Cents per Linear Foot	7.00	6,286.00
104	1,334	L.F.	For Furnishing and Installing 10-Inch PVC Sanitary Sewer Pipe by Open Cut with Std. Embedment complete in place, the sum of _____ Eighty Dollars and Zero Cents per Linear Foot	80.00	106,720.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
105	25	L.F.	For Furnishing and Installing 10-Inch PVC Sanitary Sewer Pipe by Open Cut with Cement Stabilized Sand Embedment complete in place, the sum of _____ One Hundred Twenty Dollars and Zero Cents per Linear Foot	120.00	3,000.00
106	18	L.F.	For Furnishing and Installing 10-Inch PVC Sanitary Sewer Pipe with 18" Steel Encasement Pipe (0.375" thickness) by Open Cut with Std. Embedment complete in place, the sum of _____ Two Hundred Thirty Dollars and Zero Cents per Linear Foot	230.00 ~~4,140.00~~	4,140.00
107	40	L.F.	For Furnishing and Installing 10-Inch PVC Sanitary Sewer Pipe with 18" Steel Encasement Pipe (0.375" thickness) by Other Than Open Cut complete in place, the sum of _____ Three Hundred Ninety Dollars and Zero Cents per Linear Foot	390.00	15,600.00
108	523	L.F.	For Furnishing and Installing 8-Inch PVC Sanitary Sewer Pipe by Open Cut with Std. Embedment complete in place, the sum of _____ Eighty Dollars and Zero Cents per Linear Foot	80.00	41,840.00
109	41	L.F.	For Furnishing and Installing 8-Inch PVC Sanitary Sewer Pipe by Open Cut with Cement Stabilized Sand Embedment complete in place, the sum of _____ One Hundred Thirty Dollars and Zero Cents per Linear Foot	130.00	5,330.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
110	54	L.F.	For Furnishing and Installing 8-Inch PVC Sanitary Sewer Pipe with 18" Steel Encasement Pipe (0.375" thickness) by Open Cut with Std. Embedment complete in place, the sum of _____ Two Hundred Ninety Dollars and Zero Cents per Linear Foot	290.00	15,660.00
111	95	L.F.	For Furnishing and Installing 8-Inch PVC Sanitary Sewer Pipe with 18" Steel Encasement Pipe (0.375" thickness) by Other Than Open Cut complete in place, the sum of _____ Three Hundred Eighty Dollars and Zero Cents per Linear Foot	380.00	36,100.00
112	46	L.F.	For Furnishing and Installing 6-Inch PVC Sanitary Sewer Pipe by Open Cut with Std. Embedment complete in place, the sum of _____ Seventy Five Dollars and Zero Cents per Linear Foot	75.00	3450.00
113	9	L.F.	For Furnishing and Installing 4-Inch PVC Sanitary Sewer Pipe by Open Cut with Std. Embedment complete in place, the sum of _____ Seventy Dollars and Zero Cents per Linear Foot	70.00	630.00
114	14	EA.	For Furnishing and Installing Sanitary Sewer Lateral Cleanouts complete in place, the sum of _____ One Thousand Dollars and Zero Cents per Each	1,000.00	14,000.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
115	1	EA.	For Installing 4" Service Taps complete in place, the sum of _____ Three Hundred Dollars and Zero Cents per Each	300.00	300.00
116	1	EA.	For Constructing Standard 4' Diameter Sanitary Sewer Manhole to 6' Depth with Standard Frame and Cover, over Existing Sewer Lines complete in place, the sum of _____ Six Thousand Dollars and Zero Cents per Each	6000.00	6,000.00
117	10	EA.	For Constructing Standard 4' Diameter Sanitary Sewer Manhole to 6' Depth with Standard Frame and Cover complete in place, the sum of _____ Four Thousand Dollars and Zero Cents per Each	4,000.00	40,000.00
118	24	V.F.	For Extra Depth for Standard 4' Diameter Manhole in Excess of 6' Depth complete in place, the sum of _____ Two Hundred Dollars and Zero Cents per Vertical Feet	200.00	4,800.00
119	1	EA.	For Constructing Standard 5' Diameter Internal Drop Sanitary Sewer Manhole to 6' Depth with Standard Frame and Cover complete in place, the sum of _____ Six Thousand Dollars and Zero Cents per Each	6000.00	6,000.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
120	4	V.F.	For Extra Depth for Standard 5' Diameter Internal Drop Manhole in Excess of 6' Depth complete in place, the sum of _____ Two Hundred Fifty Dollars and Zero Cents per Vertical Feet	250.00	1,000.00
121	12	EA.	For Final Adjustment of Sanitary Sewer Manholes to Finish Grade complete in place, the sum of _____ Three Hundred Dollars and Zero Cents per Each	300.00	3,600.00
122	631	S.Y.	For Sawcutting, Removal and Replacement of Concrete Street Pavement complete in place, the sum of _____ One Hundred Fifty Dollars and Zero Cents per Square Yard	150.00	94,650.00
123	2,185	L.F.	For TV Inspection of Sanitary Sewer System complete in place, the sum of _____ $ Three Dollars and Zero Cents per Linear Foot	3.00	6,550.00
124	1	L.S.	For Preparing, Furnishing, Installing and Maintaining Trench Safety System for Sewer Line Improvements complete in place, the sum of _____ Ten Thousand Dollars and Zero Cents per Lump Sum	10,000.00	10,000.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
125	31	EA.	For Furnishing and Installation of Street Light Pole, Type 1, Single 100W 240V MH Luminare on 11'-8" Pole, Color Silver, Complete in Place (Reference Special Provision 84) complete in place, the sum of _____ Thirty Five Hundred Dollars and Zero Cents per Each	3,500.00	108,500.00
126	31	EA.	For Concrete Drilled Shaft Foundation, Type 1, Complete in Place complete in place, the sum of _____ Six Hundred Dollars and Zero Cents per Each	600.00	18,600.00
127	8	L.F.	For Furnishing and Installation of 2" Schedule 40 PVC Conduit complete in place, the sum of _____ Thirty Dollars and Zero Cents per Linear Foot	30.00	240.00
128	2,137	L.F.	For Furnishing and Installation of 1 1/4" Schedule 40 PVC Conduit complete in place, the sum of _____ Twenty Five Dollars and Zero Cents per Linear Foot	25.00	53,245.00
129	4,870	L.F.	For Furnishing and Installation of Electric Conductor (No. 6 CU) XHHW-2 Insulated complete in place, the sum of _____ One Dollars and Zero Cents per Linear Foot	1.00	4,870.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
130	2,435	L.F.	For Furnishing and Installation of Electric Conductor (No. 10 CU) XHHW-2 Insulated complete in place, the sum of _____ Two Dollars and Zero Cents per Linear Foot	2.00	4,870.00
131	1	EA.	For Connection to Existing Street Light Circuit complete in place, the sum of _____ Two Thousand Dollars and Zero Cents per Each	2,000.00	2,000.00
132	3	EA.	For Connection to Existing Street Light Conduits complete in place, the sum of _____ Five Hundred Dollars and Zero Cents per Each	500.00	1,500.00
133	2	EA.	For Furnishing and Installation of Ground Box, Type A complete in place, the sum of _____ One Thousand Dollars and Zero Cents per Each	1,000.00	2,000.00
134	229	L.F.	For Furnishing and Installation of 1-6" and 1-2" Schedule 40 PVC Irrigation Conduits complete in place, the sum of _____ Thirty Dollars and Zero Cents per Linear Foot	30.00	6,870.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
135	1	EA.	**For Furnishing and Installation of Electric Service Pedestal, Type PS, 120/240 V, Single Phase Electric Service, Milbank CP3B A-Size or Approved Equal, with 200 Amp Panel and Main Breaker, Lighting Control with HOA Switch, Photo Electric Controlled with Distribution Blocks, Complete in Place** **complete in place, the sum of** Five Thousand **Dollars and** Zero **Cents per Each**	5,000.00	5,000.00
136	8	L.F.	**For Furnishing and Constructing 8E6 Duct Bank Structure per Oncor Electric Delivery** **complete in place, the sum of** Four Hundred Ten **Dollars and** Zero **Cents per Linear Foot**	410.00	3,280.00
137	1,596	L.F.	**For Furnishing and Constructing 6E6 Duct Bank Structure per Oncor Electric Delivery** **complete in place, the sum of** One Hundred Eighty **Dollars and** Zero **Cents per Linear Foot**	180.00	287280.00
138	839	L.F.	**For Furnishing and Constructing 4E6 Duct Bank Structure with (2) -3" conduits above per Oncor Electric Delivery** **complete in place, the sum of** One Hundred Seventy **Dollars and** Zero **Cents per Linear Foot**	170.00	142,630.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
139	209	L.F.	For Furnishing and Constructing 2E6 Duct Bank Structure per Oncor Electric Delivery complete in place, the sum of _____ One Hundred Fifty Dollars and Zero Cents per Linear Foot	150.00	31,350.00
140	1	EA.	For Furnishing and Constructing 4 Way Electrical Manhole per Oncor Electric Delivery complete in place, the sum of _____ Twenty Three Thousand Dollars and Zero Cents per Each	23,000.00	23,000.00
141	5	EA.	For Furnishing and Constructing 3 Way Electrical Manhole per Oncor Electric Delivery complete in place, the sum of _____ Twenty Two Thousand Dollars and Zero Cents per Each	22,000.00	110,000.00
142	1	EA.	For Furnishing and Constructing 2 Way Electrical Manhole per Oncor Electric Delivery complete in place, the sum of _____ Twenty One Thousand Dollars and Zero Cents per Each	21,000.00	21,000.00
143	3	EA.	For Constructing Manhole Entrance Pad per Oncor Electric Delivery complete in place, the sum of _____ Five Hundred Dollars and Zero Cents per Each	500.00	1,500.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
144	7	EA.	For Final Adjustment of Electrical Manhole to Finish Grade complete in place, the sum of _____ Two Hundred & _____ Dollars and Zero Cents per Each	200.00	1,400
145	2	EA.	For End and Plugging of Electrical Duct Bank Structure per Oncor Electric Delivery complete in place, the sum of _____ Two Hundred _____ Dollars and Zero Cents per Each	200.00	400.00
146	1	EA.	For Concrete Transformer Pad (Type 2) for Single Phase Transformer per Oncor Electric Delivery complete in place, the sum of _____ Three Thousand _____ Dollars and Zero Cents per Each	3,000.00	3,000.00
147	7	EA.	For Concrete Deepwell Pad for 4 Way 25KV Deadfront Switchgear per Oncor Electric Delivery complete in place, the sum of _____ Four Thousand _____ Dollars and Zero Cents per Each	4,000.00	28,000.00
148	81	L.F.	For Furnishing and Installation of (2) - 4" Electrical Duct by Open Cut complete in place, the sum of _____ One Hundred _____ Dollars and Zero Cents per Linear Foot	100.00	8,100.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
149	140	L.F.	For Furnishing and Installation of (2) - 3" Electrical Duct by Open Cut complete in place, the sum of _____ Sixty Dollars and Zero Cents per Linear Foot	60.00	8,400.00
150	100	L.F.	For Furnishing and Installation of (2) - 3" Electrical Duct by Other Than Open Cut complete in place, the sum of _____ One Hundred Dollars and Zero Cents per Linear Foot	100.00	10,000.00
151	630	S.F.	For Sawcutting, Removal & Replacement of Asphalt Street Pavement Repair complete in place, the sum of _____ Twenty Dollars and Zero Cents per Square Foot	20.00	12,600.00
152	1	L.S.	For Preparing, Furnishing, Installing and Maintaining Trench Safety System for Duct Bank Improvements complete in place, the sum of _____ Six Thousand Dollars and Zero Cents per Lump Sum	6,000.00	6,000.00
153	1	L.S.	For Furnishing all Labor and Materials necessary to Repair the Existing Irrigation System along Westgate Lane (Ref. Note 29 - Sheet 90) complete in place, the sum of _____ Nineteen Thousand Dollars and Zero Cents per Lump Sum	19,000.00	19,000.00

BASE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
154	1	L.S.	For Furnishing all Labor and Materials necessary to Repair the Existing Irrigation System along Vitruvian Way (Ref. Note 29 - Sheet 90) complete in place, the sum of _____ Ten Thousand Dollars and Zero Cents per Lump Sum	10,000.00	10,000.00
155	1	L.S.	For Furnishing all Labor and Materials necessary to Repair the Existing Irrigation System along Marsh Lane (Ref. Note 29 - Sheet 90) complete in place, the sum of _____ Twenty Thousand Dollars and Zero Cents per Lump Sum	20,000.00	20,000.00
TOTAL AMOUNT OF BASE BID (Items 1 Through 155)					3,197,299.00

ADDITIVE ALTERNATE

The following Additive Alternate will be added to the bid at the option of the Town of Addison

ADDITIVE ALTERNATE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
156	1	L.S.	For Mobilization (not to exceed 5% of total bid amount) complete in place, the sum of _____ Twenty Eight Thousand Dollars and Zero Cents per Lump Sum	28,000.00	28,000.00
157	10,092	S.F.	Furnishing & Placing 4-inch thick Reinforced Concrete Sidewalk Enhanced Pvmt complete in place, the sum of _____ Thirteen Dollars and Zero Cents per Square Foot	13.00	131,196.00
158	47	S.F.	For Furnishing & Installing Pavestone ADA Truncated Dome Concrete Paver, Running Bond Pattern, 2-3/8" Thickness, Bellow Brown Color complete in place, the sum of _____ Eleven Dollars and Zero Cents per Square Foot	11.00	517.00
159	103	S.F.	For Furnishing & Installing Pavestone Concrete Street Paver, City Stone 1, 3-1/8" Thickness, Bellows Brown Color complete in place, the sum of _____ Twelve Dollars and Zero Cents per Square Foot	12.00	1,236.00

ADDITIVE ALTERNATE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
160	1,894	S.F.	For Furnishing & Installing Pavestone Concrete Paver - Holland Stone, 2-3/8" Thickness, Bellows Brown Color complete in place, the sum of _____ Four Dollars and Zero Cents per Square Foot	4.00	7,576.00
161	14	EA.	For Furnishing and Installing PEDOC, 30" Height, Single Gang, Hinged Top Pedestal with Integral Base, Color Green, Complete in Place complete in place, the sum of _____ Six Hundred Dollars and Zero Cents per Each	600.00	8,400.00
162	1,528	L.F.	For Furnishing and Installing 3/4" Schedule 40 PVC Conduit complete in place, the sum of _____ Twenty Three Dollars and Zero Cents per Linear Foot	23.00	35,144.00
163	6	EA.	For Furnishing and Installing Ground Box Type "A" complete in place, the sum of _____ One Thousand Dollars and Zero Cents per Each	1,000.00	6000.00
164	4	EA.	For Connecting Proposed Tree Drain Line to Storm Drain Curb Inlet complete in place, the sum of _____ Fifteen Hundred Dollars and Zero Cents per Each	1,500.00	6,000.00

ADDITIVE ALTERNATE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
165	959	L.F.	For Furnishing and Installing 4" PVC (SDR-35) Tree Drain Piping complete in place, the sum of _____ Twenty Five Dollars and Zero Cents per Linear Foot	25.00	23,975.00
166	1.25	Acres	For Furnishing and Installing Hydromulch Seeding (NCTCOG Item 3.10. "Seeding") of Disturbed Areas as shown on Sheets 83-85, and including all other Disturbed Areas of the Site (Ref. Special Provision 74) complete in place, the sum of _____ Thirty Two Hundred Dollars and Zero Cents per Acre	3,200.00	4,000.00
167	4,650	S.F.	For Furnishing and Installing Midiron Bermuda Sod (Pinned on Slopes Greater than 6:1) complete in place, the sum of _____ Zero Dollars and Fifty Cents per Square Foot	0.50	2,325.00
168	3,530	EA.	For Furnishing & Installing Liriope, 1 gallon, Planted 12" O.C. complete in place, the sum of _____ Thirteen Dollars and Zero Cents per Each	13.00	45,890.00
169	3,655	S.F.	For Preparation of Planting Bed Areas including Topsoil, Soil Amendment Materials and Mulch complete in place, the sum of _____ Two Dollars Dollars and Zero Cents per Square Foot	2.00	7,310.00

ADDITIVE ALTERNATE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
170	43	EA.	For Furnishing and Installing "High Rise" Live Oak, 6" Caliper, Single Trunk, (See SP-85) complete in place, the sum of _____ Forty Five Hundred Dollars and Zero Cents per Each	4,500.00	193,500.00
171	1	L.S.	For Implementation of Landscape Maintenance Program for a Period of One (1) Year From Date of Final Acceptance (Ref. Special Provision 118) complete in place, the sum of _____ Fifty Five Thousand Dollars and Zero Cents per Lump Sum	55,000.00	55,000.00
172	1	EA.	For Furnishing and Installing 2" Irrrigation Service Connection including Isolation Valve, Wye Strainer, Double Check Assembly, Master Valve and Flow Meter complete in place, the sum of _____ Twenty Five Hundred Dollars and Zero Cents per Each	2,500.00	2,500.00
173	1	L.S.	For Furnishing and Installing Streetscape Irrigation System along Westgate Lane complete in place, the sum of _____ Twenty Six Thousand Dollars and Zero Cents per Lump Sum	26,000.00	26,000.00
174	1	L.S.	For Furnishing and Installing Streetscape Irrigation System along Vitruvian Way complete in place, the sum of _____ Five Thousand Dollars and Zero Cents per Lump Sum	5,000.00	5,000.00

ADDITIVE ALTERNATE BID

ITEM NO.	APPROX QUANT.	UNIT	DESCRIPTION OF ITEMS BID PRICE WRITTEN IN WORDS	UNIT PRICE	TOTAL PRICE
175	1	L.S.	For Furnishing and Installing Irrigation System for Hydromulch and Sod areas along Westgate Lane complete in place, the sum of _____ Twelve Thousand Dollars and Zero Cents per Lump Sum	12,000.00	12,000.00
176	1	L.S.	For Furnishing and Installing Irrigation System for Hydromulch and Sod areas along Vitruvian Way complete in place, the sum of _____ Twelve Thousand Dollars and Zero Cents per Lump Sum	12,000.00	12,000.00
177	3	EA.	For Connection to Existing Irrigation System Mainline along Vitruvian Way complete in place, the sum of _____ Two Thousand Dollars and Zero Cents per Each	2,000.00	6,000.00
178	1	L.S.	For Furnishing all Labor and Materials necessary to Connect Proposed Irrigation System Wiring to the Existing Irrigation System Wiring and Controller along Vitruvian Way (Ref. Note 31 - Sheet 90) complete in place, the sum of _____ Seven Thousand Dollars and Zero Cents per Lump Sum	7,000.00	7,000.00
AMOUNT OF ADDITIVE ALTERNATE 1					626,569.00

VITRUVIAN PARK
PUBLIC INFRASTRUCTURE – BLOCK 200

BID SCHEDULE SUMMARY

Bid Schedule & Description	Total Amount Materials & Services

TOTAL AMOUNT OF BASE BID (Items 1 through 155) 3,197,299.00

WRITTEN IN WORDS: Three Million One Hundred Ninety Seven Two Hundred Ninety Nine

TOTAL AMOUNT OF ADDITIVE ALTERNATE BID (Items 153 through 178) 626,569.00

WRITTEN IN WORDS: Six Hundred Twenty Six Thousand Five Hundred Sixty Nine

NOTES:

1. All items, labor, materials, equipment, facilities, incidentals, and work required for construction of the project are to be provided and installed by the Contractor as part of the project and payment for the cost of such shall be included in the price bid.
2. Prices must be shown in words and figures for each item listed in this proposal. In the event of discrepancy, the words shall control.
3. It is understood that the Bid Security shall be collected and retained by the Owner as liquidated damages in the event a contract is made by the Owner based on this proposal within ninety (90) calendar days after receiving bids and the undersigned fails to execute the contract.
4. Materials, which are "tax exempt", are those items which are physically incorporated into the facilities constructed for the Town of Addison, as set forth in the Special Provisions. Materials include, but are not limited to purchased items such as water pipe, sanitary sewer pipe, storm drain pipe, etc. Services, which are "not tax exempt", are those items which are used by the Contractor but are not physically incorporated into the Town of Addison's facility and/or items which are consumed by construction, as set forth in the Special Provisions. Services include, but are not limited to, items such as supplies, tools, skill and labor, the purchase, rental or lease of equipment, etc.

Eduardo M. Hernandez
Name of Person Signing Bid

Signature of Person Signing Bid

P.O. Box 640651 Dallas, TX
Address

214 390-2848
Telephone No. Fax No.

46-0730116
Bidder's Tax I.D. No. or Employer No.

If BIDDER is:

AN INDIVIDUAL

By _____ (Seal)
(Individual's Name)

doing business as _____

Business address: _____

_____

_____

Phone No. _____

A PARTNERSHIP

By _____ (Seal)
(Firm Name)

_____
(General Partner)

doing business as _____

Business address: _____

_____

_____

Phone No. _____

A CORPORATION

By Flow-Line Construction, Inc.
(Corporation Name)

Ohio
(State of Incorporation)

By Eduardo M Hernandez
(Name of Person Authorized to Sign)

President
(Title)

(Corporate Seal)

Attest _____
(Secretary)

Business address: P.O. Box 600881

Dallas TX 75360

75

Phone No. 214-390-2648

A JOINT VENTURE

By _____
(Name)

_____
(Address)

By _____
(Name)

_____
(Address)

(Each joint venture must sign. The manner of signing for each individual, partnership and corporation that is a party to the joint venture should be in the manner indicated above.)

SECTION IA

INDEMNIFICATION AGREEMENT

TOWN OF ADDISON
INDEMNIFICATION AGREEMENT

CONTRACTOR'S INDEMNITY OBLIGATION. CONTRACTOR COVENANTS, AGREES TO, AND SHALL **DEFEND** (WITH COUNSEL REASONABLY ACCEPTABLE TO OWNER), **INDEMNIFY, AND HOLD HARMLESS OWNER**, ITS PAST, PRESENT AND FUTURE ELECTED AND APPOINTED OFFICIALS, AND ITS PAST, PRESENT AND FUTURE OFFICERS, EMPLOYEES, REPRESENTATIVES, AND VOLUNTEERS, INDIVIDUALLY OR COLLECTIVELY, IN BOTH THEIR OFFICIAL AND PRIVATE CAPACITIES (COLLECTIVELY, THE "**OWNER PERSONS**" AND EACH BEING AN "**OWNER PERSON**") AND **UDR, INC., VPDEV 1 LLC, VP WEST 1 LLC**, THEIR RESPECTIVE PAST, PRESENT AND FUTURE ELECTED AND APPOINTED OFFICIALS, AND EACH OF THEIR RESPECTIVE PAST, PRESENT AND FUTURE OFFICERS, EMPLOYEES, REPRESENTATIVES, AND VOLUNTEERS, INDIVIDUALLY OR COLLECTIVELY (COLLECTIVELY, "**UDR**" AND TOGETHER WITH THE OWNER PERSONS, THE "**INDEMNIFIED PARTIES**"), FROM AND AGAINST ANY AND ALL CLAIMS, LIABILITIES, JUDGMENTS, LAWSUITS, DEMANDS, HARM, LOSSES, DAMAGES, PROCEEDINGS, SUITS, ACTIONS, CAUSES OF ACTION, LIENS, FEES (INCLUDING ATTORNEY'S FEES), FINES, PENALTIES, EXPENSES, OR COSTS, OF ANY KIND AND NATURE WHATSOEVER, MADE UPON OR INCURRED BY OWNER AND/OR ANY OF THE INDEMNIFIED PARTIES, WHETHER DIRECTLY OR INDIRECTLY, (THE "**CLAIMS**"), THAT ARISE OUT OF, RESULT FROM, OR RELATE TO: (I) THE SERVICES TO BE PROVIDED BY CONTRACTOR PURSUANT TO THIS AGREEMENT, (II) ANY REPRESENTATIONS AND/OR WARRANTIES BY CONTRACTOR UNDER THIS AGREEMENT, (III) ANY PERSONAL INJURIES (INCLUDING BUT NOT LIMITED TO DEATH) TO ANY CONTRACTOR PERSONS (AS HEREINAFTER DEFINED) AND ANY THIRD PERSONS OR PARTIES, AND/OR (IV) ANY ACT OR OMISSION UNDER, IN PERFORMANCE OF, OR IN CONNECTION WITH THIS AGREEMENT BY CONTRACTOR OR BY ANY OF ITS OWNERS, DIRECTORS, OFFICERS, MANAGERS, PARTNERS, EMPLOYEES, AGENTS, CONTRACTORS, SUBCONTRACTORS, INVITEES, PATRONS, QUESTS, CUSTOMERS, LICENSEES, SUB LICENSEES, OR ANY OTHER PERSON OR ENTITY FOR WHOM CONTRACTOR IS LEGALLY RESPONSIBLE, AND THEIR RESPECTIVE OWNERS, DIRECTORS, OFFICERS, MANAGERS, PARTNERS, EMPLOYEES, AGENTS, CONTRACTORS, SUBCONTRACTORS, INVITEES, PATRONS, QUESTS, CUSTOMERS, LICENSEES, SUB LICENSEES (COLLECTIVELY, "**CONTRACTOR PERSONS**"). **SUCH DEFENSE, INDEMNITY AND HOLD HARMLESS SHALL AND DOES INCLUDE CLAIMS ALLEGED OR FOUND TO HAVE BEEN CAUSED IN WHOLE OR IN PART BY THE NEGLIGENCE OR GROSS NEGLIGENCE OF OWNER OR ANY OTHER INDEMNIFIED PARTIES, OR CONDUCT BY OWNER OR ANY OTHER INDEMNIFIED PARTIES THAT WOULD GIVE RISE TO STRICT LIABILITY OF ANY KIND.**

CONTRACTOR SHALL PROMPTLY ADVISE OWNER AND UDR, INC. (AT 1745 SHEA CENTER DRIVE, SUITE 200, HIGHLANDS RANCH, CO 80129, ATTN: LEGAL) IN WRITING OF ANY CLAIM OR DEMAND AGAINST ANY INDEMNIFIED PARTIES RELATED TO OR ARISING OUT OF CONTRACTOR'S ACTIVITIES UNDER THIS AGREEMENT AND SHALL SEE TO THE INVESTIGATION AND DEFENSE WITHOUT RELIEVING CONTRACTOR OF ANY OF ITS OBLIGATIONS HEREUNDER. THIS DEFENSE, INDEMNITY, AND HOLD HARMLESS PROVISION SHALL SURVIVE THE TERMINATION OR EXPIRATION OF THIS AGREEMENT.

THE PROVISIONS IN THE FOREGOING DEFENSE, INDEMNITY AND HOLD HARMLESS ARE SEVERABLE, AND IF ANY PORTION, SENTENCE, PHRASE, CLAUSE OR WORD INCLUDED THEREIN SHALL FOR ANY REASON BE HELD BY A COURT OF COMPETENT JURISDICTION TO BE INVALID, ILLEGAL, VOID, OR UNENFORCEABLE IN ANY RESPECT, SUCH INVALIDITY, ILLEGALITY, VOIDNESS, OR UNENFORCEABILITY SHALL NOT AFFECT ANY OTHER PROVISION HEREOF, AND THIS DEFENSE, INDEMNITY AND HOLD HARMLESS PROVISION SHALL BE

CONSIDERED AS IF SUCH INVALID, ILLEGAL, VOID, OR UNENFORCEABLE PROVISION HAD NEVER BEEN CONTAINED IN THIS AGREEMENT. **IN THAT REGARD, IF THE CAPITALIZED LANGUAGE INCLUDED IN THE FOREGOING INDEMNITY IS SO DETERMINED TO BE VOID OR UNENFORCEABLE, THE PARTIES AGREE THAT:**

(i) THE FOREGOING DEFENSE, INDEMNITY, AND HOLD HARMLESS OBLIGATION OF CONTRACTOR SHALL BE TO THE EXTENT CLAIMS ARE CAUSED BY, ARISE OUT OF, OR RESULT FROM, IN WHOLE OR IN PART, ANY ACT OR OMISSION OF CONTRACTOR OR ANY CONTRACTOR PERSONS; AND

(ii) NOTWITHSTANDING THE PROVISIONS OF THE FOREGOING SUBPARAGRAPH (I), TO THE FULLEST EXTENT PERMITTED BY LAW, CONTRACTOR SHALL INDEMNIFY, HOLD HARMLESS, AND DEFEND OWNER AND THE INDEMNIFIED PARTIES FROM AND AGAINST ALL CLAIMS ARISING OUT OF OR RESULTING FROM BODILY INJURY TO, OR SICKNESS, DISEASE OR DEATH OF, ANY EMPLOYEE, AGENT OR REPRESENTATIVE OF CONTRACTOR OR ANY OF ITS SUBCONTRACTORS, REGARDLESS OF WHETHER SUCH CLAIMS ARE CAUSED, OR ARE ALLEGED TO BE CAUSED, IN WHOLE OR IN PART, BY THE NEGLIGENCE, OR ANY ACT OR OMISSION, OF OWNER OR ANY INDEMNIFIED PARTIES, IT BEING THE EXPRESSED INTENT OF OWNER AND CONTRACTOR THAT IN SUCH EVENT THE CONTRACTOR'S INDEMNITY, HOLD HARMLESS, AND DEFENSE OBLIGATION SHALL AND DOES INCLUDE CLAIMS ALLEGED OR FOUND TO HAVE BEEN CAUSED IN WHOLE OR IN PART BY THE NEGLIGENCE OR GROSS NEGLIGENCE OF OWNER OR ANY OTHER OWNER PERSON, OR CONDUCT BY OWNER OR ANY OTHER INDEMNIFIED PARTIES THAT WOULD GIVE RISE TO STRICT LIABILITY OF ANY KIND. THE INDEMNITY OBLIGATION UNDER THIS SUBPARAGRAPH (II) SHALL NOT BE LIMITED BY ANY LIMITATION ON THE AMOUNT OR TYPE OF DAMAGES, COMPENSATION, OR BENEFITS PAYABLE BY OR FOR CONTRACTOR UNDER WORKERS COMPENSATION ACTS, DISABILITY BENEFIT ACTS, OR OTHER EMPLOYEE BENEFIT ACTS.

I UNDERSTAND THAT THE INDEMNIFICATION PROVISIONS ARE REQUIRED OF ALL TOWN OF ADDISON CONTRACTS. I HAVE READ THE PROVISIONS AND AGREE TO THE TERMS OF THESE PROVISIONS.

Project/Bid #: Vitruvian Park Public Infrastructure 2016-09

Company Name: Flowserve Construction, Inc

Signature: _____ Date: 10/25/16

SECTION CA

CONTRACT AGREEMENT

CONTRACT AGREEMENT

STATE OF TEXAS

COUNTY OF DALLAS

THIS AGREEMENT is made and entered into this _____ day of _____, **2016**, by and between the Town of Addison, of the County of Dallas and State of Texas, acting through its City Manager, thereunto duly authorized so to do, Party of the First Part, hereinafter termed the OWNER, and **Flow-Line Construction, Inc.** of the City of **Dallas**, County of **Dallas**, State of Texas, Party of the Second Part, hereinafter termed CONTRACTOR.

WITNESSETH: That for and in consideration of the payment and agreement hereinafter mentioned, to be made and performed by the OWNER, the said CONTRACTOR hereby agrees with the said OWNER to commence and complete construction of certain improvements as follows:

Town of Addison Public Improvements
to be known as

VITRUVIAN PARK
PUBLIC INFRASTRUCTURE – BLOCK 200

and all extra work in connection therewith, under the terms as stated in the General and Specific Conditions of the AGREEMENT; and at his own proper cost and expense to furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance and other accessories and services necessary to complete the said construction, in accordance with the conditions and prices stated in the Proposal attached hereto and in accordance with the Advertisement for Bids, Instructions to Bidders, General Provisions, Special Provisions, Plans, and other drawings and printed or written explanatory matter thereof, and the Technical Specifications and Addenda thereto, as prepared by the OWNER, each of which has been identified by the endorsement of the CONTRACTOR and the OWNER thereon, together with the CONTRACTOR's written Proposal and the General Provisions, all of which are made a part hereof and collectively evidence and constitute the entire AGREEMENT.

The CONTRACTOR hereby agrees to commence work within ten (10) calendar days after the date of written notice to do so shall have been given to him, to complete the work within One Hundred Eighty Days **(180)** calendar days, after he commences work, subject to such extensions of time as are provided by the General Provisions.

The OWNER agrees to pay the CONTRACTOR $3,823,868.00 in current funds for the performance of the Contract in accordance with the Proposal submitted thereof, subject to additions and deductions, as provided in the General Provisions, and to make payments of account thereof as provided therein.

IN WITNESS WHEREOF, the parties of these presents have executed this AGREEMENT in the year and day first above written.

TOWN OF ADDISON, TEXAS (OWNER)

By: _____
Wes Pierson, City Manager

ATTEST:

By: _____
Laura Bell, City Secretary

(CONTRACTOR)

By: _____

ATTEST:

By: _____

The following to be executed if the CONTRACTOR is a corporation:

I, **Eduardo M. Hernandez** certify that I am the secretary of the corporation named as CONTRACTOR herein; that **Eduardo M. Hernandez**, who signed this Contract on behalf of the CONTRACTOR is the **President** (official title) of said corporation; that said Contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

Signed: _____

Corporate Seal

CERTIFICATE OF INTERESTED PARTIES

FORM 1295

Complete Nos. 1 - 4 and 6 if there are interested parties.
Complete Nos. 1, 2, 3, 5, and 6 if there are no interested parties.

OFFICE USE ONLY
CERTIFICATION OF FILING

Certificate Number:
2016-140029

Date Filed:
11/28/2016

Date Acknowledged:

1 Name of business entity filing form, and the city, state and country of the business entity's place of business.
Flow-Line Construction, Inc.
Dallas, TX United States

2 Name of governmental entity or state agency that is a party to the contract for which the form is being filed.
Town of Addison

3 Provide the identification number used by the governmental entity or state agency to track or identify the contract, and provide a description of the services, goods, or other property to be provided under the contract.
2016-09
Vitruvian Park Public Infrastructure - Block 200

4 Name of Interested Party	City, State, Country (place of business)	Nature of interest (check applicable)	
		Controlling	Intermediary
Hernandez, Eduardo	Dallas, TX United States	X	

5 Check only if there is NO Interested Party. ☐

6 AFFIDAVIT

CARTER EDMOND POE
Notary ID 13069897-6
My Commission Expires
June 13, 2020

I swear, or affirm, under penalty of perjury, that the above disclosure is true and correct.

Signature of authorized agent of contracting business entity

AFFIX NOTARY STAMP / SEAL ABOVE

Sworn to and subscribed before me, by the said Eduardo Hernandez, this the 28 day of November 20 16, to certify which, witness my hand and seal of office.

Carter Edmond Poe	Carter Edmond Poe	Notary Public
Signature of officer administering oath	Printed name of officer administering oath	Title of officer administering oath

SECTION BB

BID BOND

BID BOND

Bidder shall submit a bid bond equal to five percent (5%) of the bid price. Failure to submit a bid bond when required may deem the bid non-responsive. Bid Bonds may be submitted electronically with the executed original provided immediately upon request.

SureTec

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we Flow-Line Construction, Inc. as principal, hereinafter called the "Principal," and **SURETEC INSURANCE COMPANY,** as surety, hereinafter called the "Surety," are held and firmly bound unto Town of Addison as obligee, hereinafter called the Obligee, in the sum of 5 % of the greatest amount bid by Principal for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the principal has submitted a bid for Bid Number 16-184, Infrastructure & Development Services #2016-09

Vitruvian Park Public Infrastructure - Block 200 Proj. No. Bid Number 16-184

NOW, THEREFORE, if the contract be timely awarded to the Principal and the Principal shall within such time as specified in the bid, enter into a contract in writing or, in the event of the failure of the Principal to enter into such Contract, if the Principal shall pay to the Obligee the difference not to exceed the penalty hereof between the amount specified in said bid and such larger amount for which the Obligee may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect.

PROVIDED, HOWEVER, neither Principal nor Surety shall be bound hereunder unless Obligee prior to execution of the final contract shall furnish evidence of financing in a manner and form acceptable to Principal and Surety that financing has been firmly committed to cover the entire cost of the project.

SIGNED, sealed and dated this 20th day of October, 2016.

Flow-Line Construction, Inc.
(Principal)

BY: _____

TITLE: President

SURETEC INSURANCE COMPANY

BY: _____
Kirk Dreyer , Attorney-in-Fact

POA #: 5223695

SureTec Insurance Company
LIMITED POWER OF ATTORNEY

Know All Men by These Presents, That SURETEC INSURANCE COMPANY (the "Company"), a corporation duly organized and existing under the laws of the State of Texas, and having its principal office in Houston, Harris County, Texas, does by these presents make, constitute and appoint

Kirk Dreyer

its true and lawful Attorney-in-fact, with full power and authority hereby conferred in its name, place and stead, to execute, acknowledge and deliver any and all bonds, recognizances, undertakings or other instruments or contracts of suretyship to include waivers to the conditions of contracts and consents of surety for:

Principal: Flow-Line Construction, Inc.
Obligee: Town of Addison
Amount: $Five Percent (5%)of the Greatest Amount Bid

and to bind the Company thereby as fully and to the same extent as if such bond were signed by the President, sealed with the corporate seal of the Company and duly attested by its Secretary, hereby ratifying and confirming all that the said Attorney-in-Fact may do in the premises. Said appointment is made under and by authority of the following resolutions of the Board of Directors of the SureTec Insurance Company:

Be it Resolved, that the President, any Vice-President, any Assistant Vice-President, any Secretary or any Assistant Secretary shall be and is hereby vested with full power and authority to appoint any one or more suitable persons as Attorney(s)-in-Fact to represent and act for and on behalf of the Company subject to the following provisions:

Attorney-in-Fact may be given full power and authority for and in the name of and of behalf of the Company, to execute, acknowledge and deliver, any and all bonds, recognizances, contracts, agreements or indemnity and other conditional or obligatory undertakings and any and all notices and documents canceling or terminating the Company's liability thereunder, and any such instruments so executed by any such Attorney-in-Fact shall be binding upon the Company as if signed by the President and sealed and effected by the Corporate Secretary.

Be it Resolved, that the signature of any authorized officer and seal of the Company heretofore or hereafter affixed to any power of attorney or any certificate relating thereto by facsimile, and any power of attorney or certificate bearing facsimile signature or facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached. *(Adopted at a meeting held on 20th of April, 1999.)*

In Witness Whereof, SURETEC INSURANCE COMPANY has caused these presents to be signed by its President, and its corporate seal to be hereto affixed this 21st day of March, A.D. 2013.

SURETEC INSURANCE COMPANY

By: _____
John Knox Jr., President

State of Texas ss:
County of Harris

On this 21st day of March, A.D. 2013 before me personally came John Knox Jr., to me known, who, being by me duly sworn, did depose and say, that he resides in Houston, Texas, that he is President of SURETEC INSURANCE COMPANY, the company described in and which executed the above instrument; that he knows the seal of said Company; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said Company; and that he signed his name thereto by like order.

JACQUELYN MALDONADO
Notary Public
State of Texas
My Comm. Exp. 5/18/2017

_____
Jacquelyn Maldonado, Notary Public
My commission expires May 18, 2017

I, M. Brent Beaty, Assistant Secretary of SURETEC INSURANCE COMPANY, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney, executed by said Company, which is still in full force and effect; and furthermore, the resolutions of the Board of Directors, set out in the Power of Attorney are in full force and effect.

Given under my hand and the seal of said Company at Houston, Texas this 20th day of October, 2016, A.D.

_____
M. Brent Beaty, Assistant Secretary

Any instrument issued in excess of the penalty stated above is totally void and without any validity.
For verification of the authority of this power you may call (713) 812-0800 any business day between 8:00 am and 5:00 pm CST.

SureTec Insurance Company

THIS BOND RIDER CONTAINS IMPORTANT COVERAGE INFORMATION

Statutory Complaint Notice/Filing of Claims

To obtain information or make a complaint: You may call the Surety's toll free telephone number for information or to make a complaint or file a claim at: 1-866-732-0099. You may also write to the Surety at:

SureTec Insurance Company
9737 Great Hills Trail, Suite 320
Austin, Tx 78759

You may contact the Texas Department of Insurance to obtain information on companies, coverage, rights or complaints at 1-800-252-3439. You may write the Texas Department of Insurance at

PO Box 149104
Austin, TX 78714-9104
Fax#: 512-490-1007
Web: http://www.tdi.state.tx.us
Email: ConsumerProtection@tdi.texas.gov

PREMIUM OR CLAIM DISPUTES: Should you have a dispute concerning your premium or about a claim, you should contact the Surety first. If the dispute is not resolved, you may contact the Texas Department of Insurance.

SECTION PrB

PERFORMANCE BOND

STATUTORY PERFORMANCE BOND PURSUANT TO CHAPTER 2253 OF THE TEXAS GOVERNMENT CODE (PUBLIC WORKS)

(Penalty of this Bond must be 100% of Contract Amount)

KNOW ALL MEN BY THESE PRESENTS, That _____ (hereinafter called the Principal), as Principal, and _____ (hereinafter called the Surety), as Surety are held and firmly bound unto the **Town of Addison** (hereinafter called the Obligee), in the amount of _____ _____ Dollars ($ _____) for the payment whereof the said Principal and Surety bind themselves and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written contract with the Obligee, dated the _____ day of _____ , 2016 to

Town of Addison Public Improvements
to be known as
VITRUVIAN PARK
PUBLIC INFRASTRUCTURE – BLOCK 200

which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal shall faithfully perform the work in accordance with the plans, specifications and contract documents, then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Chapter 2253 of the Texas Government Code and all liabilities on this bond shall be determined in accordance with the provisions, conditions and limitations of said Chapter to the same extent as if it were copied at length herein.

IN WITNESS WHEREOF, the said Principal and Surety have signed this instrument this _____ day of _____ , 2016.

_____
(Principal)

_____ By: _____

_____
(Surety)

_____ By: _____
(Attorney-in-Fact)

SECTION PyB

PAYMENT BOND

STATUTORY PAYMENT BOND PURSUANT TO CHAPTER 2253 OF THE TEXAS GOVERNMENT CODE (PUBLIC WORKS)

(Penalty of this Bond must be 100% of Contract Amount)

KNOW ALL MEN BY THESE PRESENTS, That _____ (hereinafter called the Principal), as Principal, and _____ (hereinafter called the Surety), as Surety are held and firmly bound unto the **Town of Addison** (hereinafter called the Obligee), in the amount of _____ _____ Dollars ($ _____) for the payment whereof the said Principal and Surety bind themselves and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written contract with the Obligee, dated the _____ day of _____ , 2016 to

Town of Addison Public Improvements
to be known as
VITRUVIAN PARK
PUBLIC INFRASTRUCTURE – BLOCK 200

which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal shall pay all claimants supplying labor and material to him or a subcontractor in the prosecution of the work provided for in said contract, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Chapter 2253 of the Texas Government Code and all liabilities on this bond shall be determined in accordance with the provisions, conditions and limitations of said Chapter to the same extent as if it were copied at length herein.

IN WITNESS WHEREOF, the said Principal and Surety have signed this instrument this _____ day of _____ , 2016.

_____
(Principal)

_____ By: _____

_____
(Surety)

_____ By: _____
(Attorney-in-Fact)

SECTION MB

MAINTENANCE BOND

MAINTENANCE BOND

STATE OF TEXAS

COUNTY OF DALLAS

That _____ as principal and _____ , a corporation organized under the laws of _____ and _____ as sureties, said sureties being authorized to do business in the State of Texas, do hereby expressly acknowledge themselves to be held and bound to pay unto the Town of Addison, a municipal corporation, chartered by virtue of a Special Act of Legislature of the State of Texas, as Addison, Dallas County, Texas, the sum of

_____

_____

_____

($_____) for the payment of which sum will and truly to be made unto said Town of Addison and its successors, said principal and sureties do hereby bind themselves, their assigns and successors, jointly and severally.

This obligation is conditioned, however, that whereas said

_____

has this day entered into a written contract with the said Town of Addison to build and construct the

Town of Addison Public Improvements

to be known as

VITRUVIAN PARK

PUBLIC INFRASTRUCTURE – BLOCK 200

which contract and the Plans and Specifications therein mentioned adopted by the Town of Addison, are hereby expressly made a part hereof as though the same were written and embodied herein.

WHEREAS, under the Plans, Specifications and Contract it is provided that the Contractor will maintain and keep in good repair the work herein contracted to be done and performed for a period of two (2) years from the date of startup, and to do all necessary backfilling that may arise on account of sunken conditions in ditches, or otherwise, and to do and perform all necessary work and repair any defective condition growing out of or arising from the improper joining of the same, or on account of any breaking of the same caused by the said Contractor in laying or building the same, or on account of any defect arising in any of said part of said work laid or constructed by the said Contractor, or on account of improper excavation or backfilling; it being understood that the purpose of this section is to cover all defective conditions arising by reason of defective materials, work or labor performed by the said Contractor; and in case the said Contractor shall fail to do, it is agreed that the City may do said work and supply such materials, and charge the same against the said Contractor and sureties on this obligation, and the said Contractor and sureties hereon shall be subject to the liquidated damages mentioned in said contract for each day's failure on its part to comply with the terms of the said provisions of said contract;

NOW THEREFORE, if the said Contractor shall keep and perform its said agreement to maintain said work and keep the same in repair for the said maintenance period of two (2) years, as provided, then these presents shall be null and void and have no further effect; but if default shall be made by the said Contractor in the performance of its contract to so maintain and repair said work, then these presents shall have full force and effect, and said Town of Addison shall have and recover from the Contractor and its sureties damages in the premises, as provided, and it is further understood and agreed that this obligation shall be a continuing one against the principal and sureties hereon and that successive recoveries may be had hereon for successive branches until the full amount shall have been exhausted; and it is further understood that the obligation herein to maintain said work shall continue throughout said maintenance period, and the same shall not be changed, diminished, or in any manner affected from any cause during said time.

IN WITNESS WHEREOF, the said _____ has caused these presents to be executed by _____ and the said _____ has hereunto set his hand this the _____ day of _____, 2016 ___

SURETY

_____

_____

By: _____
Attorney in Fact

By: _____
Surety

_____

_____
Agency and Address

PRINCIPAL

_____

By: _____

ATTEST

_____
Secretary

NOTE: Date of Maintenance Bond must be same as date of City acceptance.

SECTION BP

CONTRACTOR'S AFFIDAVIT OF BILLS PAID

CONTRACTOR'S AFFIDAVIT OF BILLS PAID

STATE OF TEXAS

COUNTY OF DALLAS

Personally, before me the undersigned authority, on this day appeared _____ who, being duly sworn, on oath, says that he is a legal representative of _____
(full name of Contractor as in contract)

and that the contract for the construction of the project, designated as

Town of Addison Public Improvements
to be known as

VITRUVIAN PARK

PUBLIC INFRASTRUCTURE – BLOCK 200

Infrastructure & Development Services #2016-09

has been satisfactorily completed and that all bills for materials, apparatus, fixtures, machinery and labor used in connection with the construction of this project have, to the best of my knowledge and belief, been fully paid.

_____
Signature

_____
Title

Sworn to and subscribed before me this _____day of _____, 2016.

_____
Notary Public in and for

_____ County, Texas

Instructions:

If the contractor is an individual, he shall sign the affidavit. If the contractor is a partnership, any partner may sign the affidavit. If the contractor is a corporation, a person authorized by the by-laws or by the Board of Directors shall sign the affidavit. If the Contractor is a joint-venture of individuals, any of the individuals may sign the affidavit. If the Contractor is a joint-venture of partnerships, or of individuals and partnerships, the affidavit may be signed by the individual or any partner of any partnership. If the contractor is a joint-venture in which a corporation is a party, separate affidavits must be executed in the name of the joint-venture: one by each corporation and one by each individual or partnership. Signatures for corporations should be by a duly authorized officer. If signature is by another, a showing of authority to sign must accompany the affidavit.

SECTION GP

GENERAL PROVISIONS

GENERAL PROVISIONS

The General Provisions of the Contract shall be as stated in the Standard Specifications for Public Works Construction, North Central Texas Council of Governments 2004 Version, under Division 100, "General Provisions," as amended or supplemented and except as modified by the Special Provisions.

SECTION SP

SPECIAL PROVISIONS

SPECIAL PROVISIONS

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SPECIAL PROVISIONS

1. **SCOPE OF WORK**: The work to be performed under the provisions of these Contract Documents shall consist of furnishing all materials, labor, equipment, supplies and appurtenances; providing all construction, plant, equipment and tools; performing all necessary labor and supervision; and the construction complete, including all work appurtenant thereto, the proposed improvements for **Vitruvian Park Public Infrastructure – Block 200.**

2. **GENERAL:** This work shall conform to the requirements of the specifications and the details as shown on the Drawings. These Contract Documents are intended to be complementary. Requirements of any of the Contract Documents are as binding as if called for by all. In the event of conflict between the Drawings and the Specifications, the Contractor will be deemed to have assumed the more expensive way of doing the work unless, before submitting a bid, the Contractor shall have asked for and obtained (by addendum) a written decision as to which method or material is intended.

   In cases of discrepancies, calculated dimensions shall govern over scaled dimensions; special provisions and special specifications shall govern over both general and standard specifications; and quantities shown on the plans shall govern over those shown in the proposal.

3. **EXAMINATION OF SITE**: The Contractor acknowledges that he has investigated and satisfied himself as to the conditions affecting the work, including but not restricted to those bearing upon transportation, disposal, handling and storage of materials, availability of labor, water, electric power, roads and uncertainties of weather, or similar physical conditions at the site, conditions of the ground, the character of equipment and facilities needed preliminary to and during prosecution of the work. The Contractor acknowledges that he has inspected the site of the work and is familiar with the soil conditions to be encountered. Any failure by the Contractor to acquaint himself with the available information will not relieve him from responsibility for estimating properly the difficulty or cost of successfully performing the work. The Town of Addison assumes no responsibility for any conclusions or interpretations made by the Contractor on the basis of the information made available by the Town and the Engineer.

4. **SPECIFICATIONS**: Construction improvements shall be governed by the following published specifications and details (except as modified by these Special Provisions):

   Standard Specifications for Public Works Construction, North Central Texas - North Central Texas Council of Governments (latest edition);

   Town of Addison Standard Specifications and Construction Details;

   Standard Specifications and Details for Manhole and Duct Structure Facilities as established by Oncor Electric Delivery and AT&T.

The Contractor shall keep copies of applicable specifications on the project site at all times. Where reference is made to specifications compiled by other agencies, organizations or departments, such specifications referred to are hereby made a part of the project specifications.

5. **SUBSURFACE INVESTIGATION:** Subsurface exploration to ascertain the nature of soils, including the amount of rock, if any, is the responsibility of any and all prospective bidders. It shall be the responsibility of the bidders to make such subsurface investigations as he deems necessary to determine the nature of the material to be encountered. Some preliminary subsurface exploration has been performed by the Town of Addison and the Engineer, and is provided to the contractor in these documents. This information is provided only as preliminary and all bids shall be based on information obtained by the Contractor. The Town of Addison and the Engineer disclaim any responsibility for the accuracy, true location and extent of the soils information that has been prepared by others. They further disclaim responsibility for interpretation of that data by bidders, as in projecting soil bearing values, rock profiles, soils stability and the presence, level and extent of underground water.

6. **COMPLIANCE WITH LAWS**: The Contractor shall familiarize himself with the nature and extent of the specifications, site conditions, traffic and safety requirements, and shall fully comply with all local, state and federal laws, including all codes, ordinances, rules and regulations applicable to this contract and the work to be done hereunder, which exist or which may be enacted later by governmental bodies having jurisdiction or authority for such enactment. The Contractor shall comply with all federal, state and local laws, rules and regulations of every kind and nature applicable to the performance of its Work hereunder, and **SHALL HOLD THE TOWN OF ADDISON, UDR INC., VPDEV 1 LLC, VP WEST 1 LLC (COLLECTIVELY, THE "UDR PARTIES") AND THE ENGINEER HARMLESS THEREFROM.**

7. **PERMITS, LICENSES AND REGULATIONS:** Permits and licenses for the prosecution of the Work shall be secured and paid for by the Contractor. Wherever the work under this contract requires the obtaining of permits from the Town of Addison or other public authorities, duplicate copies of such permits shall be furnished to the Engineer by the Contractor hereunder before the work covered thereby is started. NO WORK WILL BE ALLOWED TO PROCEED BEFORE SUCH PERMITS ARE OBTAINED.

8. **RIGHTS-OF-WAY AND EASEMENTS**: Rights-of-way and permanent easements, dedicated to the Town of Addison, have been secured for this project and made a part of thereto. The Contractor shall obtain a right-of-way permit from the Town of Addison prior to beginning work. When working within the public rights-of-way and easements, the Contractor shall at all times observe and comply with all Federal and State Laws, and Town of Addison ordinances and regulations which in any way affect the conduct of the work or his operations, and shall observe and comply with all orders, laws, ordinances and regulations which exist or which may be enacted later by bodies having jurisdiction or authority for such enactment. No plea of misunderstanding or ignorance thereof will be considered**. THE CONTRACTOR AND HIS SURETIES SHALL INDEMNIFY AND SAVE HARMLESS THE TOWN OF ADDISON, THE UDR PARTIES, THE ENGINEER AND ALL OF**

THEIR OFFICERS, AGENTS, AND EMPLOYEES AGAINST ANY AND ALL CLAIMS OR LIABILITY ARISING FROM OR BASED ON THE VIOLATION OF ANY SUCH LAW, ORDINANCE, REGULATION, OR ORDER, WHETHER IT BE BY HIMSELF OR HIS EMPLOYEES.

It shall be the responsibility of the Contractor, prior to the initiation of construction on easements through private property, to inform the Town of his intent to begin construction. Before beginning construction in areas of public dedication, the Contractor shall inform the agency having jurisdiction in the area forty-eight (48) hours prior to initiation of the Work. All easements shall be cleaned up after use and restored to their original conditions or better.

9. **RESTRICTED WORK HOURS:** Per the Town of Addison Building Regulations, "It shall be unlawful for a person, firm or corporation to excavate, erect, build, construct, alter, repair or demolish any building or structure which has been issued or which is required to be issued a building permit by the Town of Addison between the hours of 7:00 p.m. and 7:00 a.m. Monday through Friday, and between the hours of 7:00 p.m. and 8:00 a.m. on Saturday and Sunday, if such activity is performed within a residential, apartment, or townhouse zoned area, or within three hundred (300) feet of an occupied residence, except in cases of urgent necessity or in the interest of public safety and convenience, and then only by permit of the City Manager."

10. **COMPLIANCE WITH IMMIGRATION LAWS:** Contractor shall take all steps necessary to ensure that all of the Contractor's employees are authorized to work in the United States as required by the Immigration Reform and Control Act of 1986.

11. **NON-DISCRIMINATION POLICY:** It is the policy of the Town of Addison to afford all people an equal opportunity to bid on any contract being let by the Town. The Town of Addison has a policy that prohibits discrimination against any person because of race, color, sex, or national origin, in the award or performance of any contract. The Town of Addison will require its employees, agents, and contractors to adhere to this policy.

12. **ANTITRUST LAWS:** The Contractor hereby assigns to the Town of Addison any all claims for overcharges associated with this contract which arise under the antitrust laws of the United States 15 U.S.C.A. Sec. 1, et seq. (1973).

13. **ABANDONMENT:** The Town of Addison reserves the right to abandon, without obligation to the Contractor, any part of the project, or the entire project, at any time before the Contractor begins any construction work authorized by the Town of Addison. In case of total abandonment of the project, the contract becomes void. The Town of Addison may abandon portions of the project at any time during the project duration. In case of such partial abandonment, the Contractor shall not be due any payment for lost or unrealized profits on the abandoned portions of the project.

14. **DISCREPANCIES:** If the Contractor, in the course of the Work, finds any discrepancy between the Contract Documents and the physical conditions of the locality, or any errors or omissions in drawings or in the layout as given by survey points and instructions, or if it appears that any Plan, Specification or other Contract Document is or may not be in compliance with any building code or other requirement of any governmental body, he

shall immediately inform the Town of Addison and the Engineer in writing, and the Town of Addison and the Engineer shall promptly verify the same. Any Work done after such discovery, until authorized, will be done at the Contractor's risk.

15. **PREVAILING WAGE RATES:** Wage rates paid on this project shall not be less than specified in the schedule of general prevailing rates of per diem wages as attached hereto.

16. **ADDENDA:** Bidders desiring further information, or interpretation of the Plans and Specifications, must make written request for such information to the Engineer (not later than three (3) working days prior to the date set for the Bid opening). Answers to all such requests will be released on www.bidsync.com in addendum form and all addenda will be bound with and made a part of the Contract Documents. No other explanation or interpretation will be considered official or binding. Should a Bidder find discrepancies in, or omissions from, the Plans, Specifications or Contract Documents, or should he be in doubt as to their meaning, he shall at once notify the Engineer in writing in order that a written addendum may be sent to all Bidders.

17. **PAY ITEMS:** Pay items provided are intended to be all-inclusive of the work required on this project. Work required by the plans or specifications but not provided with a specific pay item shall be considered incidental to other items of work. Final payment to the construction contractor shall not be made until all Work has been finally completed and verified in accordance with the construction contract, plans and specifications and have been finally accepted by the Town of Addison.

18. **INCREASE OR DECREASE IN QUANTITIES:** The quantities shown in the proposal are approximate. Final payment will be based on quantities determined by measurement methods described for each work item.

    When the quantity of work to be done or materials to be furnished under any major pay item or contract is more than 125% of the quantity stated in the contract, whether stated by Town of Addison or by Contractor, then either party to the contract, upon demand, shall be entitled to negotiate for revised consideration on the portion of work above 125% of the quantity stated in the contract.

    When the quantity of the work to be done or materials to be furnished under any major pay item of the contract is less than 75% of the quantity stated in the contract, whether stated by Town of Addison or by Contractor, then either party to the contract, upon demand, shall be entitled to negotiate for revised consideration on the portion of work below 75% of the quantity stated in the contract. This paragraph shall not apply in the event Town of Addison deletes a pay item in its entirety from this contract.

19. **SUBSIDIARY WORK:** Any and all work specifically governed by documentary requirements for the project, such as conditions imposed by the Plans or these Special Provisions, in which no specific item for bid has been provided for in the Proposal, shall be considered as a subsidiary item of work, the cost of which shall be included in the various bid items in the Proposal. Costs of permits, inspection fees, traffic control, construction staking, surface restoration and cleanup are general items of work which fall in the category of subsidiary work.

20. **QUALIFICATION OF BIDS:** The Town of Addison reserves the right to reject any and all Bids, to waive any and all informalities not involving price, time or changes in the Work, and the right to disregard all nonconforming, non-responsive, unbalanced, or conditional Bids. The Town reserves the right to reject the Bid of any Bidder if the Town believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by the Town. Discrepancies in the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolve in favor of the correct sum.

21. **AWARD AND EXECUTION OF CONTRACT:** The Town of Addison reserves the right to withhold final action on the Proposal for a reasonable time, not to exceed forty-five (45) days after the date of opening Proposals, and in no event will an award be made until after investigations have been made as to the responsibility of the proposed awardee. The award of the contract, if an award is made, will be to the lowest and best responsible bidder. The award of the contract shall not become effective until the Town of Addison has notified the Contractor in writing of such award.

Within ten (10) days after the Town of Addison has by appropriate resolution, or otherwise, awarded the contract, the Contractor shall execute and file with the Town of Addison the Contract and such bonds as may be required in the Contract Documents.

22. **EXPLANATION OF CONTRACT TIME:** The term “Original Contract Time" as used in this Provision will mean the number of calendar days established in this Contract (**180 calendar days**) for completion of the work of the Contract from the date the Contract was executed. The term "calendar day" as used in this Article will mean every day shown on the calendar. Calendar days will be consecutively counted from commencement of Contract Time regardless of weather, weekends, holidays, suspensions of Contractor's operations, delays or other events as described herein. The Original Contract Time will not be adjusted for any reason, cause or circumstance whatsoever, regardless of fault, save and except in the instance of a catastrophic event (i.e., war, invasion, riot, declared state of emergency, national strike, or other situations as declared by the Town of Addison). The parties anticipate that delays may be caused by or arise from any number of events during the course of the Contract, including, but not limited to, work performed, disruptions, permitting issues, actions of suppliers, subcontractors or other contractors, actions by third parties, weather, weekends, holidays, or other such events, forces or factors sometimes experienced in roadway construction work. Such delays or events and their potential impacts on performance by the Contractor are specifically contemplated and acknowledged by the parties in entering into this Contract, and shall not extend the Original Contract Time. Further, any and all costs or impacts whatsoever incurred by the Contractor in accelerating the Contractor's work to overcome or absorb such delays or events in an effort to complete the Contract prior to expiration of the Original Contract Time, regardless of whether the Contractor successfully does so or not, shall be the sole responsibility of the Contractor in every instance. In the event the project is altered by work deleted, change orders, supplemental

agreements, utility conflicts, design changes or defects, extra work, right of way issues, or other situations which are not the fault of or a direct result of contractor negligence which may impact the critical path of the project construction schedule, the Town may choose to negotiate the extension or reduction of the Original Contract Time with the Contractor.

In the event of a catastrophic event (i.e., war, invasion, riot, declared state of emergency, national strike, or other situations as declared by the Town of Addison) directly and substantially affecting the Contractor's operations on the Contract, the Contractor and the Town shall agree as to the number of calendar days to extend the Original Contract Time. In the event the Contractor and Town are unable to agree to the number of calendar days to extend the Original Contract Time, the Town shall unilaterally determine the number of calendar days to extend the Original Contract Time reasonably necessary and due solely to such catastrophic event and the Contractor shall have no right whatsoever to contest such determination, save and except that the Contractor establishes that the number of calendar days determined by the Town were arbitrary or without any reasonable basis. The Contractor shall have no rights under the Contract to make any claim arising out of this incentive payment provision except as is expressly set forth in this Provision.

Should the Contractor fail to complete the Contract on or before expiration of the Allowable Contract Time the Town shall deduct from the moneys due the Contractor the sum of **$500 per day** for each calendar day completion exceeds the Allowable Contract Time. The term "Allowable Contract Time" as used in this Article shall mean the Original Contract Time plus adjustments made pursuant to the provisions of this Article. This deduction shall be the disincentive for the Contractor's failing to timely complete the Contract. **This shall be strictly enforced.**

23. **COPIES OF PLANS FURNISHED:** One (1) set of 11" x 17" plans and one (1) electronic version of the plans shall be furnished to the Contractor, at no charge, for construction purposes. Additional copies may be obtained at cost of $150 per set upon request.

24. **PRE-CONSTRUCTION CONFERENCE:** The successful Contractor, Engineer, and Town of Addison shall meet for a preconstruction conference before any of the work begins on this project. At this time, details of sequencing of the work, contact individuals for each party, testing requirements, submittals, and pay requests will be covered. Prior to the meeting, the Contractor shall prepare schedules showing the sequencing and progress of their work and its effect on others. A final composite schedule will be prepared during this conference to allow an orderly sequence of project construction.

25. **MOBILIZATION:** The work specified in this item consists of the preparatory work and operations in mobilizing for beginning work on the project, including, but not limited to, those operations necessary for the movement of personnel, equipment, supplies and incidentals to the project site, and for the establishment of temporary offices, utilities, and other facilities, if necessary, for the construction of proposed improvements. Maximum allowed will be 5% of the total bid.

26. **GENERAL SEQUENCE OF CONSTRUCTION:** Prior to the start of work, the Contractor shall develop a detailed construction and sequence of construction schedule using the critical path method, to be submitted to the Town of Addison for approval, that shall cause minimum interference with traffic along, across and adjacent to the project during construction. If the schedule or sequence becomes unworkable or unsatisfactory as work proceeds, adjustments shall be made subject to Town of Addison approval. During all phases of construction access to all existing residences and businesses must be maintained at all times unless otherwise authorized in writing by the Town of Addison. Erosion control devices must be properly installed and maintained during all stages of construction.

27. **PROJECT REPRESENTATIVE:** The Town of Addison, the Engineer, the Contractor(s), and any applicable public utilities shall designate a single individual within their organization to act as liaison for the project. This individual shall be aware of the day to day activities on the project, have authority to make decisions binding on the party, and serve as single point for coordination of activities with the other team members.

28. **COORDINATION WITH OTHERS:** In the event that other Contractors are doing work in the same area simultaneously with this project, the Contractor shall coordinate his proposed construction with that of the other Contractors. The Town of Addison and/or the Engineer shall mediate any disputes, and the Contractors shall comply with their decisions.

29. **INSURANCE:** Each insurance policy that the Contractor must furnish in accordance with these contract documents shall name the Town of Addison, the UDR Parties and the Engineer as additional insured. Contractor shall include in their bid package, a copy of their certificate of insurance showing compliance to the limits established by the Town of Addison.

1.0 The Contractor shall agree to furnish and maintain continuously during the period of this agreement, any renewals or extension, insurance coverage meeting all of the following requirements:

1.1 Commercial General Liability Insurance at minimum combined single limits of $1,000,000 per occurrence and $2,000,000 general aggregate for Bodily Injury and Property Damage, which coverage shall include Products/Completed Operations, and XCU Hazards. Coverage for product/completed operations must be maintained for at least two (2) years after the construction work has been completed. Coverage must be amended to provide for an each-project aggregate limit of insurance. Contractual Liability must be included.

1.2 Workers Compensation Insurance at statutory limits, including employer's liability coverage at minimum limits of $1,000,000 each occurrence-each accident, $1,000,000 by disease-each occurrence and $1,000,000 by disease aggregate (see attachment on Workers Compensation Commission rules).

1.3 Commercial Automobile Liability Insurance at minimum combined single limits of $1,000,000 per occurrence for bodily injury and property damage, including owned, non-owned, and hired car coverage.

1.4 Umbrella Liability at minimum limits of $1,000,000 each-occurrence $4,000,000 aggregate with respect to primary commercial general liability, automobile liability and employer's liability policies.

1.5 Any Subcontractor(s) hired by the Contractor shall maintain insurance coverage equal to that required by the Contractor. It is the responsibility of the Contractor to assure compliance with this provision. The Town accepts no responsibility arising from the conduct, or lack of conduct, of the Subcontractor.

1.6 A comprehensive general liability insurance form may be used in lieu of a commercial general liability form. In this event, coverage must be written on an occurrence basis, at limits of $1,000,000 each-occurrence, combined single limit and coverage must include a broad form comprehensive general liability endorsement, products/completed operations, XCU hazards and contractual liability.

2.0 With reference to the foregoing insurance requirements, Contractor shall specifically endorse applicable insurance policies as follows:

2.1 The Town and the UDR Parties shall be named as an additional insured with respect to general liability and automobile liability.

2.2 All liability policies shall contain no cross liability exclusions or insured versus insured restrictions.

2.3 A waiver of subrogation in favor of the Town of Addison and the UDR Parties shall be contained in the workers compensation and all liability policies.

2.4 All insurance policies shall be endorsed to require the insured to immediately notify the Town of Addison of any material changes in the insurance coverage.

2.5 All insurance policies shall be endorsed to the effect that the Town will receive at least thirty (30) days notice prior to cancellation or non-renewal of the insurance.

2.6 All certificates shall be mailed to Town of Addison, Purchasing Dept., P.O. Box 9010, Addison, Texas 75001.

2.7 All insurance policies, which name the Town and the UDR Parties as an additional insured, must be endorsed to read as primary coverage regardless of the application of other insurance.

2.8 Required limits may be satisfied by any combination of primary and umbrella liability insurances.

2.9 Contractor may maintain reasonable and customary deductibles, subject to approval by the Town.

3.0 All insurance shall be purchased from an insurance company who meets the following requirements:

3.1 Must be issued by a carrier, which is rated "A-" or better by A.M. Best's Key Rating Guide.

3.2 Licensed and admitted to do business in the State of Texas and is a subscriber to the Texas Guaranty Fund.

4.0 All insurance must be written on forms filed with and approved by the Texas State Board of Insurance. Certificates of insurance shall be prepared and executed by the insurance company or its authorized agent and shall contain provisions representing and warranting the following:

4.1 Set forth all endorsements and insurance coverages according to requirements and instruction contained herein.

4.2 Shall specifically set forth the notice-of-cancellation or termination provisions to the Town.

5.0 Upon request, Contractor shall furnish the Town of Addison with certified copies of all insurance policies.

30. WORKERS' COMPENSATION INSURANCE COVERAGE:

A. Definitions.

Certificate of Coverage ("certificate") - A copy of a certificate of insurance, a certificate of authority to self insure issued by the Texas Workers' Compensation Commission (the "TWCC"), or a coverage agreement (TWCC-81, TWCC-82, TWCC-83 or TWCC-84), showing statutory workers' compensation insurance coverage for the person's or entity's employees providing services on a project, for the duration of the project.

Duration of the Project - includes the time from the beginning of the work on the project until the Contractor's/person's work on the project has been completed and accepted by the governmental entity.

Persons Providing Services on the Project ("subcontractor" in Section 406.096 of the Texas Labor Code) - includes all persons or entities performing all or part of the services the Contractor has undertaken to perform on the project, regardless of whether that person contracted directly with the Contractor and regardless of whether that person has employees. This includes, without limitation, independent contractors, subcontractors, leasing companies, motor carriers, Town-operators, employees of any such entity or employees of any entity which furnishes persons to provide services on the project. "Services" include, without limitation, providing, hauling, or delivering equipment or

materials, or providing labor, transportation, or other service related to a project. "Services" does not include activities unrelated to the project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.

B. The Contractor shall provide coverage, based on property reporting of classification codes and payroll amounts and filing of any coverage agreement, which meets the statutory requirements of Texas Labor Code, 401.011(44) for all employees of the Contractor providing services on the project, for the duration of the project.

C. The Contractor must provide a certificate of coverage to the Town of Addison prior to being awarded the contract.

D. If the coverage period shown on the Contractor's current certificate of coverage ends during the duration of the project, the Contractor must, prior to the end of the coverage period, file a new certificate of coverage with the Town of Addison, showing that the coverage has been extended.

E. The Contractor shall obtain from each person providing services on the project, and provide to the Town of Addison:

(1) a certificate of coverage, prior to that person beginning work on the project, so that the Town of Addison will have on file certificates of coverage showing coverage for all persons providing services on the project; and,

(2) no later than seven days after receipt by the Contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

F. The Contractor shall retain all required certificates of coverage on file for the duration of the project and for one year thereafter.

G. The Contractor shall notify the Town of Addison in writing by certified mail or personal delivery, within 10 days after the Contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project.

H. The Contractor shall post on each project site a notice, in the text, form and manner prescribed by the TWCC, informing all persons providing services on the project that they are required to be covered, and stating how a person may verify current coverage and report failure to provide coverage.

I. The Contractor shall contractually require each person with whom it contracts to provide Services on a project to:

(1) provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Codes 401.011 (44) for all its employees providing services on the project, for the duration of the project;

(2) provide to the Contractor, prior to that person beginning work on the project, a certificate of coverage showing that coverage is being provided for all employees of the person providing services on the project, for the duration of the project;

(3) provide the Contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

(4) obtain from each person with whom it contracts, and provide to the Contractor;

a. a certificate of coverage, prior to the other person beginning work on the project; and,
b. a new certificate of coverage showing extension of the coverage period, prior to the end of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project.

(5) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;

(6) notify the Town of Addison in writing by certified mail or personal delivery, within 10 days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and

(7) contractually require each other person with whom it contracts to perform as required by paragraphs (1) - (7) with the certificate of coverage to be provided to the person for whom they are providing services.

J. By signing this contract or providing or causing to be provided a certificate of coverage, the Contractor is representing to the Town of Addison that all employees of the Contractor who will provide services on the project will be covered by worker's compensation coverage for the duration of the project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the TWCC's Division of Self-Insurance Regulation. Providing false or misleading information may subject the Contractor to administrative penalties, criminal penalties, civil penalties or other civil actions.

K. The Contractor's failure to comply with any of these provisions is a breach of contract by the Contractor which entitles the Town of Addison to declare the contract void if the Contractor does not remedy the breach within ten days after receipt of notice of breach from the Town.

The following is the form of notice of workers' compensation coverage prescribed by the TWCC. Pursuant to Section 110.110 (d) (7), this notice must be printed with a title in at least 30-point bold type, and text in at least 19-point nominal type, and shall be in both English and Spanish and any other language common to the worker population.

REQUIRED WORKERS' COMPENSATION COVERAGE

"The law requires that each person working on this site or providing services related to this construction project must be covered by workers' compensation insurance. This includes persons providing, hauling or delivering equipment or materials, or providing labor or transportation or other service related to the project, regardless of the identity of their employer or status as an employee.

"Call the Texas Workers' Compensation Commission (TWCC) at (512) 440-3789 to receive further information on the legal requirements for coverage, to verify whether your employer has provided the required coverage, or to report an employer's failure to provide coverage."

31. **CLEAN AIR ACT AND CLEAN WATER ACT:** "Contractor is responsible for compliance with all applicable standards, orders, or requirements issued under Section 306 of the Clean Air Act, Section 505 of the Clean Water Act, Executive Order 11738, and Environmental Protection Agency regulations."

32. **RESOLUTION OF DISPUTES:** The parties hereby covenant and agree that in the event of any controversy, dispute, or claim, of whatever nature arising out of, in connection with or in relation to the interpretation, performance or breach of this agreement, including but not limited to any claims based on contract, tort or statute, before filing a lawsuit, the parties agree to submit the matter to Alternative Dispute Resolution pursuant to the laws of the State of Texas. The parties shall select a third party arbitrator or mediator from the current list of neutrals on file with the Alternative Dispute Resolution Administrator of the Dallas County District Courts. All forms of Alternative Dispute Resolution may be used except binding arbitration. The proceedings shall be conducted in accordance with the laws of the State of Texas.

33. **SHOP DRAWINGS:** The Contractor shall provide, review, approve and submit all shop drawings, product data and samples required by the Town of Addison, the Engineer and the Contract Documents in accordance with Item 1.28 of the Standard Specifications for Public Works Construction, North Central Texas Council of Governments. The Contractor shall furnish a minimum of four and a maximum of six copies of shop drawings for review by the Engineer, who will review, approve and forward to the Town of Addison for acceptance. Approved submittals will be returned as follows:

Two (2) – Town of Addison

One (1) – Contractor

One (1) – Icon Consulting Engineers, Inc.

Maximum size of submittals shall be 11 x 17 inch. No fax copies are acceptable. Shop drawings shall include all items to be installed in the project, including:

- Concrete Mix Designs
- Storm Sewer Pipe
- Fire Hydrants
- Trench Safety Plan
- Steel Casing Pipe
- Conduit
- Traffic Control Plan
- Sanitary Sewer Pipe
- Sanitary Sewer Manholes
- Fittings
- Flex Base
- Embedment Materials
- Water Main Pipe
- Valves & Boxes
- Water Vaults
- Gradation
- Asphalt
- Backfill Materials

34. **PROJECT VIDEO:** Prior to the start of construction, Contractor shall video the construction area and property adjacent to construction in the presence of the City Inspector. The format shall be DVD. The video shall be narrated. The Contractor shall furnish the Town of Addison a copy of the video in DVD format prior to commencement of project. This shall be subsidiary to project.

35. **TESTING REQUIREMENTS:** The Town of Addison shall designate and pay an independent testing laboratory to furnish testing for this project. Random testing will be provided by the independent lab as necessary for compliance with the specifications. The Contractor shall coordinate construction with the testing lab and the Town of Addison, and shall provide assistance to the testing labs by providing excavation, access, trench safety, materials for testing and any other work required to insure all testing requirements are met. Work performed to accommodate testing will be a subsidiary item and no extra payment will be authorized. All costs for the field quality control testing shall be paid for by the Town of Addison, except for any and all re-testing, which shall be paid by the Contractor and such cost shall be deducted from monthly pay requests. The Contractor shall be responsible for providing any test required by the specifications. All samples and tests shall be performed in accordance with the Standard Specifications for Public Works Construction, North Central Texas Council of Governments (Latest Edition) as amended or supplemented.

36. **INSPECTION**: The Town of Addison and the Engineer reserve the right to inspect, test, measure or verify the construction work for this project as they deem necessary to ascertain that the Work is being accomplished in accordance with the standards and requirements set forth in the Contract Documents. Notwithstanding such reviews, the Contractor will be held responsible for the finished Work, and any acceptance of the Work by the Town or governmental agencies will not relieve the Contractor from responsibility for the Work. The Town reserves the right to place full-time construction inspectors at the site of the Work. Costs for inspection services will be paid by the Town of Addison. The Contractor shall provide assistance to the Town of Addison and the Engineer by providing excavation, trench safety, or other work necessary to facilitate inspection activities, and shall give sufficient notice well in advance of pending construction activities for scheduling of inspection services.

If the Specifications, the Town's instructions, laws, ordinances, or any public authority require any Work to be specially tested, the Contractor shall give the Town timely notice of its readiness for testing, and if the testing is by an authority other than the Town, of the date fixed for such testing. Tests by the Town shall be made promptly, and where practicable at the source of supply.

37. **ACCESS ROUTES, STAGING AREAS AND STORAGE AREAS:** All haul roads and access routes and the location of job site trailers, staging areas, and storage areas shall be subject to the approval of the Town and the Engineer. The Contractor shall be responsible for maintaining and repairing all roads and other facilities used during construction. Upon completion of the project all existing roads and other disturbed areas shall be left in a condition equal to that at the time the Contractor commences work on this project.

38. **PROPERTY ACCESS:** Access to adjacent properties shall be maintained at all times unless otherwise directed by the Engineer and/or Town of Addison. Contractor shall block no more than one half of a driveway at any time. Contractor shall also maintain sufficient sidewalk access throughout the project limits to the existing apartment buildings during construction operations.

39. **PLANT, PROCEDURE, METHODS AND EQUIPMENT:** The Contractor shall determine the methods to be employed, the procedures to be followed, and equipment to be used on the work under this contract, subject to the requirements of these specifications and approval of the Engineer and Town of Addison. Only adequate and safe procedures, methods and equipment shall be used. The Contractor shall so arrange his work and provide such plant and equipment as is necessary in order to meet the progress requirements of the approved time schedule and to complete the work within the period of time as specified in the Construction Agreement. Only such materials and equipment as are necessary for the construction of the work under this contract shall be placed, stored or allowed to occupy any space at the site of the work.

It is expressly agreed that the acceptance or approval of any order of procedure, methods or equipment submitted or employed by the Contractor shall not in any manner relieve the Contractor of responsibility for the safety, maintenance and repairs of any work, or for the construction maintenance and safety of the work hereunder, or from any liability whatsoever on account of any procedure or method employed by the Contractor. Where the work under this contract requires permits from the Town of Addison, the State of Texas, or other public authorities, duplicate copies of such permits shall be furnished to the Engineer by the Contractor before the work covered thereby is started. NO WORK WILL BE ALLOWED TO PROCEED BEFORE REQUIRED PERMITS ARE OBTAINED AND DISTRIBUTED.

40. **PARKING OF CONSTRUCTION EQUIPMENT:** At night and during all other periods of time when equipment is not being actively used on the construction work, the Contractor shall park the equipment at locations which are approved by the Town of Addison or the Engineer. The Contractor shall provide adequate barricades, markers and lights to protect the Town of Addison, the Engineer, the public and other work. All barricades, lights, and markers must meet the requirements of the Town of Addison, State and Federal regulations.

41. **ZONING REQUIREMENTS:** During the construction of this project, the Contractor shall comply with the present zoning requirements of the Town of Addison in the use of vacant property for storage purposes.

42. **CONSTRUCTION IN PUBLIC ROADS AND PRIVATE DRIVES:** No public road shall be entirely closed overnight. It shall be the responsibility of the Contractor to build and maintain all weather bypasses and detours, if necessary, and to properly light, barricade and mark all bypasses and detours that might be required on and across the roads involved in the work included in this contract. No interference with traffic flow on city streets shall be permitted during the hours of 6:30 a.m. to 9:30 a.m. and 3:30 p.m. to 7:30 p.m., Mondays through Fridays.

The Contractor shall make every effort to complete construction and allow immediate access to adjacent property at driveway entrances located along the roadways. Towns or tenants of improvements where access and/or entrance drives are located shall be notified at least twenty-four (24) hours prior to the time the construction will be started at their driveways or entrances and informed as to the length of time driveways will be closed. Contractor shall at all times maintain at least one point of access into all properties, unless obtaining written permission from property Town to do otherwise with such written permission being provided to the Town's inspector.

The Contractor shall be responsible for all road and entrance reconstruction and repairs and maintenance of same for a period of two years from the date of such reconstruction. In the event the repairs and maintenance are not made immediately to the satisfaction of the Town, and it becomes necessary for the Town to make such repairs, the Contractor shall reimburse the Town for the cost of such repairs.

The Contractor shall, at all times, keep a sufficient width of the roadway clear of dirt and other material to allow the free flow of traffic. The Contractor shall assume any and all responsibility for damage, personal or otherwise, that may be caused by the construction along roads and private drives.

43. **HAULING ON TOWN OF ADDISON STREETS**: The Contractor shall receive approval of his haul routes and type of equipment to be used prior to beginning construction. The Contractor shall be responsible for maintaining the cleanliness of existing paved roadways and shall provide equipment and manpower for that purpose.

44. **EXISTING POWER POLES & GUY WIRES:** The Contractor shall have the responsibility of coordinating with the proper authorities for the bracing, replacing or relocating of all utility poles and guy wires which interfere with the construction of this project prior to beginning his construction operations. The Contractor will also be responsible for all damage to poles, guy wires, etc. that are damaged or destroyed by Contractor's operations.

45. **SAFETY RESTRICTIONS - WORK NEAR HIGH VOLTAGE LINES:** The following procedures shall be followed for work near high voltage lines on this contract:

a. A warning sign not less than five (5) inches by seven (7) inches, painted yellow with black letters that are legible at twelve (12) feet shall be placed inside and outside vehicles such as cranes, derricks, power shovels, drilling rigs, pile driver, hoisting equipment or similar apparatus. The warning sign shall read as follows: "Warning - Unlawful to Operate This Equipment Within Six Feet of High Voltage Lines."

b. Equipment that may be operated within ten (10) feet of high voltage lines shall have an insulating cage guard protecting the boom or arm, except backhoes or dippers, and insulator links on lift hook connections.

c. When necessary to work within six (6) feet of high voltage electric lines, notify the power company who will erect temporary mechanical barriers, de-energize the line, or raise or lower the line. All such work done by the power company shall be at the expense of the Contractor. The Contractor shall maintain an accurate log of all such calls to the power company.

d. The Contractor is required to make arrangements with the power company for the temporary relocation or raising of high voltage lines at the Contractor's sole expense.

e. No person shall work within six (6) feet of high voltage lines without protection measures having been taken as outlined in Paragraph c.

46. **PROTECTION OF EXISTING UTILITIES AND STRUCTURES**: The location and dimensions shown on the plans relative to existing utilities and subsurface structures are based on the best records and/or field information available and are not guaranteed by the Town of Addison or the Engineer to be accurate as to location and depth. It shall be the Contractor's responsibility to verify locations of adjacent and conflicting utilities sufficiently in advance of his activities in order that he may negotiate such restrictive locations with the Town of Addison of the conflicting utility and/or make local adjustments to provide adequate clearances. The Contractor shall take all necessary precautions in order to protect all utilities and services encountered, whether or not they are indicated on the plans. All damage to utilities resulting from Contractor's operations shall be restored at his expense. The Town of Addison and the Engineer assume no responsibility for failure to show any or all of these utilities or structures on the plans, or to show them in their exact locations. It is mutually agreed that such failure shall not be considered sufficient basis for claims for additional compensation for extra work or for increasing the pay quantities in any manner whatsoever, unless the obstruction encountered is such as to necessitate changes in the lines or grades, or requires the building of special work, provisions for which are not made in the plans, in which case, provisions in these specifications for extra work shall apply.

47. **PUBLIC UTILITIES AND OTHER PROPERTY TO BE CHANGED:** In case it is necessary to change or move the property of a public utility, such property shall not be moved or interfered with until authorized by the Town of Addison or the Engineer. The right is reserved for the Owner of public utilities to enter upon the limits of the project for the purpose of making such changes or repairs of their property that may be made

necessary by performance of the Contract. The Contractor shall be responsible for coordination with the Town of Addison and the Engineer, and all utility companies whose utility lines or streets may be affected by the proposed improvements. The Contractor shall observe the following:

a. Prior to any excavation, the Contractor shall determine the locations of all existing water, gas, sewer, electric, telephone, telegraph, television, pipelines and other underground utilities and structures.

b. After commencing work, the Contractor shall use every precaution to avoid interference with existing underground and surface utilities and structures, and protect them from damage.

c. Where the locations of existing underground and surface utilities and structures are indicated, these locations are generally approximate, and all items which may be encountered during the work are not necessarily indicated. The Contractor shall determine the exact locations of all items indicated, and the existence and locations of all items not indicated.

d. The Contractor shall repair or pay for all damage caused by his operations to all existing utility lines, public property, and private property, whether it is below ground or above ground, and he shall settle in total the cost of all damage suites which may arise as a result of his operations.

e. To avoid unnecessary interferences or delays, the Contractor shall coordinate all utility removals, replacements and construction with the appropriate utility company, and then request written authorization from the Town of Addison or the Engineer. The Town of Addison and the Engineer will not be liable for damages due to delay as a result of the above.

48. **MAINTENANCE AND REPAIRS:** The Contractor shall maintain and keep in good repair all work contemplated under these plans, specifications, and drawings which shall include the maintenance and repair of all existing streets, storm sewer crossings, utility crossings, temporary crossings for access to adjacent property, barricades, lights, and danger signals, and all work which is necessary for the well being of the general public. In the event the Contractor fails in his obligations to properly maintain the work, the Town of Addison shall make such repairs as are necessary and the cost of such repairs shall be deducted from payment due the Contractor.

49. **PROTECTION OF WORK:** During performance and up to date of final acceptance, the Contractor shall be under the absolute obligation to protect the finished work against damage, loss or injury. In the event of damage, loss or injury, the Contractor shall promptly replace or repair such work, whichever the Town of Addison shall determine to be preferable. The obligation to deliver finished work in strict accordance with the contract prior to final acceptance shall be absolute and shall not be affected by the Town of Addison's approval of or failure to prohibit means and methods of construction used by the Contractor. All risk of loss or damage to the work shall be borne solely by the

Contractor until final acceptance of all work by the Town of Addison, as evidenced by the Town of Addison's issuance of a certificate of acceptance.

50. **PUBLIC CONVENIENCE AND SAFETY:** In accordance with generally accepted construction practices, the Contractor shall be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work. This requirement shall apply continuously and not be limited to normal working hours.

Materials stored about the work site shall be so placed, and the work shall at all times be so conducted, as to cause no greater obstruction to the traveling public than is considered necessary by the Town of Addison. The materials excavated shall be placed so as not to endanger the work or prevent free access to all fire hydrants, water valves, gas valves, manholes (telephone, telegraph or electrical conduits, and sanitary sewers) and fire alarm or police call boxes in the vicinity.
The Town of Addison reserves the right to remedy any neglect on the part of the Contractor as regards to the public convenience and safety which may come to the Town of Addison's attention, after 24 hours notice in writing to the Contractor, save in cases of emergency, when the Town of Addison shall have the right to remedy any neglect without notice; and, in either case, the cost of such work done by the Town of Addison shall be deducted from the monies due or to become due the Contractor. The Contractor shall notify the Town of Addison and the Engineer when any street is to be closed or obstructed. The Contractor shall provide for emergency vehicle access at all times.

Where the work passes over or through private property, the Town of Addison shall provide such right-of-way. The Contractor shall notify the proper representatives of any public utility, corporation, company or individual, not less than 48 hours in advance of work which might damage or interfere with the operation of their property along or adjacent to the work. The Contractor shall be responsible for all damage or injury to property of any character (except such as may be required by the provisions of the Contract Documents, or caused by agents or employees or the Town of Addison) by reason of any negligent act or omission on the part of the Contractor, his employees, agents or subcontractors, or at any time due to defective work or materials, or due to his failure to reasonably or properly prosecute the work, and said responsibility shall not be released by the fact that the work shall have been completed and accepted.

When and where any such damage or injury is done to public or private property on the part of the Contractor, he shall restore or have restored at his own cost and expense such property to a condition similar or equal to that existing before such damage was done, by repairing, rebuilding or otherwise restoring as he may be directed, or he shall make good such damage or injury in a manner acceptable to the property Town of Addison and the Engineer. In case of failure on the part of the Contractor to restore such property or make good such damage or injury, the Town of Addison may, upon 48 hour written notice under ordinary circumstances, and without notice when a nuisance or hazardous condition results, proceed to repair, rebuild or otherwise restore such property as may be determined necessary, and the cost thereof shall be deducted from any monies due or to become due to the Contractor under this contract; or where sufficient contract funds are

unavailable for this purpose, the Contractor or his surety shall reimburse the Town of Addison for all such costs.

51. **PROTECTION OF PERSONS AND PROPERTY:** The Contractor shall have the responsibility to provide and maintain all warning devices and take all precautionary measures required by law or otherwise necessary to protect persons and property while said persons or property are approaching, leaving or within the work site or any area adjacent to said work site. No separate compensation shall be paid to the Contractor for the installation or maintenance of any warning devices, barricades, lights, signs, or any other precautionary measures required by law or otherwise necessary for the protection of persons or property.

The Contractor shall assume all responsibilities to the general public in connection with the general public's immediate approach to and travel through the work site and the area adjacent to said work site.

Where the work is in or adjacent to any street, alley, sidewalk, public right-of-way or public place, the Contractor shall at his own cost and expense provide such flagmen and watchmen and furnish, erect and maintain such warning devices, barricades, lights, signs, and other precautionary measures for the protection of persons or property as may be prudent or necessary, or as required by law. The Contractor's responsibility for providing and maintaining flagmen, watchmen, warning devices, barricades, signs and lights and other precautionary measures shall not cease until the project shall have been completed and accepted by the Town of Addison, and shall cease when the Town of Addison notifies the Contractor in writing of final project acceptance.

If the Town of Addison discovers that the Contractor has failed to comply with applicable federal or state laws (by failing to furnish the necessary flagmen, warning devices, barricades, lights, signs or other precautionary measures for the protection of persons or property), the Town of Addison may order the Contractor to take such additional precautionary measures as required by law to protect persons and property.
In addition, the Contractor shall be held responsible for all damages to the work and other public or private property due to the failure of warning devices, barricades, signs, lights or other precautionary measures in protecting said property; and whenever evidence is found of such damage, the Town of Addison may order the damaged portion immediately removed and replaced by and at the cost and expanse of the Contractor.

52. **TRAFFIC CONTROL**: It shall be the responsibility of the Contractor to provide traffic control during the construction as required by the State of Texas, the Town of Addison, and in accordance with the following additional requirements:

1. The Contractor shall be required to furnish barricades, flares, flagmen, etc., for the protection of the public, employees and the work.

2. The Contractor shall prosecute his work in such a manner as to create a minimum of interruption to traffic along adjacent roadways.

3. The unit price bid under the appropriate bid item of the proposal shall cover all cost for providing signage, markings, lighting, barricades, flagmen and other devices and personnel required for traffic control during construction of the project.

4. The Contractor shall not remove any regulatory sign, instructional sign, warning sign, street name sign or any other sign or signal which currently exists.

53. BARRICADES, WARNING SIGNS, DETOURS AND SEQUENCE OF WORK:

Throughout the construction operations, streets and intersections will remain open to traffic by constructing the work in stages. All streets, driveways, adjacent business and alleys shall remain open to traffic as far as is practicable.

A. General Construction: The Contractor shall plan his work sequence in a manner that will cause minimum interference with traffic during construction operations. Before beginning work on this project, the Contractor shall submit, for approval by the Town of Addison, a plan of construction operations outlining in detail a sequence of work to be followed; setting out the method of handling traffic on streets, roads and driveways along, across and adjacent to the work. If at any time during the construction, the Contractor's proposed plan of operation for handling traffic does not provide for safe comfortable movement, the Contractor shall immediately change his operations to correct the unsatisfactory conditions.

Ditches across the traffic lanes will be kept covered with a portable traffic-bearing surface at all times unless work in the ditch is in progress. Only one lane of traffic may be closed at a time when work is in progress in a ditch.

B. Safety: The Contractor shall provide, construct and maintain barricades and signs at locations set out in the plans and in the Special Provisions in accordance with the Texas Manual on "Uniform Traffic Control Devices for Streets and Highways". In addition, he shall provide and maintain such other barricades and signs as deemed necessary by the Town or the Engineer, and provide and maintain, between sunset and sunrise, a sufficient number of lights at barricades and points of danger for the protection of vehicular and pedestrian traffic.

Barricades shall be placed in such a manner as not to interfere with the sight distance of drivers entering the street from side streets.

The Contractor shall keep traveled surfaces used in his hauling operation clear and free of dirt or other material.

The Contractor shall provide and maintain qualified flagmen at such points and for such periods of time as may be required to provide for the safety and convenience of public travel and Contractor's personnel.

54. EXCAVATION SAFETY SYSTEMS

The work performed under this section of the specifications consists of providing trench safety systems consisting of shoring, sheeting, trench shield, and/or laid back slopes to meet the trench safety requirements of the Occupational Safety and Health

Administration (O.S.H.A.), as required for this project and specified herein.

A. General: Trench safety systems shall be provided by the Contractor as provided in Subpart P - Excavation, Trenching and Shoring, Part 1926 of the Code of Federal Regulations which describes safety and health regulations as administered by the U.S. Department of Labor Occupational Safety and Health Administration (O.S.H.A.). The standards specified by the O.S.H.A. Regulations shall be the minimum allowed on this project. It shall be the responsibility of the Contractor to design and install adequate trench safety systems for all trenches excavated on this project.

The Contractor shall furnish to the Town for review, prior to beginning construction activity, a Trench Safety Plan for the entire project. The trench safety plan must be prepared and sealed by a Professional Engineer registered in the State of Texas. In addition, all trench safety systems utilized in this project must be designed by a Professional Engineer registered in the State of Texas. The Contractor shall be totally responsible for the safety of all persons involved in the construction of this project.

B. Core Borings: Any core borings and soil data furnished by the Town are for the convenience of the Contractor. The Contractor shall be responsible for any additional soil or geotechnical information required. The Contractor shall be responsible for properly designed trench safety systems to be utilized for any type of subsurface condition found on this project. The furnishing of soil information by the Town of Addison in no way relieves the Contractor of this obligation. If no core borings or soil data are furnished by the Town, it shall be the Contractor's responsibility to obtain whatever geotechnical information required for preparation of trench safety systems.

C. Inspections: In addition to the inspections of the trench and trench safety systems required of the Contractor by the O.S.H.A. Regulations, the Town may further inspect the work. The Town shall have the right to reject any trench safety systems which he finds to be inadequate, and the Contractor shall immediately improve the system to comply with this specification.

D. Measurement and Payment: Measurement and payment of Trench Safety Systems shall be based on the actual linear footage of the pipe installed on the project. The payment shall be full compensation for all planning, engineering, materials, equipment, fabrications, installation, recovery and all incidental work required. All excavation and backfill in addition to that specified elsewhere in these specifications shall be considered subsidiary to this bid item.

55. TRENCH EXCAVATION, BACKFILL AND COMPACTION: Trench excavation, backfill and compaction of storm drain and utility trenches shall be in accordance with Town of Addison Standards and with details shown on the Construction Drawings.

a. Trench Excavation: If the stated maximum trench widths are exceeded, either through accident or otherwise, and if the Engineer determines that the design loadings of the pipe will be exceeded, the Contractor will be required to support the pipe with an improved trench bottom. The expense of such remedial measures shall be entirely the Contractor’s own. All trenching operations shall be confined

to the width of permanent rights-of-way, permanent easements and any temporary construction easements. All excavation shall be in strict compliance with the Trench Safety Systems Special Condition of this document.

b. Trench Backfill: Trenches shall be backfilled above the top of the embedment material with approved backfill material per Town of Addison Standards for the appropriate pipe size, pipe material, depth and soil condition.

c. Compaction: All trenches under proposed or existing pavement shall be compacted to within a range of 95% to 100% Standard Proctor Density. Trenches which lie outside limits of pavement shall be compacted to a minimum of 90% Standard Proctor Density (ASTM D-698).

56. **TRENCH WALLS:** The Contractor shall use shoring or a drag box in those areas where it is required to protect existing improvements. This shall be subsidiary to the linear foot cost of the pipe and not a separate pay item.

57. **PROPERTY LINES AND MONUMENTS:** The Contractor shall protect all property corner markers, and when any such markers or monuments are in danger of being disturbed, they shall be properly referenced and if disturbed shall be reset at expense of the Contractor.

58. **CONSTRUCTION STAKING:** Construction staking will not be provided by the Town of Addison or Engineer. This item will be performed by the Contractor and shall be subsidiary to other bid items. The Contractor will also be responsible for maintaining stakes. If re-staking is required for any reason, it will be the Contractor's responsibility, including associated costs.

All construction staking shall be done under the supervision of a Registered Professional Land Surveyor registered in the State of Texas. The Contractor shall submit copies of cut sheets and field books for the construction of all paving, water, wastewater, and stormwater improvements to the Town of Addison for review prior to construction of the improvements. The information on the cut sheets and field books shall include but not be limited to the following:

a. Heading to include date, contract number, project name, surveying firm, contractor, and construction plan sheet number.

b. Location, description of street/line and street/line name, number, letter, etc. designation.

c. Benchmark Data: Location, description, and elevation.

d. Slope or percent of grade of each curb line or utility line.

e. Stations at 50 foot intervals and including all PC, PT, PI, PVC, PVI, PVT, PRC, grade changes, etc.

f. Offset description including distance to center line or back of curb and direction of offset; left, right, east, west, etc,

g. Cut to subgrade, pavement, top of curb, or flowline of the street or utility being staked.

h. Clarifying remarks such as top of curb, gutter, pavement, subgrade, manhole, cleanout, valve, tee, cross, fire hydrant, wastewater lateral, water service, etc.

i. Cut sheets shall be signed by a Texas Registered Professional Land Surveyor.

59. **VENDOR'S CERTIFICATION**: All materials used in construction shall have a vendor's certified test report. Test reports shall be delivered to the Engineer before permission will be granted for use of the material. All vendors' test reports shall be subject to review by the Engineer, and shall be subject to verification by testing of samples of materials as received for use on the project. In the event additional tests are required, they shall be performed by an approved independent testing laboratory and shall be paid for by the Contractor.

60. **WATER PIPE:** All water mains twelve-inch (12") diameter and smaller shall be ANSI / AWWA C-900 PVC pressure pipe with cast iron o.d. except when a) water pipe penetrates meter vault walls and b) specific water pipe crossings as referenced on water profile sheets, in which cases the water pipe shall be Class 51 Ductile Iron, polyethylene wrapped. Pipe joints shall be rubber ring and integral thickened bell, assembled with a factory supplied lubricant. Water mains shall have a minimum class rating of 150-psi for domestic use and a minimum class rating of 200-psi for fire line applications. Joint material for PVC shall conform to ASTM F471.

61. **WASTEWATER PIPE:** All wastewater main piping shall meet the extra strength requirements of ASTM specification D3034 (SDR-35). Pipe shall have the bell and spigot type joints, consisting of integral wall section with factory installed compression rubber ring gasket, securely locked in bell groove to provide positive seal under all installation conditions. Pipe shall be laid with the bell end on the upstream side.

62. **STORM DRAINAGE PIPE:** All pipe for storm drainage improvements shall be reinforced concrete pipe (RCP), Class III, unless otherwise noted on the plans.

63. **POLYETHYLENE WRAPPING:** All valves, ductile iron pipe, cast iron fittings, and specials, shall be polyethylene wrapped. Payment for the polyethylene wrapping for these components shall be subsidiary to the various items bid for the furnishing and installing pipe complete in place. Polyethylene wrap shall precede blocking.

64. **PIPE CLEANING:** Joints shall be wiped and then inspected for proper installation by the inspectors. Each joint shall be swept daily and kept clean during installation. A temporary night plug shall be installed on all exposed pipe ends during any period of work stoppage.

65. **PLUGS:** Pipe plugs for water lines are included in the Bid Item for Water Fittings. Wastewater line plugs shall be considered incidental and shall not be a separate pay item. Plugs for storm drain lines do have separate pay items established for each size provided and shall be paid for accordingly.

66. **CEMENT STABILIZED BACKFILL:** Two (2) sack cement stabilized backfill shall be provided in wastewater pipe trenches at locations of crossings with water lines where shown on the plans and in conformance with Texas Dept. of Health Rules & Regulations for Public Water Systems. Payment for such work including all labor, tools, equipment and material necessary to complete the work shall be included in the linear foot price bid for Cement Stabilized Backfill.

67. **NON-METALLIC WATER PIPE DETECTION:** Detectable underground utility warning tapes, which can be located from the surface by a pipe detector, shall be installed directly above non-metallic pipe. The detectable tape shall be "Detect Tape" as manufactured by Allen Systems, Inc. or an approved equal, and shall consist of a minimum thickness of 0.35-mil. solid aluminum foil encased in a protective inert plastic jacket that is impervious to all known alkalis, acids, chemical reagents and solvents found in the soil. The minimum overall thickness of the tape shall be 5.5-mils. And the width shall not be less than two-inch with a medium unit weight of 2 ½ pounds per inch x 1,000 feet. The tape shall be color coded and imprinted with the messages as follow:

Type of Utility	Color Coded	Legend
Water	Safety Precaution Blue	CAUTION BURIED WATER LINE BELOW
Sanitary	Safety Green	CAUTION BURIED SEWER LINE BELOW

Installation of detectable tapes shall be per manufacturer's recommendations, and shall be as close to the grade as is practical for optimum protection and detectability. Allow a minimum of 18 inches between the tape and the water line.

Payment for detectable tapes shall be included in the linear foot price bid for applicable pipe(s).

68. **PIPE EMBEDMENT:** All storm drain and utility construction shall be installed with embedment per the details shown on the plans for the appropriate pipe size, pipe material, depth and soil condition unless otherwise directed by the Town of Addison or the Engineer.

69. **REMOVALS, ADJUSTMENTS AND REPLACEMENTS:** Existing pavements, driveways, curbs, gutters, sidewalks, etc., to be removed to facilitate the construction of the improvements shall be broken up and disposed of. Care shall be exercised to leave a neat, uniform edge or joint at the excavation limits or sections removed where only portions are to be removed. The Engineer will designate the limits to be removed. Where pavements, driveways, curbs, gutters, sidewalks, etc., shall be replaced, then said

replacements shall be to the standard of the previously removed portion or better. Re-sawing of damaged edges will be at the Contractor's expense.

Existing structures such as manholes, inlets, cleanouts, valve boxes, etc. which are not the property of a private firm or company, or an individual required to move their own property, shall be adjusted, altered or reset to the required elevation and alignment. New materials and workmanship necessary shall conform to the requirements of these Specifications covering the particular Work. Salvaged materials in good condition may be used in rebuilding such structures, provided the materials are thoroughly cleaned before their use. These items shall be subsidiary to other bid items unless quantified in the proposal as a separate bid item.

All private obstructions which are indicated on the Plans to be moved, will be removed and replaced, or moved to new permanent locations by the Contractor, without additional payment to the Contractor. Any such additional item which the Contractor moves or causes to be moved for his own convenience shall be at his own expense.

70. **SHORT TERM ASPHALTIC PAVEMENT REPAIR:** The unit price bid under the appropriate bid item of the proposal shall cover all cost for providing pavement repair per the short term pavement repair detail provided in the plans.

71. **WATER FOR CONSTRUCTION:** The Contractor shall acquire a meter and make the necessary arrangements with the Town of Addison for securing and transporting all water required for construction, including water required for mixing of concrete, sprinkling, testing or flushing. There will be no separate pay item for connection into the existing water system and quantity of water required for construction purposes. The Town of Addison will furnish water for initial cleaning and sterilization of water lines. All additional water used by the Contractor for compaction or any other purpose incidental to this project may be obtained from existing hydrants along adjacent roadways. Note that the Contractor will be responsible for supplying chlorine gas or chlorinated lime (HTH) for water line sterilization.

72. **EXISTING STOCKPILES OF MATERIAL ON SITE:** NIC

73. **BORROW SOURCE**: If additional sources of earthen material are required for construction of embankment areas to complete the project to the alignment, grades and cross sections indicated on the plans, Contractor will be required to locate, obtain, excavate, deliver and place suitable fill material from an off-site source. Borrow

materials should be compatible with existing on-site materials and shall be tested by the Geotechnical Engineer (employed and paid for by the Town of Addison) for acceptance as an approved source of borrow prior to borrow operations. Item 3.6 - Borrow of the Standard Specifications for Public Works Construction, North Central Texas Council of Governments shall apply for all work performed. If borrow material is required, Contractor will be reimbursed by the Town for the work performed and the material furnished at a negotiated price between the Town and Contractor prior to commencing this work, and included as a change order to the contract.

74. **EXCESS MATERIAL**: Suitable excess material (if any) may be disposed of on this site at locations directed by the Engineer. Topsoil shall be stripped and stockpiled from locations where excess material is to be placed. The Contractor shall scarify the spoil area to a depth of 6 inches and shall place the spoil material in 6-inch lifts, compacted to ninety-five percent (95%) of the maximum density as determined by ASTM D-698 Standard Proctor Test Method at or slightly above optimum moisture content. Rock shall be broken or crushed so that the maximum dimension is 12". No rock larger than 4" will be allowed in the upper 12" of fill. After completion of filling, replace topsoil and smooth grade. Tree stumps and limbs, concrete debris, discarded materials and all unsuitable excess spoil material, including rock measuring larger than 12" in the largest dimension, shall become the property of the contractor and shall be removed from the site and disposed of by the Contractor at his expense. **THE CONTRACTOR SHALL ALSO COMPLY WITH ALL APPLICABLE LAWS GOVERNING SPILLAGE OF DEBRIS WHILE TRANSPORTING TO A DISPOSAL SITE, AND SHALL INDEMNIFY AND SAVE HARMLESS THE TOWN OF ADDISON AND THE ENGINEER FROM ALL SUITS, ACTIONS, OR CLAIMS OF ANY CHARACTER RESULTING FROM HIS ARRANGEMENTS FOR THE DISPOSAL OF SPOIL.**

75. **DURING CONSTRUCTION:** During construction of the work, the Contractor shall, at all times, keep the site of the work and adjacent premises as free from material, debris and rubbish as is practicable and shall remove same from any portion of the site if, in the opinion of the Town of Addison or the Engineer, such material, debris or rubbish constitutes a nuisance or is objectionable. In case of failure on the part of the Contractor to maintain a clean site, the Town of Addison may, upon 24 hour written notice, clean the site, and the cost thereof shall be deducted from any monies due or to become due to the Contractor under his contract; or where sufficient contract funds are unavailable for this purpose, the Contractor or his surety shall reimburse the Town of Addison for all such costs.

76. **CONSTRUCTION TRAFFIC OVER PIPE LINES:** The design of the new pipes and the design of the existing pipe have been taken into account and provided for highway live loads. It is apparent, however, that certain construction vehicles could exceed this highway load condition under shallow bury conditions. It will be the responsibility of the Contractor to protect both the new line and the existing lines from these possibly excessive loads. The Contractor shall not at any time cross the existing or new pipe with a truck delivering new pipe to the site. Any damage to the existing or new pipe will be repaired or replaced by the Contractor to the satisfaction of the Town of Addison.

In locations where it is not permissible to cross the existing or proposed pipes without additional protection, the Contractor may elect to provide additional protection of the

pipes so that more frequent crossings of the pipes are allowed. It still is, however, the responsibility of the Contractor to repair any damage to the existing or proposed lines if the damage results from any phase of his construction operation.

77. **CONTRACTOR'S CONTINUING OBLIGATION**: Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by the Town of Addison, nor the issuance of a certificate of Substantial Completion, nor any payment by Town of Addison to Contractor under the Contract Documents, nor any use or occupancy of the Work or any part thereof by Town of Addison, nor any act of acceptance by Town of Addison nor any failure to do so, nor any review and approval of a Shop Drawing or sample submission, nor the issuance of a notice of acceptability by the Town of Addison pursuant to final payment nor any correction of defective Work by Town of Addison will constitute an acceptance of Work not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents.

78. **WAIVER OF CLAIMS**: The making and acceptance of final payment will constitute:

a. A waiver of all claims by Town of Addison against Contractor, except claims arising from unsettled Liens, from defective Work appearing after final inspection or failure to comply with the Contract Documents or the terms of any special guarantees specified therein; however, it will not constitute a waiver by Town of Addison of any rights in respect of Contractor's continuing obligations under the Contract Documents.

b. A waiver of all claims by Contractor against Town of Addison other than those previously made in writing and still unsettled.

79. **IRRIGATION AND SPRINKLER REPAIR:** The contractor shall maintain all existing irrigation systems within the limits of the project during the duration of the contract. The contractor shall employ a licensed irrigator who is responsible for the repair or replacement of any damage to irrigation lines, valves, controllers, sprinklers, wiring and appurtenances which are damaged during construction. This repair is subsidiary to the various other items bid. The contractor will be responsible for any vegetation that dies as a result of damage to the irrigation system and replace it with equal vegetation at his own cost.

80. **REMOVAL OF DEFECTIVE AND UNAUTHORIZED WORK:** All work which has been rejected or condemned shall be repaired; or if it cannot be repaired satisfactorily, it shall be removed and replaced at the Contractor's expense. Defective materials shall be immediately removed from the work site. Work done without line and grade having been provided; work done beyond the line or not in conformity with the grades shown on the Drawings or as provided, work done without proper inspection; or any extra or unclassified work done without written authority and prior agreement in writing as to prices, shall be at the Contractor's risk and will be considered unauthorized, and at the option of the Town of Addison may not be measured and paid for and may be ordered removed at the Contractor's expense. Upon failure of the Contractor to repair satisfactorily or to remove and replace, if so directed, rejected, unauthorized or

condemned work or materials immediately after receiving notice from the Town of Addison, the Town will, after giving written notice to the Contractor, have the authority to cause defective work to be remedied or removed and replaced, or to cause unauthorized work to be removed and to deduct the cost thereof from any monies due or to become due the Contractor.

81. **DISPOSITION AND DISPOSAL OF MATERIALS**: All materials to be removed from the site including refuse and other debris shall become the property of the Contractor and shall be disposed of outside the limits of the project. Contractor shall also comply with all applicable laws governing the spillage of debris while transporting to a disposal site.

82. **CLEAN-UP FOR FINAL ACCEPTANCE**: The Contractor shall make a final cleanup of all parts of the work before acceptance by the Town of Addison. This cleanup shall include removal of all objectionable rock and other construction materials, and in general preparing the site of the work in an orderly manner and appearance.

83. **TV INSPECTION OF WASTEWATER AND STORM DRAIN SYSTEMS:** Part of the final inspection of the wastewater and storm drain systems on this project shall include a closed circuit TV survey of the completed pipe installation, exclusive of services, and all imperfections in the installed facility revealed by the TV survey of the imperfections in the installed facilities revealed by the TV survey shall be remedied by the Contractor prior to acceptance of the project as complete. All TV survey work, including furnishing of necessary personnel, equipment and material shall be performed by the Contractor.

84. **STREET LIGHTS:** The following, or approved equal, are to be used on this project:

Street Light Type 1:

Bega Fixture 9701 MH – V240 – BEGA OLD SILVER
Pole 1108HR – BEGA OLD SILVER
Lamp MP 100/U/MED

85. **RECYCLING OF ASPHALT AND CONCRETE:** The existing asphalt pavement on Westgate Lane shall be recycled and reinstalled as base material beneath the new concrete road section. The existing pavement can be removed by cold planning where the material is pulverized, sized and mixed with an additive (asphalt emulsion or a recycling agent) to rejuvenate the existing asphalt. Ripping and crushing the asphalt, then combining the recycled asphalt with hot new aggregate and asphalt or a recycling agent at a central plant is also acceptable. If the amount of recycled asphalt material is insufficient to complete the required base course material required on this project, the Contract shall provide new hot mix asphaltic concrete material to complete the project. Recycling of the existing Marsh Lane concrete street pavement, curb and gutter, and sidewalks is also required. The crushed concrete shall be processed to meet TxDOT Item 247 Type A Grade 2. The recycled concrete meeting this requirement will be allowed in lieu of the crushed limestone flex base. If the amount of recycled concrete material in insufficient to complete the required flex base material required on this project, the Contractor shall provide new crushed limestone flex base material to complete the

project. Proof of recycling of all asphalt and concrete from this project will be required from the Contractor.

86. **PHASING OF CONSTRUCTION:** Construction of Vitruvian Park Building 201 will be on-going by others and in conjunction with this Block 200 Public Infrastructure phase of construction. The construction requirements of these projects will entail coordination and proper staging in order to complete both phases of work. It is of the utmost importance that the contractors for each of these projects work together to that end. Public Infrastructure improvements shall be constructed in the following sequence with the intention of keeping Westgate Lane open for construction operations related to Building 201.

Phase 1: Construction of Electric Duct Bank System

Phase 2: Construction of utility work along Vitruvian Way including Sanitary Sewer, Storm Drain and Electric improvements.

Phase 3: Construction of improvements along Marsh Lane and the West Private Drive including Sanitary Sewer, Storm Drain and Electric improvements.

Phase 4: Construction of utility improvements along proposed Westgate Lane.

Phase 5: Paving improvements for Vitruvian Way, West Private Drive and Westgate Lane.

87. **TOPSOIL SPREADING:** Upon completion of street paving and backfilling of curbs, the Contractor shall provide and spread a 6" layer of topsoil on all unpaved areas of the street right-of-way including medians and parkway areas. Topsoiled areas shall be fine graded to provide a smooth surface, free from lumps and clods, and graded to provide proper drainage.

88. **GRASSING:** Grassing within street rights-of-way and easements will be provided under separate contract by others. This Contractor will be responsible for grassing of all other areas disturbed by this Contractors' operations including job staging area, batch plant site, haul roads, etc. Cost of grassing for these areas shall be considered subsidiary to the cost of the project.

89. **SILICONE JOINT SEALANT:** Silicone joint sealant must be used in all instances where joint sealing applies to Portland cement concrete pavement and curbs. Payment for the use of silicone joint sealant throughout this project will in all cases be subsidiary to this contract at no extra payment.

90. **CLAIMS FOR DAMAGES OR INJURY:**

If any person files a claim against the Town of Addison, the UDR Parties or Contractor for personal injury or property damage resulting from, arising out of, or caused by, the operations of the Contractor, or any work within the limits of the project, the Contractor must either submit to the Town of Addison, a duly executed full release within thirty (30) days from the date of written claim, or immediately report the claim to his liability insurance carrier for their action in adjusting the claim. If the Contractor fails to comply with this provision within the stipulated time limit, it will be automatically deemed that the Contractor has appointed the Town as it's irrevocably Attorney-In-Fact authorizing

the Town to report the claim directly with the liability insurance carrier. This provision is in and of itself a Power-of-Attorney from the Contractor to the Town which authorizes the Town to take said action on behalf of the Contractor without the necessity of the execution of any other document. If the Contractor fails to comply with the provisions of this item the Town, at its own discretion, may terminate this contract or take any other actions it deems appropriate. Any payment or portion thereof due the Contractor, whether it is a final payment, progress payment, payment out of retainage or refund payment may be withheld by the Town as is authorized by Item 1.52. Bankruptcy, insolvency or denial of liability by the insurance carrier shall not exonerate the Contractor from liability.

As a result of the additional work created to Town of Addison due to un-responded claims for damages by Contractor to third parties, Contractor shall incur penalties for failure to abide by this Special Provision.

In accordance with the obligations set forth in this Special Provision, Contractor shall respond to the claimant in writing regarding the status of the claim, including whether Contractor disputes the claim, wishes to settle, or will notify its liability insurance carrier regarding the claim. Contractor will be assessed a penalty by the Town of $75.00 per claim, for its failure to respond to the claimant as described above within thirty days of its written notice of claim by the Town.

To ensure Contractor compliance, the Town of Addison shall be notified, by copied correspondence of responses or settlement by Contractor.

91. **MECHANICS AND MATERIALMEN'S LIEN:** The Contractor shall be required to execute a release of mechanics and materialmen's liens upon receipt of payment.

92. **CONTRACTOR'S AFFIDAVIT OF BILLS PAID:** The Contractor shall be required to execute the form provided in Section BP prior to the acceptance of the project.

93. **PROJECT RECORD DOCUMENTS:** The Contractor shall maintain record drawings and legibly annotate shop drawings to record changes made after review. A red felt-tip marking pen shall be used for all recording.

Maintenance of Documents. The Contractor shall maintain at the job site one record copy of the Contract Drawings, Specifications, Shop Drawings, Change Orders, other modification to the Contract, field test records and other documents submitted by Contractor in compliance with specification requirements. These documents shall be maintained at the job site apart from documents used for construction. These documents are not to be used for construction purposes. The documents shall be maintained in clean, legible condition. The documents shall be made available at all times for inspection by the Town.

Recording. Each document shall be labeled Project Record Copy in 2-inch high printed letters. The record documents shall be kept current. No work shall be covered until required information has been recorded.

Contract Drawings. The appropriate drawing shall be legibly marked to record, where applicable:

a. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.

b. Field changes of dimension and detail made during construction process.

c. Changes made by Change Order or Supplemental Agreement.

d. Details not on original Contract Drawings.

e. Manufacturer, trade name, catalog number and supplier of each product and item of equipment actually installed.

f. Changes made by Change Order or Supplemental Agreement.

g. Other matters not originally specified.

Shop Drawing. The Contractor shall maintain the Shop Drawings as record drawings and legibly annotate shop drawings to record changes made after review.

Submittal. At the completion of the project, the Contractor shall deliver record drawings to the Town. The transmittal letter shall be accompanied, in duplicate, with:

a. Date, project title and number.

b. Contractor's name and address.

c. Title and number of each record document.

d. Certification that each document as submitted is complete and accurate.

e. Signature of Contractor or his authorized representative.

94. **ASSIGNMENT:** Contractor shall not assign, delegate or transfer the Contract Documents or any of its rights or obligations thereunder or any interest therein without the prior written consent of the Town of Addison; however, this provision shall not restrict Contractor's hiring of subcontractors to complete the work. The Town of Addison may freely assign, delegate or transfer the Contract Documents, in whole or in part, or any of its rights or obligations thereunder or any interest therein.

95. **TOWN OF ADDISON APPROVAL:** This project is subject to final approval and acceptance by the Town of Addison. Final approval acceptance will not be given until the punch list items are completed to the Town's satisfaction and as-built drawings are given to the Town of Addison.

SECTION PS

PROJECT SIGN

PROJECT SIGN

1. Quantity

Two (2) Project Designation signs will be constructed and installed on the project site as directed by the Owner. It will be the responsibility of the Contractor to maintain the sign in a presentable condition at all times during construction. Maintenance will include painting and repairs as directed by the City Engineer or his appointee. The locations of the signs will be given to the Contractor by the Town of Addison at the Pre-Construction Meeting.

2. Material

Sign shall be constructed of ¾-inch thick smooth finish fir plywood (Grade A-C, exterior or better).

Sign will be securely mounted to 6" x 6" square posts. Nuts and bolts will not protrude from face of sign. Posts will be mounted to a support system that will provide adequate stabilization to ensure the sign will not fall over in heavy winds. Sand bags or other techniques may be necessary to protect sign.

3. Dimensions

Size of sign will be four feet tall and six feet wide. The height and arrangement of the lettering shall be in accordance with the attached detail.

4. Paint

Sign will be one-sided and will have a white background. Text will be black, except for the Addison logo which will be a blue color approved by the City Engineer. The paint will be an outdoor paint and will be maintained throughout the project in proper order. The quality of the paint, painting, and lettering on the signs shall be approved by the City Engineer or his appointee.

5. Payment

Project Signs will be a separate pay item. This will include all labor, equipment, tools, and incidentals necessary to complete and install the work.

The Town of

PLEASE PARDON THE TEMPORARY INCONVENIENCE DURING THIS PROJECT

WATER, WASTEWATER AND STORM DRAIN IMPROVEMENTS

VITRUVIAN PARK

PUBLIC INFRASTRUCTURE – BLOCK 200

CONTRACTOR: _____

ESTIMATED COMPLETION DATE: May 2017

AN ADDISON PROJECT

FOR MORE INFORMATION, PLEASE CALL 972-450-2871

SECTION TS

TECHNICAL SPECIFICATIONS

TS-1	General Requirements for Water Service
TS-2	Water Services
TS-3	Interlocking Concrete Pavers
TS-4	Electrical
TS-5	Detectable Warning Panels

TECHNICAL SPECIFICATIONS

TS -1 - GENERAL REQUIREMENTS FOR WATER SERVICE

All new meters installed in the Town of Addison shall be equipped with electronic encoder registers, programmed to read in thousand gallon increments, and equipped with touch-pad readers.

Connection Fees		
.75"= $50.00	2" = $400.00	6" = $800.00
1" = $100.00	3"=$500.00	8" = $1,000.00
1.5" = $150.00	4" $600.00	10" = $1,200.00

A. Domestic (potable) Use:

1. AU commercial unit applications for domestic use having flow demand's greater than160 g.p.m. shall employ either a compound type meter, or a single-jet meter,? 2", and conforming to Town of Addison Specifications. Hersey MCTW"-~, Neptune Tru/floTM, or Badger Recordall—~ Compound Series are the accepted compound models at this time. Single-jet meters shall be Metron-Farnier Spectrum".

2. All services with flow capabilities 160 g.p.m. shall employ either a nutaling disc, single-$, or turbine meter, sized (2", conforming to Town of Addison Specifications. Disc meters shall be Hersey400 Series llS-~ or 500 Series IISTM, Neptune T-10-~', or Badger RecordalI—~ Disc Series. Single-jet shall be Metron-Farmer Spectrum~, and turbine meters shall be Hersey MVRTh, Neptune HP'", or Badger Recordall" Turbo Series meters.

B. Lawn Irrigation:

1. All irrigation services to 1.5" shall employ a turbine, or single-jet type meter conforming to the above guidelines.

2. Less than 1.5" irrigation meter may be disc meters, but turbine meters are preferred.

3. Connection fees are waived for Irrigation services. Fire Service:

4. Less than or equal to 2" meters shall be a turbine, or single-jet meter as described above.

5. Greater than 2" shall be either a Double Check Detector Assembly, or a Reduced Pressure Zone Detector Assembly. These assemblies shall be approved by the University of Southern California Foundation for Cross Connection Control and Hydraulic Research (USC-FCCCHR), and installed in USC approved orientations and clearances.

6. Connection fees apply; see above.

C. Backflow Prevention Assemblies:

1. All water services (except fire services> 2", see page one) shall have the appropriate BPA installed immediately after the meter. If there are space limitations or other considerations that would preclude installation in that location, the BPA may be installed inside a building or other location. There may be no unprotected taps or tees into the service between the meter and the BPA. The Town of Addison Public Works Department must approve proposed installations prior to actual

installation. All installations shall comply with USC-FCCCHR approved orientations and clearances as found in the most recent edition of the Manual pf Cross-Connection Control.

2. All BPA's must be on the most current List ofAvvroved Backflow Prevention Assemblies as published by the USC-FCCCHR.

3. The appropriate BPA will be determined by the Town of Addison Utility Division, using the most current edition of the Manual 9f Cross-Connection Control as published by USC-FCCCHR as a guideline. Final determination rests with the Town of Addison.

4. The plumber, contractor, and/or owner is responsible for having the BPA tested upon installation and initiation of service by a Tester certified according to TCEQ Rules for the specific type of installation (i.e. Fireline, General) and registered with the Town of Addison Utility Division. Thereafter, it will be the responsibility of the party paying the water bill, to have the BPA tested as determined by the Town of Addison Utility Division based on type of device and Degree of Hazard. Reduced Pressure Zone Assemblies shall be tested at least annually.

5. Stainless steel, brass, or nylon/plastic plugs shall be placed in all test cocks after testing. The use of Teflon tape is required to facilitate removal of plugs for future testing of the device. Plumber's putty or pipe dope is unacceptable for this installation.

6. Double Check Valve Assemblies may be placed in a meter box, but the box must be of sufficient size to provide the proper clearances for accessing, testing, and repair of the device. All above ground device installations shall be protected from freezing with apparatus designed for such use. In no case shall Reduced Pressure Zone Assemblies be permitted in a meter box or vault, or any other below grade installation.

TECHNICAL SPECIFICATIONS

TS-2 - WATER SERVICES

WATER SERVICE (Sizes 3/4" through 2")

Contractors and/or plumbers are responsible for compliance with the following specifications:

A. The Owner/Developer, or their contractor, shall supply water meters that conform to Town specifications as to make and type (See General Requirements for Water Service). All meters shall be equipped with electronic encoder registers for connection to touch-pad readers. Touch-pads shall be mounted at the direction of the Utilities Superintendent.

B. Meters shall be set within the Utility easement and out of vehicular traffic flow and/or parking spaces. Curb stops are to be set 6" to 12" below finished grade.

C. To prevent the inflow of mud or silt into the box, 4" to 6" of washed pea gravel shall be placed under the meter inside the box, allowing for 2" to 6" of open space below the meter. Meter box shall be minimum 1 8"deep. (See Figure SM-I)

D. Meter boxes and openings shall be large enough to allow access to, and operation of, all meter nuts' flanges/bolts, and the curb stop without obstruction.

E. Boxes unavoidably vulnerable to vehicular traffic shall have load-bearing frames and lids designed to withstand the anticipated load. Submittal and City engineer approval is required.

F. An approved Backflow Prevention Assembly shall be installed on all water services after the meter, with a brass or copper nipple between the meter and the Assembly of sufficient length to allow placement in separate boxes. Both meter and assembly shall be accessible for testing and repairs. It shall be the responsibility of the contractor to have the Assembly tested upon installation by a TCEQ certified tester, registered with the Town of Addison Utilities Division, who shall provide the original of the test report to the Town of Addison Utility Division prior to final, continuous connection to the City's water supply.

All companion flanges shall be elliptical brass, and all bolts & nuts shall be grade 316 stainless steel,5/8-11 x 2'/2" hex head.

H. Meters shall be set level in all directions.

I. 2" meters shall have a laying length of 17"; *1.5"* meters shall have a laying length of 13". Meters may be *'~compact,"* but the difference shall be made up with a strainer upstream or a spool with test port downstream from the meter. *5/8"* x 3/4" meters shall have 7 laying length, 3/4" meters shall have 9" laying length, and 1" meters shall have 10 3/4" laying length. (Approval of Utility Inspector)

J. A meter deposit is required for all meters before initiation of service. The party responsible for the water bill will make application and deposit for service to the Town of Addison Utility Billing Department. (Call 450-7081)

3/4" through 2" WATER SERVICE APPROVED MATERIALS and PROCEDURES

1. Double-strap bronze tapping saddle with CC. (AWWA taper) threads: Mueller #BR2B, Ford #202B, or McDonald #3 825. Tap shall be set at 45° of vertical on the mainline. Alternate tapping saddle #2 following.

2. Mueller Servi—Sea1TM style 502,504,506,508; 7" mm. length; Ford Style FS303-CC, or equal (Submittal to Public Works Dept. for approval).

3. Corporation stop with AWWA taper thread (CC) by conductive compression connection: Mueller H-iSO 13 or B25008 (1.5", 2"), Mueller H-15008 or H-25008 (3/4", 1"), Ford FBI000 or Fl000 *(1.5"*, 2", -6-0, -7-6, respectively), (3/4", 1", -3-0, -4-6, respectively), McDonald 4701T or 470 1BT

4. Pipe and meter size shall be determined by owner with approval of Building Inspection or Public Works/Engineering Departments: Piping shall be continuous type "K" copper from corporation to curb stop and completely embedded in sand 6" around the pipe.

5. 90 degree angle curb stop with lock-wing: Mueller H-14277 or B24276 *(1.5* - 2"), Ford KV43-

   666W-G or Fy43-

   777W-G *(1.5'~* 2"), Mueller H-14277 or B24258 (3/4", 1"), Ford KV43-332W-G or KV43-444W-G

   (3/4", 1"), McDonald 4646BT or 4606BT. All companion flanges *(1.5* - 2") shall be brass.

6. Meter boxes shall be of sufficient size to accommodate the curb stop, meter, and all connections. They shall have a cover with reader lid. Concrete boxes shall be stacked to achieve sufficient depth (see "138cC" page one).

7. In-line curb-stops, meter yokes/setters, and/or meter risers may be considered on a case-by-case basis dependent on situation and subject to approval of Utility Inspector and/or Utility Superintendent. NQ gate valves will be allowed on the inlet side of the meter.,

8. The type of Backflow Prevention Assembly required will depend upon the degree of hazard or potential hazard which exists. Contact the Utility Superintendent for further information at 972-661-1693.

9. The tapping saddle and corporation stop must be poly-wrapped (8 mil) and hand backfilled with sand to a depth of 12". Additional backfill may be done by machine, with material free of rocks and clods exceeding three (3) inches in diameter. *CAUTION!!* Inspection must be called for and completed ~ri~ to backfill, or tap must be re-exposed by the contractor so that the Town's representative may complete the inspection.

   Lawn irrigation sprinklers are exempt from connection fees. Connection to an existing service will require a $35.00 connection fee. See Figure SM-i for detail.

WATER SERVICE (Sizes greater than 2")

Contractors, plumbers, and/or developers are responsible for compliance with the following specifications:

A. Provide and install mechanical joint tapping sleeve or Stainless Steel tapping sleeve (such as Mueller H-6 15 or Mueller H-304 respectively). Submittal and approval required if other.

B. Provide and install tapping valve to meet Addison specification GV-95. 1, for resilient wedge gate valve.

C. Provide and install piping. Piping shall conform to ANSI/AWWA C-909-98 for Molecularly Oriented PVC Pressure pipe for water distribution. Pipe shall be 150-psi minimum class rating for domestic use, and 200-psi minimum class rating for fire line applications. Submittal and approval required, if other.

D. Fittings shall be ductile iron mechanical joint style, with restraining glands (such as MegaLug). Fittings shall be wrapped with 8-mu poly prior to backfill.

E. Pipe embedment shall conform to NCTCOG Class "B-2", or "B+" (from Standard Specifications for Public Works Construction, Third Edition, Drawing 3020, 3030). Crushed stone shall be separated from the granular material by a layer of geotextile fabric. Variations allowed with engineer's seal and approval of City Engineer.

F. Service meter or Fire Line DCDA shall be placed in a pre-cast concrete vault with floor and access hatch. Hatch shall be "Bilco"-type, aluminum, spring-assisted, lockable, and sufficiently sized to allow for removal of complete meter or assembly. Vault shall be placed within the public ROW, wherever possible, clear of vehicular traffic flow and/or parking areas.

G. All meters shall be equipped with electronic encoder registers calibrated to read in 1000 U.S. gallon increments, and remote touch-pad reading devices. (See *General Requirements J~Q! Water Service)*

H. The meter and/or backflow assembly and piping shall be supported with manufactured supports designed for such application. (For clarification, reference Specification for *Stanton Pipe Supports* as manufactured by Material Resources Co., Hillsboro, Oregon; 503-693-0727 – Models S89 or S92).

I. There shall be an MJ by flange coupling adapter rn-line on the inlet side of the meter or device.

TECHNICAL SPECIFICATIONS

TS – 3 - INTERLOCKING CONCRETE PAVERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Concrete paver units. [Concrete paver edge units.]

B. Bedding and joint sand.

1.02 RELATED SECTIONS

A. Curbs and Drains.
B. Aggregate Base.
C. Cement Treated Base.
D. Asphalt Treated Base.
E. Pavements, Asphalt and Concrete.
F. Bitumen and Neoprene Setting Bed, Acrylic Fortified Mortar Setting Bed.
G. Geotextiles.

1.03 REFERENCES

A. American Society of Testing and Materials (ASTM):
   1. C 33, Specification for Concrete Aggregates.
   2. C 136, Method for Sieve Analysis for Fine and Coarse Aggregate.
   3. C 140, Sampling and Testing Concrete Masonry Units.
   4. C 144, Standard Specification for Aggregate for Masonry Mortar.
   5. C 936, Specification for Solid Interlocking Concrete Paving Units.
   6. C 979, Specification for Pigments for Integrally Colored Concrete.
   7. D 698, Test Methods for Moisture Density Relations of Soil and Soil Aggregate Mixtures Using a 5.5-lb (2.49 kg) Rammer and 12 in. (305 mm) drop.
   8. D 1557, Test Methods for Moisture Density Relations of Soil and Soil Aggregate Mixtures Using a 10-lb (4.54 kg) Rammer and 18 in. (457 mm) drop.
   9. D 2940, Graded Aggregate Material for Bases or Subbases for Highways or Airports.

1.04 QUALITY ASSURANCE

A. Manufacturer: Company specializing in the manufacture of concrete interlocking pavers for a minimum of three (3) years.
   Preapproved Manufacturers meeting submittal requirements:
   Pavestone Company, L. P. Plaza-Stone I & II San Marcos, TX (512)558-7283

B. Installation shall be by a contractor and crew with at least one (1) year of experience in placing interlocking concrete pavers on projects of similar nature or dollar cost.

C. Installation Contractor shall conform to all local, state/provincial licensing and bonding requirements.

1.05 SUBMITTALS

Since it is important to the specifier that all materials being proposed for this job are truly “equal” please submit the following for approval a minimum of 14 days prior to the bid opening:

A. Submit product drawings and data sheets.

B. Submit concrete paving units to indicate color, shape and surface texture. Reference drawings for color and shapes (4 pc system) shall be Large Rectangle (140 mm x 210 mm), Square (140 mm x 140 mm), Medium Rectangle (140 mm x 105 mm), and Small Rectangle (140 mm x 70 mm).

C. Submit sieve analysis for grading of bedding and joint sand (upon award of contract).

D. Submit test results for paver batch design from an independent testing laboratory to assure compliance of paving unit requirements to ASTM C 936.

E. Indicate layout, pattern, and relationship of paving joints to fixtures and project formed details.

F. Substitutions: Substitutions shall not be considered 14 days prior to bid opening for acceptance.

1.06 MOCK-UPS

A. Install a 7 ft. x 7 ft. (2 m x 2 m) paver area as described in Article 3.02. This area will be used to determine surcharge of the bedding sand layer, joint sizes, lines, laying pattern(s), color(s), and texture of the job. This area shall be the standard from which the work will be judged. Consideration shall be given with regard to differences in age of materials from time of mock-up erection to time of actual product delivery.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver concrete pavers to the site in steel banded, plastic banded, or plastic wrapped cubes capable of transfer by fork lift or clamp lift. Unload pavers at job site in such a manner that no damage occurs to the product.

B. Sand shall be covered with waterproof covering to prevent exposure to rainfall or removal by wind. The covering shall be secured in place.

C. Coordinate delivery and paving schedule to minimize interference with normal use of buildings adjacent to paving.

1.08 ENVIRONMENTAL CONDITIONS

A. Do not install sand or pavers during heavy rain or snowfall.

B. Do not install sand and pavers over frozen base materials.

C. Do not install frozen sand.

PART 2 PRODUCTS

2.01 CONCRETE PAVERS

Concrete pavers must have spacer bars on each unit. These insure a minimum joint width between each unit into which sand is placed. Spacer bars help prevent contact of the edges with adjacent pavers and subsequent spalling.

A. Product shape(s), overall dimensions, color(s), and thickness of the paver(s) shall be:

Shape	Dimensions	Color	Thickness

Reference drawings for style and color of pavers.

All shapes shall have a dappled top with a cobbled surface texture and rounded corners.

B. Pavers shall meet the following requirements set forth in ASTM C 936, Standard Specification for Interlocking Concrete Paving Units:
   1. Average compressive strength of 8,000 psi (55 MPa) with no individual unit under 7,200 psi (50 MPa).
   2. Average absorption of 5% with no unit greater than 7% when tested in accordance with ASTM C 140.
   3. Resistance to 50 freeze-thaw cycles when tested in accordance with ASTM C 67.

C. Pigment in concrete pavers shall conform to ASTM C 979.

D. Material shall be manufactured in individual layers on production pallets.

E. Materials shall be manufactured to produce a solid homogeneous matrix in the produced unit.

2.02 VISUAL INSPECTION

A. All units shall be sound and free of defects that would interfere with the proper placing of unit or impair the strength or permanence of the construction.

B. Minor cracks incidental to the usual methods of manufacture, or chipping resulting from customary methods of handling in shipment and delivery, shall not be deemed grounds for rejection.

2.03 SAMPLING AND TESTING

A. Manufacturer shall provide access to lots ready for delivery to the Owner or his authorized representative for testing in accordance with ASTM 936-82 for sampling of material prior to commencement of paver placement.

B. Manufacturer shall provide a minimum of three (3) years testing backup data showing manufactured products that meet and exceed ASTM 936-82 when tested in compliance with ASTM C-140.

C. Sampling shall be random with a minimum of nine (9) specimens per 20,000 sq. ft. per product shape and size with repeated samples taken every additional 20,000 sq. ft. or a fraction thereof.

D. Test units in accordance with ASTM for compressive strength, absorption and dimensional tolerance. A minimum of three (3) specimens per test required for an average value. Testing of full units is preferred.

2.04 REJECTION

A. In the event the shipment fails to conform to the specified requirements, the manufacturer may sort it, and new test units shall be selected at random by the Owner from the retained lot and tested at the expense of the manufacturer. If the second set of test units fails to conform to the specified requirements, the entire lot shall be rejected.

2.05 EXPENSE OF TESTS

A. The expense of inspection and testing shall be borne by the Owner.

2.06 BEDDING AND JOINT SAND

The type of sand used for bedding is often called sand that is suitable for the manufacturing of concrete. Sands vary regionally. Screenings and stone dust can be unevenly graded and have an excess amount of material passing the No. 200 (75 Hm) sieve. Bedding sands with these characteristics should not be used. Contact paver contractors local to the project and confirm sand(s) successfully used in previous similar applications. Limestone sand should not be used for bedding sand. Mason sands are typically acceptable only for joint sand, provided they meet grading requirements as shown in Table 2 of this section.

A. Bedding and joint sand shall be clean, non-plastic, free from deleterious or foreign matter. The sand shall be natural or manufactured from crushed rock. Limestone screenings or stone dust shall not be used. When concrete pavers are subject to vehicular traffic, the sands shall be ashard as practically available.

B. Grading of sand samples for the bedding course and joints shall be done according to ASTM C 136. The bedding sand shall conform to the grading requirements of ASTM C 33 as shown in Table 1.

Table 1
Grading Requirements for Bedding Sand

ASTM C 33	
Sieve Size	Percent Passing
3/8 in. (9.5 mm)	100
No. 4 (4.75 mm)	95 to 100
No. 8 (2.36 mm)	85 to 100
No. 16 (1.18 mm)	50 to 85
No. 30 (600 µm)	25 to 60
No. 50 (300 µm)	10 to 30
No. 100 (150 µm)	2 to 10

Bedding sand may be used for joint sand. However, extra effort in sweeping and compacting the pavers may be required in order to completely fill the joints. If joint sand other than bedding sand is used, the gradations shown in Table 2 are recommended. Joint sand should never be used for bedding sand.

C. The joint sand shall conform to the grading requirements of ASTM C 144 as shown in Table 2 below:

Table 2
Grading for Joint Sand

ASTM C 144	
Sieve Size	Natural Sand Percent Passing
No. 4 (4.75 mm)	100
No. 8 (2.36 mm)	95 to 100
No. 16 (1.18 mm)	70 to 100
No. 30 (600 µm)	40 to 75
No. 50 (300 µm)	10 to 35
No. 100 (150 µm)	2 to 15
No. 200 (75 µm)	0

PART 3 EXECUTION

3.01 EXAMINATION

For installations on a compacted aggregate base and soil subgrade, the specifier should be aware that the top surface of the pavers may be 1/8 to 1/4 in. (3 to 6 mm) above the final elevations after compaction. This differ -ence in initial and final elevations is to compensate for possible minor settling.

A. Verify that subgrade preparation, compacted density and elevations conform to the specifications. Compaction of the soil subgrade to at least 95% Standard Proctor Density per ASTM D 698 is recommended. Higher density, or compaction to ASTM D 1557 may be necessary for areas subject to continual vehicular traffic. Stabilization of the subgrade and/or base material may be necessary with weak or saturated subgrade soils. The Architect/Engineer should inspect subgrade preparation, elevations, and conduct density tests for conformance to specifications.

B. Verify that geotextiles, if applicable, have been placed according to specifications.

C. Verify that aggregate base materials, thickness, compaction, surface tolerances, and elevations con- -form to the specifications.

Local aggregate base materials typical to those used for flexible pavements or those conforming to ASTM D 2940 are recommended. Compaction to not less than 95% Proctor Density in accordance with ASTM D 698 is recommended for pedestrian areas. Compaction to not less than 98% Modified Proctor Density according to ASTM D 1557 is recommended for vehicular areas. The aggregate base should be spread and compacted in uniform layers not exceeding 6 in. (150 mm) thickness. Recommended base surface tolerance should be plus or minus 3/8 in. (10 mm) over a 10 ft. (3 m) straight edge. The Architect/Engineer should inspect geotextile materials and placement (if applicable), base preparation, surface tolerances, elevations, and conduct density tests for conformance to specifications.

Mechanical tampers are recommended for compaction of soil subgrade and aggregate base around lamp standards, utility structures, building edges, curbs, tree wells and other protrusions. In areas not accessible to roller compaction equipment, compact to specified density with mechanical tampers.

D. Verify location, type, installation and elevations of edge restraints around the perimeter area to be paved.

E. Verify that base is dry, uniform, even, and ready to support sand, pavers, and imposed loads.

F. Beginning of bedding sand and paver installation means acceptance of base and edge restraints.

3.02 INSTALLATION

A. Spread the sand evenly over the base course and screed to a nominal 1 in. (25 mm) thickness, not exceeding 11/2 in. (40 mm) thickness. The screeded sand should not be disturbed. Place sufficient sand to stay ahead of the laid pavers. Do not use the bedding sand to fill depressions in the base surface.

B. Ensure that pavers are free of foreign materials before installation.

C. Lay the pavers in the pattern(s) as shown on the drawings. Maintain straight pattern lines.

D. Joints between the pavers on average shall be between 1/16 in. and 3/16 in. (2 mm to 5 mm) wide.

Some paver shapes require a larger joint. Consult manufacturer for recommended joint widths.

E. Fill gaps at the edges of the paved area with cut pavers or edge units.

Units cut no smaller than one-third of a whole paver are recommended along edges subject to vehicular traffic.

F. Cut pavers to be placed along the edge with a double blade paver splitter or masonry saw.

G. Use a low amplitude, high frequency plate vibrator to vibrate the pavers into the sand. Use Table 3 below to select size of compaction equipment:

Table 3

Paver Thickness	Minimum Centrifugal Compaction Force
60 mm	3000 lbs. (13 kN)
80 mm	5000 lbs. (22 kN)

H. Vibrate the pavers, sweeping dry joint sand into the joints and vibrating until they are full. This will require at least two or three passes with the vibrator. Do not vibrate within 3 ft. (1 m) of the unrestrained edges of the paving units.

I. All work to within 3 ft. (1 m) of the laying face must be left fully compacted with sand-filled joints at the completion of each day.

J. Sweep off excess sand when the job is complete.

K. The final surface elevations shall not deviate more than 3/8 in. (10 mm) under a 10 ft. (3 m) long straightedge.

L. The surface elevation of pavers shall be 1/8 in. to 1/4 in. (3 to 6 mm) above adjacent drainage inlets, concrete collars or channels.

M. The resanding as necessary of paver joints shall be accomplished by contractor for a period of 90 days after completion of work.

3.03 FIELD QUALITY CONTROL

A. After removal of excess sand, check final elevations for conformance to the drawings.

END OF SECTION

TECHNICAL SPECIFICATIONS

TS-4 - ELECTRICAL

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SECTION 16010

GENERAL REQUIREMENTS FOR ELECTRICAL WORK

PART 1 - GENERAL

1.1 DESCRIPTION

A. General Requirements for Electrical Work are intended to be complementary to General Requirements of Construction Contract.

B. Work Included: Provide complete electrical items where shown on Drawings, as specified herein, and as needed for complete and proper installation including, but not necessarily limited to following summary of Work.

1. Electrical work will consist of the installation of pedestrian, roadway/pedestrian and parking lot fixtures and poles. Power for pedestrian and roadway fixtures will be provided by (2) new utility services. Parking lot fixtures will be served from existing Minol parking lot circuits.

1.2 QUALITY ASSURANCE AND APPLICABLE STANDARDS

A. Use adequate numbers of skilled workers thoroughly trained and experienced in necessary crafts and completely familiar with specified requirements and methods needed for proper performance of Work of this Division. Ensure that there is minimum of one licensed journeyman electrician, on job site whenever Division 16 Work is being performed.

B. Without additional cost, provide labor and materials as required to complete Work of this Division in accordance with requirements of Governmental Agencies having jurisdiction, regardless of whether materials and associated labor are called for elsewhere in these Contract Documents.

C. Codes: Electrical work shall conform to requirements and recommendations of latest edition of National Electrical Code and local codes and ordinances. When codes conflict, more stringent requirements shall govern.

D. Materials incorporated into or used in conjunction with Work provided in this Division shall be change-of-century compliant. Century 1900 and 2000 values shall be processed correctly without abnormally ending and date values processed by applicable software shall contain correct century and include at minimum: date data century recognition, calculations that accommodate same century and multiple century formulas and date values, and date interface values that reflect century. Materials and equipment shall not contain timers, clocks, counters, or other limiting designs or routines that cause items to be erased, inoperable, or otherwise incapable of being used in full manner for which designed after occurrence or lapse of triggering event. Materials and equipment shall be warranted to not cause other materials, equipment, or systems to become erased, contaminated, inoperable, or otherwise incapable of being used in intended manner.

E. Standards: Specifications and Standards of following organizations are by reference made part of these Specifications. Electrical Work, unless otherwise indicated, shall comply with requirements and recommendations wherever applicable:
1. Association of Edison Illuminating Companies (AEIC)
2. American National Standards Institute (ANSI)

3. American Society for Testing and Materials (ASTM)
4. Certified Ballast Manufacturers (CBM)
5. Electrical Testing Laboratories (ETL)
6. Institute of Electrical and Electronic Engineers (IEEE)
7. Insulated Power Cable Engineers Association (IPCEA)
8. National Bureau of Standards (NBS)
9. National Electrical Contractors Association (NECA)
10. National Electrical Manufacturer's Association (NEMA)
11. National Fire Protection Association (NFPA)
12. Radio-Television Manufacturer's Association (RTMA)
13. Reflector Luminaire Manufacturers (RLM)
14. Underwriters' Laboratories, Inc. (UL)

1.3 REQUIREMENTS OF REGULATORY AGENCIES

A. Requirements and recommendations of latest editions of Occupational Safety and Health Act (OSHA), Americans with Disabilities Act (ADA), and Texas Accessibility Standards (TAS) are by reference made part of these Specifications. Work shall comply with requirements and recommendations wherever applicable.

1.4 RELATED WORK SPECIFIED ELSEWHERE

A. Other Divisions of Contract Documents. Refer to each Division's Specifications and Drawings for requirements.

1.5 DEFINITIONS

A. Terms *furnish*, *install*, and *provide* are used interchangeably and shall mean to furnish and install, complete and ready for intended use.

1.6 SUBMITTALS

A. Comply with pertinent provisions of Division 1.

B. Submittals required of materials and equipment include following:

1. Materials list of items proposed to be provided under Division 16.

2. Manufacturer's specifications and other data needed to prove compliance with specified requirements. Term "Compliance" is understood to mean that Contractor certifies that submitted equipment meets or exceeds Contract Document requirements. Items that do not clearly meet this definition should be identified and explained as required in following paragraph.

3. Explain with enough detail so that it can easily be determined that item complies with functional intent. List disadvantages or advantages of proposed item versus specified item. Submit technical data sheets and/or pictures and diagrams to support and clarify. Organize in clear and concise format. Substitutions must be approved in writing by Engineer. Engineer's decision shall be final.

4. Allow minimum of 10 working days for review of each submittal and re-submittal.

5. Items of equipment that are not accepted in writing as approved equal shall be replaced or revised to comply with Contract Documents at Contractor's expense.

6. The manufacturer's recommended installation procedures shall become basis for accepting or rejecting actual installation procedures used on Work.

7. Shop drawings shall consist of detailed drawings with dimensions, schedules, weights, capacities, installation details and pertinent information needed to describe the material or equipment.

C. Submittals required of materials and equipment under this Division include following listed items not supplied by Owner. These submittal requirements are intended to be complimentary to requirements that may be listed in individual sections. In event of conflict, more stringent requirement shall apply.

1. Conductors and Cables

   a. Submit product data for each specified product.

   b. Submit tabular list of wire and wiring systems that will be increased in capacity or size to comply with Section 16120 and/or similar requirements shown on Drawings. List shall include size shown on Drawings, proposed increase to comply with Section 16120, and proposed installed length.

2. Raceways and Boxes

   a. Submit product data for surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.

   b. Submit Shop Drawings including layout drawings showing components and wiring for nonstandard boxes, enclosures, and cabinets.

3. Grounding

   a. Submit product data for grounding rods, connectors and connection materials, and grounding fittings.

4. Exterior Lighting

   a. Submit product data describing fixtures, lamps, ballasts, poles, and accessories. Arrange product data for fixtures in order of fixture designation. Include data on features, poles, accessories, and finishes.

   b. Submit outline drawings indicating dimensions and principal features of fixtures and poles.

   c. Submit electrical ratings and photometric data including certified results of laboratory tests for fixtures and lamps.

   d. Submit wind resistance calculations, certified by registered professional engineer.

   e. Submit Shop Drawings detailing nonstandard fixtures and poles and indicating dimensions, weights, and methods of field assembly, components, and accessories.

   f. Submit wiring diagrams detailing wiring for control system showing both factory-installed and field-installed wiring for each specific system, which differentiates between factory-installed and field-installed wiring.

g. Submit anchor-bolt templates, keyed to specific poles and certified by manufacturer.

h. Submit maintenance data for products to include in operation and maintenance manual specified in this Section.

i. Submit lamp data for each lamp type.

j. Submit ballast data.

5. Record Documents. Refer to "Project Record Documents" Paragraph of this Section.

6. Operation and Maintenance Data. Refer to "Operation and Maintenance Data" paragraph of this Section.

D. Resubmittals of rejected submittals shall be limited to one (1) in number. Costs for processing subsequent resubmittals in excess of the first resubmittal, resulting from the Contractor's disregard of Engineer's primary submittal rejection comments, shall be borne by the Contractor. Costs shall be based on Engineer's hourly rates as published in their current professional fee schedules and shall also include reimbursable costs for delivery, mailing, and photocopies at direct cost fifteen percent (15%).

1.7 SUBSTITUTIONS

A. The Contract Documents list manufacturers' names and catalog numbers followed by phrase "or equivalent" are to establish a standard of quality and utility for the specified items and to provide a dimensional reference to the scaled drawings.

B. Submittals for "equivalent" items shall include the following data, which is not necessarily required for specified items which list the manufacturer and catalog number:

1. Performance characteristics.

2. Materials.

3. Finish.

4. Certification of conformance with specified codes and standards.

5. Manufacturer's specifications and other data needed to prove compliance with specified requirements. Term "compliance" is understood to mean that the submitted equipment will meet or exceed the Contract Document requirements. Items that do not clearly meet this definition shall be identified and explained as required in following Paragraph.

6. Identify difference between specified equipment and proposed substituted equipment. Explain with enough detail so that /Owner can easily determine that item complies with functional intent. List disadvantages or advantages of proposed item versus specified item. Submit technical data sheets and/or pictures and diagrams to support and clarify. Organize in clear and concise format. Engineer shall approve substitutions in writing. Engineer's decision shall be final.

C. Submittals of "equivalent" components or systems may be rejected if:

1. Material or equipment would necessitate alteration of mechanical, electrical, architectural, or structural design.

2. Dimensions vary from specified material or equipment so that accessibility or clearances are impaired or Work of other trades is adversely affected.

D. Proposed substitutions for materials or equipment must be submitted 10 days prior to final bid date for consideration as approved equals. Otherwise, substitutions will not be permitted. Only prime bidders shall make proposals for substitutions.

E. No substitution shall be made unless authorized in writing by Architect/Engineer. Should substitution be accepted, and should substitute material prove defective or otherwise unsatisfactory for service intended, and within guarantee period, replace this material or equipment with material or equipment specified, to satisfaction of Engineer and at no cost to Owner.

1.8 ORDINANCES, PERMITS, METERS, UTILITIES AND ROYALTIES

A. Purchase all necessary permits and licenses necessary for completion of the Work. Pay all lawful fees required and necessary pursuant in obtaining said permits and licenses. Required certificates of approvals and inspections by local governing and regulating authorities.

B. Pay all fees required for connection of utility power and telephone services required for the Work.

C. Pay royalty payments or fees required for use of patented equipment or systems. Defend lawsuits or claims for infringement of patent rights and hold Owner and/or Engineer harmless from loss as result of said suits or claims.

1.9 COMPATIBILITY OF EQUIPMENT

A. Assume full responsibility for satisfactory operation of component parts of electrical systems. Assure compatibility of equipment and performance of integrated systems in accordance with requirements of the Construction Documents. Notify the Engineer before submitting a bid should Specifications or Drawings make acceptance of responsibility impossible, prohibitive, or restrictive. The bid shall be accompanied by a written statement listing any objections or exceptions to the applicable specification section and/or drawing.

1.10 UTILITIES AND TEMPORARY POWER

A. Verify location and capacity of all existing utility services before starting Work. The locations and sizes of electrical lines are shown in accordance with data secured from Owner's survey. The data shown is offered as estimating guide without guarantee of accuracy.

1.11 EXCAVATION AND BACKFILLING

A. Perform excavation and backfilling in strict accordance with Section 02161, including trench safety requirements.

B. Perform excavation and backfilling associated with Work in strict accordance with provisions of these Specifications, including trench safety requirements.

C. Perform excavation and backfilling necessary for installation of Work. This shall include shoring and pumping in ditches to keep them in dry condition until Work has been installed. Shoring required to protect excavation and safeguard employees shall be properly performed.

D. Excavations shall be made to proper depth, with allowances made for floor slabs, forms, beams, etc. Ground under conduits shall be well compacted before conduits are installed.

E. Exterior conduits shall be installed with minimum of 36 inches of cover below finished grade, unless otherwise indicated or required by local ordinances. Exterior conduit shall be installed with minimum of 12 inches of cover below finished paving grade, unless otherwise indicated or required by local ordinances.

F. Backfilling shall be made with selected soil, free from rocks and debris and shall be pneumatically tamped with 6-inch layers to secure field density ratio of 90 percent as defined by ASTM Designation D698-57T (Proctor Soil Compaction Test).

G. Excavated materials not suitable and not used in backfill shall be removed from site.

H. Field verify locations of underground utilities. If existing utilities are damaged, they shall be repaired at no cost to Owner.

I. Restore all lime stabilization and replace concrete, curbs, paving and other surface improvements cut during excavation to original condition.

1.12 FLASHINGS, SLEEVES, AND INSERTS

A. Furnish and install flashings where conduits pass through outside walls. Flashings shall be properly formed to fit around conduit and shall be caulked, with 790 Silicone Building Sealant by Dow Corning Corporation, so as to make watertight seal between conduit and building.

B. Unless otherwise specified, install sleeves for each conduit where it may pass through interior walls or floors. Galvanized 22 gage sheet iron sleeves shall be used. Finish flush with each finished wall surface. In pipe chases, the sleeve shall extend 1-1/2 inches above floor slab and shall be watertight.

C. Raceways that pass through concrete beams or walls and masonry exterior walls shall be provided with galvanized wrought iron pipe sleeves, unless shown otherwise on drawings. Inside diameter of these sleeves shall be at least 1/2 inch greater than outside diameters of service pipes. After pipes are installed in these sleeves, fill annular space between pipes and sleeves with 790 Silicone Building Sealant by Dow Corning Corporation. Completed installation shall be watertight.

D. Penetrations through walls, floors and ceilings shall be done in manner to maintain integrity of fire rating of respective wall, floor, or ceiling.

E. Reference Section 07902 for additional sealant requirements. Where conflicts occur with the specified requirements, the more stringent shall apply.

1.13 CUTTING AND PATCHING

A. Perform cutting and patching in strict accordance with provisions of these Specifications and following:

1. Coordinate Work to minimize cutting and patching.

2. Use adequate number of skilled workers who are thoroughly trained and experienced in necessary crafts and who are completely familiar with specified requirements and methods needed for proper performance of Work.

B. Request for Engineer's consent:

1. Prior to cutting which affects structural safety, submit a written request to Engineer for permission to proceed with cutting.

2. When conditions of Work or schedule require a change of materials or methods for cutting and patching, notify Engineer and secure written permission to proceed with the work.

C. Perform cutting and demolition using methods that will prevent damage to other portions of Work.

D. Perform fitting and adjusting to provide a finished installation complying with specified tolerances and finishes.

1.14 SURFACE CONDITIONS

A. Examine areas and conditions under which Work of this Division will be performed. Work required to correct conditions detrimental to timely and proper completion of Work shall be included as part of Work of this Division. Do not proceed until unsatisfactory conditions are corrected.

1.15 CONSTRUCTION REQUIREMENTS

A. Drawings show arrangements of Work. Rearrangement of spaces and equipment will be considered when Project conditions make this necessary and/or materials or equipment can be installed to better advantage. Prior to proceeding with Work, coordinate with various trades to prepare and submit five (5) copies of Drawings of proposed arrangement for Engineer's review. Allow minimum of 10 working days for review.

B. Installation or rearrangement of equipment and space for Contractor's convenience or to accommodate material or equipment substitutions will be considered. Assume responsibility for rearrangement of equipment and space and have Engineer review change before proceeding with Work. Request for changes shall be accompanied by Shop Drawings of affected equipment and space. Identify proposed monetary credits or other benefits. Allow minimum of 10 working days for review.

C. Properly locate and size all required pipe sleeves and slots, holes, or openings in structure.

1.16 PREPARATION AND COORDINATION

A. Coordinate the work in strict accordance with the Contract Documents as follows:

B. Information on the Drawings and in these Specifications is as accurate as could be secured, but absolute accuracy is not guaranteed. The drawings are diagrammatic, and the exact locations, distances, levels, and other conditions shall be governed by actual construction. The drawings and specifications shall be for guidance.

C. Field verify measurements. No extra compensation will be allowed because of differences between Work shown on Drawings and actual site measurements.

1.17 PROJECT RECORD DOCUMENTS

A. Provide Project record documents associated with Work in accordance with provisions of these Specifications. Refer to Sections 01700 and 01730 for additional requirements.

B. Throughout progress of the Work, maintain accurate record of all changes in Contract Documents (Drawings and Specifications). Changes shall include Addendums issued during bidding and location of electrical service lines, receptacles, and outside utilities.

C. Delegate responsibility for maintenance of record documents to one person on Contractor's staff.

D. Accuracy of Records

1. Thoroughly coordinate changes within record documents, making adequate and proper entries on each page of Specifications and each sheet of Drawings and other documents where required to show change properly. Match symbology and format of base documents.

2. Accuracy of records shall be such that future search for items shown in Contract Documents may rely reasonably on information obtained from approved Project record documents.

E. Maintain a job set of record documents protected from deterioration and from loss and damage until completion of Work. Transfer all recorded data to final Project record documents.

F. Making Entries on Drawings

1. Using erasable colored pencil (not ink or indelible pencil), clearly describe change by graphic line and note as required.

2. Date entries.

3. Call attention to entry by "cloud" drawn around area or areas affected.

4. In event of overlapping changes, use different colors for overlapping changes.

5. Make entries within 24 hours after receipt of information that changes have occurred.

6. Maintain base drawing format and use same symbology.

7. Convert field mark-ups to finished CADD record drawings when required in this Section.

G. Conversion of Schematic Layouts

a. The purpose of the final Project Record Documents is to provide factual information regarding all aspects of the Work, both concealed and visible, to enable future modification of the Work to proceed without lengthy and expensive site measurement, investigation, and examination.

2. Provide CADD electronic files in dwg Format using AutoCAD Release 2000 software. Upon written request, completion of a release form, and payment of the Engineer's standard fee of $200 plus applicable sales tax for a set-up charge and $25 per drawing plus applicable sales tax for copies of such files, Engineer will provide AutoCAD Release 2000 electronic files of base Contract Drawings in dwg format on 3-1/2 inch electronic or on compact disc. Engineer will also provide a list of drawing layers and names that shall be maintained.

3. Provide completed record drawings on electronic 3-1/2" disks or CD and one mylar film reproducible of each drawing.

4. Refer to Section 01770 for additional requirements.

H. Final Project Record Documents

1. Provide CADD Electronic files in .dwg format using AutoCAD Release 14 software. Upon written request, Engineer will provide AutoCAD Release 14 electronic files of base Contract Drawings in .dwg format on 3-1/2-inch electronic disks at no cost. Engineer will also provide a list of drawing layers and names that shall be maintained in record set.

2. Provide completed record drawings on electronic 3-1/2-inch disks and one reproducible Mylar film of each drawing.

3. Refer to Section 01720 for additional requirements.

1.18 OPERATION AND MAINTENANCE DATA

A. Submit two copies of preliminary draft of proposed manual or manuals to Engineer for review and comments. Allow minimum of 10 working days for review. Refer to Sections 0130, 01700 and 01730 for additional requirements.

B. Submit approved manual to Engineer prior to indoctrination of operation and maintenance personnel.

C. Where instruction manuals are required for submittal, they shall be prepared in accordance with the following:

Format:

Size: 8-1/2-inch by 11-inch

Paper: White bond, at least 20 pound weight

Text: Neatly written or printed

Drawings: 11 inches in height preferable; bind in with text; foldout acceptable; larger drawings acceptable but fold to fit within Manual and provide drawing pocket inside rear cover or bind in with text.

Flysheets: Separate each section of Manual with neatly prepared flysheets briefly describing contents of ensuing section; flysheets may be

in color.

Binding: Use heavy-duty plastic or fiberboard covers with binding mechanism concealed inside manual; 3-ring binders will be acceptable; binding is subject to **Engineer's** approval.

Measurements: Provide measurements in U.S. standard units (e.g., feet, inches, and pounds). Where items may be expected to be measured within 10 years in accordance with metric formulae, provide additional measurements in "International System of Units" (SI).

Provide front and back covers for each manual, using durable material approved by Engineer, and clearly identified on or through cover with at least following information:

OPERATING AND MAINTENANCE INSTRUCTIONS

Name and Address of Work

Name of Contractor

General subject of this manual

Space for approval signature of Engineer and approval date[s]

E. Contents: Include at least following:

1. Neatly typewritten index near front of Manual, giving immediate information as to location within manual of emergency information regarding installation.

2. Complete instructions regarding operation and maintenance of equipment involved including lubrication, disassembly, and reassembly.

3. Complete nomenclature of parts of equipment.

4. Complete nomenclature and part number of replaceable parts, name and address of nearest vendor and other data pertinent to procurement procedures.

5. Copy of guarantees and warranties issued.

6. Manufacturer's bulletins, cuts, and descriptive data, where pertinent, clearly indicating precise items included in this installation and deleting, or otherwise clearly indicating, manufacturers' data with which this installation is not concerned.

7. Other data as required in pertinent Sections of these Specifications.

1.19 TESTING AND INSPECTION

A. Provide personnel and equipment, make required tests, and secure required approvals from Engineer and Governmental Agencies having jurisdiction.

B. Make written notice to Engineer adequately in advance of each of following stages of construction:

1. When rough-in is complete, but not covered.

2. At completion of Work of this Division.

3. In underground condition prior to placing backfill, concrete floor slab, and when associated electrical Work is in place.

C. When material or workmanship is found to not comply with specified requirements, remove items from job site and replace them with items complying with specified requirements at no additional cost to Owner. This shall be performed within 3 days after receipt of written notice of noncompliance.

D. In Engineer's presence, test parts of electrical system and prove that items provided under this Division function electrically in required manner.

1.20 WARRANTY

A. Warrant equipment and workmanship for period of one year after date of substantial completion and replace or repair faulty equipment or installation at no cost to Owner for service during this period, in accordance with requirements of Division 1.

B. Warranty shall not void specific warranties issued by manufacturers for greater periods of time or void rights guaranteed to Owner by law.

C. Warranties shall be in writing in form satisfactory to Owner, and shall be delivered to Owner before final payment is made.

1.21 PROJECT COMPLETION

A. Upon completion of Work of this Division, thoroughly clean exposed portions of electrical installation, removing traces of soil, labels, grease, oil, and other foreign material, and using only type cleaner recommended by manufacturer of item being cleaned.

B. Thoroughly indoctrinate Owner's operation and maintenance personnel in contents of operations and maintenance manual required to be submitted as part of this Division of these Specifications.

END OF SECTION 16010

SECTION 16111

RACEWAYS AND FITTINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The General Provisions of the contract, including General and Supplementary Conditions, apply to the Work specified in this Section.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. All other Sections of Division 16.

B. All other Divisions of the Contract Documents. Refer to each Division's Specifications and Drawings for requirements.

1.3 SCOPE

A. Provide all equipment, materials, labor, supervision, and services necessary for or incidental to the installation of a complete and operating electrical raceway system, as indicated on the Drawings and as specified.

B. Work included:

1. Rigid metal conduit and fittings

2. Rigid metal and fittings with PVC coated jacket

3. Non-metallic conduit and fittings

1.4 QUALITY ASSURANCE

A. Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Without additional cost to the Owner, provide such other labor and materials as are required to complete the work of this Section in accordance to the requirements of governmental agencies having jurisdiction, regardless of whether such materials and associated labor are called for elsewhere in these Contract Documents.

C. When requested, provide the Architect with manufacturer's certificates that confirm that materials meet or exceed minimum requirements as specified.

PART 2 - PRODUCTS

2.1 CONDUITS AND FITTINGS

A. Provide metal conduits, tubing, fittings, and couplings of types, grades, sizes, and weights (wall thicknesses) for each service indicated. Where types and grades are not indicated, provide proper selection determined by installer to fulfill wiring requirements and comply with applicable portions of NEC for raceways.

B. Rigid Metal Conduit and Fittings

1. Rigid steel conduit: ANSI C80.1

2. Fittings and conduit bodies: ANSI/NEMA FB 1; threaded type, material to match conduit.

C. Plastic Conduit and Fittings

1. Conduit: NEMA TC 2; Schedule 40 PVC

2. Fittings and Conduit Bodies: NEMA TC 3

2.2 CONDUIT SUPPORTS

A. Conduit Clamps, Straps, and Supports: Steel or malleable iron

PART 3 - EXECUTION

3.1 CONDUIT SIZING, ARRANGEMENT, AND SUPPORT

A. Size of conduit shall be as indicated on the drawings or sized for conductor type installed, whichever is larger. Size all conduits in accordance with the NEC. Minimum conduit size shall be ¾ inch.

B. Arrange conduit to maintain maximum headroom and present a neat appearance.

C. Route exposed conduit and conduit above accessible ceilings parallel and perpendicular to walls and adjacent piping.

D. Maintain minimum 6-inch clearance between conduit and piping. Maintain 12-inch clearance between conduit and heat sources such as flues, steam pipes, and heating appliances.

E. Arrange conduit supports to prevent distortion of alignment by wire pulling operations. Fasten conduit using galvanized straps, lay-in adjustable hangers, clevis hangers, or bolted split stamped galvanized hangers.

F. Group conduit in parallel runs where practical and use conduit rack constructed of steel channel with conduit straps or clamps.

G. Do not fasten conduit with wire or perforated pipe straps. Remove all wire used for temporary conduit support during construction, before conductors are pulled.

3.2 CONDUIT INSTALLATION

A. Cut conduit square using a saw or pipe cutter; de-burr cut ends.

B. Bring conduit to the shoulder of fittings and couplings and fasten securely.

C. Use conduit hubs for fastening conduit to cast boxes and for fastening conduit to sheet metal boxes in damp or wet locations.

D. Install no more than the equivalent of three 90-degree bends between boxes.

E. Use conduit bodies to make sharp changes in direction, as around beams.

F. Use hydraulic one-shot conduit bender or factory elbows for bends in conduit larger than 2-inches in size.

G. Avoid moisture traps where possible; where unavoidable, provide junction box with drain fitting at conduit low point.

H. Use suitable conduit caps to protect installed conduit against entrance of dirt and moisture.

I. Provide a pull tape for spare empty conduits. The tape shall be fiberglass reinforced polyester tape with distance marking in feet continuous along its length. Furnish T&B or Greenlee products.

J. Install expansion joints where conduit crosses building expansion joints.

K. Where conduit penetrates fire-rated walls and floors, provide mechanical firestop fittings with UL listed fire rating equal to wall or floor rating. Seal opening around conduit with UL listed foamed silicone elastomer compound.

L. Route conduit through roof openings for piping and ductwork where possible; otherwise route through roof jack with pitch pocket.

M. Maximum size conduit in slabs above grade: 3/4 inch.

N. Make joints in accordance with manufacturers' written instructions.

O. Provide plastic warning tape for underground conduit or duct bank installations. Install warning tape directly above conduit one foot below finished grade or as shown on drawings.

P. Sand for intermediate fill around underground conduits shall be washed sand, suitable for concrete or masonry. Reference Section 16010 for additional backfill and excavation requirements.

3.3 CONDUIT INSTALLATION SCHEDULE

A. Underground installations more than two feet from foundation wall: Schedule 40 plastic conduit.

B. Installations underground within 2 feet of foundation wall: Rigid steel conduit with PVC jacket.

C. In slab or concrete above grade: Rigid steel conduit.

D. Exposed outdoor locations: Rigid steel conduit.

E. Installations below concrete slab: Schedule 40 PVC conduit.

END OF SECTION 16111

SECTION 16120

WIRE AND CABLE (600 VOLTS)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The General Provisions of the Contract, including General and Supplementary Conditions, apply to the Work specified in this Section.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. All other Sections of Division 16.

B. All other Divisions of the Contract Documents. Refer to each Division's Specifications and Drawings for requirements, including but not limited to the following:

1. Section 16111 - Raceways and Fittings

1.3 SCOPE

A. Provide all equipment, materials, labor, supervision, and services necessary for or incidental to the installation of conductors as indicated on the Drawings and as specified.

B. Work included:

1. Wiring connections and terminations, 600 Volt rating and below.

1.4 QUALITY ASSURANCE

A. Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Without additional cost to the Owner, provide such other labor and materials as are required to complete the work of this Section in accordance to the requirements of governmental agencies having jurisdiction, regardless of whether such materials and associated labor are called for elsewhere in these Contract Documents.

C. When requested, provide the manufacturer's certifications that confirm that materials meet or exceed minimum requirements as specified.

PART 2 - PRODUCTS

2.1 CONDUCTORS

A. Provide conductors made of soft-drawn annealed copper with a conductivity not less than that of 98% pure copper.

B. Building Wire:

1. Thermoplastic-insulated building wire: NEMA WC 5.

2. Feeders and branch circuits: Copper, stranded conductor, 600-volt insulation, THHN/THWN-2.

3. Control circuits: Copper, stranded conductor 600-volt insulation, THHN/THWN-2.

4. Use the following color code system:

	208Y/120 Volt Systems (NA)	480/240 Volt Systems
Phase A	Black	Brown
Phase B	Red	Orange
Phase C (NA)	Blue	Yellow
Neutral	White	Gray
Ground	Green	Green

C. Remote Control and Signal Cable:

1. Control cable for Class 2 or Class 3 remote control and signal circuits: Copper conductor, 300-volt insulation, rated 60-degree C, individual conductors twisted together, shielded, and covered with a PVC jacket; UL listed.

2. Plenum cable for Class 2 or Class 3 remote control and signal circuits: Copper conductor, 300-volt insulation, rated 60-degree C, individual conductors twisted together, shielded, and covered with a nonmetallic jacket; UL listed for use in air handling ducts, hollow spaces used as ducts, and plenums.

2.2 ACCEPTABLE MANUFACTURERS

A. Provide products by the following manufacturers:

1. Rome
2. Cablec
3. Pirelli
4. Belden
5. Or approved equal

PART 3 - EXECUTION

3.1 GENERAL WIRING METHODS (LESS THAN 600 VOLTS)

A. The minimum wire size shall be 12 AWG for power and lighting circuits, and no smaller than 18 AWG for control wiring. Remote control wiring shall not be less than 14 AWG for installed lengths of 50 feet or less. Remote control conductors shall be increased one size (per NEC Table 310) for each additional 50 feet of length. Increase the raceway system to accommodate the increased wire size.

B. Provide an equal number of conductors of equal size for each phase of a circuit in same raceway or cable.

C. Splice only in junction boxes, outlet boxes, pullboxes, or manholes.

D. Neatly train and lace wiring inside boxes, equipment, and panelboards.

E. Make conductor lengths for parallel circuits equal.

3.2 WIRING INSTALLATION IN RACEWAYS

A. Pull all conductors into a raceway at the same time. Use UL listed wire-pulling lubricant for pulling 4 AWG and larger wires.

B. Install wire in raceway after interior of building has been physically protected from the weather and all mechanical work likely to injure conductors has been completed.

C. Completely and thoroughly swab raceway system before installing conductors.

3.3 WIRING CONNECTIONS AND TERMINATIONS

A. Splice only in accessible boxes or manholes.

B. Use solderless pressure connectors with insulating covers for copper wire splices and taps 8 AWG and smaller.

C. Use split bolt connectors for copper wire splices and taps 6 AWG and larger. Tape uninsulated conductors and connectors with electrical tape to 150 percent of the insulation value of conductor.

D. Thoroughly clean wires before installing lugs and connectors.

E. Make splices, taps and terminations to carry full capacity of conductors without perceptible temperature rise.

F. Terminate spare conductors with electrical tape.

3.4 FIELD QUALITY CONTROL

A. Field inspection and testing will be performed under applicable provisions of Division 16.

B. Inspect wire and cable for physical damage and proper connection.

C. Torque test conductor connections and terminations to manufacturer's recommended values.

D. Perform continuity tests on all power and equipment branch circuit conductors. Verify proper phasing of all connections.

3.5 WIRE AND CABLE INSTALLATION SCHEDULE

A. All locations: Building wire in raceways.

END OF SECTION 16120

SECTION 16135

PRECAST ELECTRICAL MANHOLES AND PULLBOXES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The General Provisions of the Contract, including General and Supplementary Conditions, apply to the Work specified in this Section.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. All other Sections of Division 16.

B. All other Divisions of the Contract Documents. Refer to each Division's Specifications and Drawings for requirements including the following:

1. Section 16111 – Raceways and Fittings
2. Section 16450 - Grounding

1.3 SCOPE

A. Provide all equipment, materials, labor, supervision, and services necessary for or incidental to the installation of precast concrete electrical manholes and pullboxes, as indicated on the Drawings and specified.

B. Work included:

1. Prefabricated Manholes
2. Manhole Accessories
3. Excavation and Backfill as Required

1.4 REFERENCES

A. AASHO H-20 *Standard Specification for Highway Bridges*

B. ANSI/ASTM A153 – *Zinc Coating (Hot-Dip) on Iron and Steel Hardware*

C. ANSI/ASTM A569 – *Steel, Sheet and Strip, Carbon (0.15 Maximum Percent), Hot-Rolled, Commercial Quality*

D. ASTM A48 – *Gray Iron Castings*

E. ASTM A124 – *Zinc (Hot-Galvanized) Coatings and Products Fabricated from Rolled, Pressed, And Forged Steel Shapes, Plates, Bars and Strips*

1.5 QUALITY ASSURANCE

A. Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Without additional cost, provide such other labor and materials as are required to complete the work of this Section in accordance with the requirements of governmental agencies having jurisdiction, regardless of whether such materials and associated labor are called for elsewhere in the Contract Documents.

C. Manufacturer: Manufacturer shall be company specializing in structures with three (3) years' documented experience.

1.6 SUBMITTALS

A. Product Data: Submit the following:

1. Materials list of items proposed to be provided as part of the Work of this section.

2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements. Submit shop drawings and product data as follows:

a. Materials specifications, dimensions, capacities, sizes and locations of openings, reinforcing details, and accessory locations.

b. Product data for manhole accessories.

3. Manufacturer's recommended installation procedures which, when approved, will become the basis for accepting or rejecting actual installation procedures used on the Work. Documentation from the manufacturer, sealed by a professional structural engineer, stating that each manhole or pullbox is properly designed and constructed to meet all requirements of the intended location shall be required.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Strongwell/Quazite

B. Approved equal

PART 3 - EXECUTION

3.1 PREPARATION

A. Excavate, install base material, and compact base material in accordance with manufacturer's instructions.

3.2 INSTALLATION – PRECAST MANHOLES

A. Install and seal precast sections in accordance with manufacturer's instructions.

B. Install plumb.

C. Set the top of each pullbox to finished elevation.

3.3 INSTALLATION – ACCESSORIES

A. Install ground rod with top protruding 4 inches (100 mm) above manhole floor.

3.4 COORDINATION OF BOX LOCATIONS

A. Provide pullboxes as shown on Drawings and as required for splices, taps, wire pulling, equipment connections and code compliance.

B. Locations shown on Drawings are approximate unless dimensioned.

END OF SECTION 16135

SECTION 16410

UNDERGROUND ELECTRIC DISTRIBUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The General Provisions of the Contract, including General and Supplementary Conditions, apply to the Work specified in this section.

B. Refer to Section 16402 for work relating to utility electric service.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. All other Sections of Division 16.

B. All other Divisions of the Contract Documents. Refer to each Division's Specifications and Drawings for requirements, including but not limited to the following:

1. Section 16010 - General Requirements for Electrical Work
2. Section 16111 - Raceways and Fittings
3. Section 16120 - Wire and Cable (600Volts)

1.3 SCOPE

A. Provide and install materials, labor, supervision and services necessary for or incidental to the installation of a complete underground electric service as shown or indicated on the drawings and/or as specified.

B. Work Included:

1. Conduit
2. Conductors
3. Excavation
4. Pull Boxes

1.4 QUALITY ASSURANCE

A. When requested, provide the manufacturer's certificates that confirm that materials meet or exceed minimum requirements as specified.

B. Perform cable pulling calculations for the electrical power and communications systems based on the actual field routing of underground conduit or duct prior to duct or conduit installation. Calculations shall demonstrate that cable pulling tensions and sidewall pressures do not exceed manufacturer's requirements.

C. Submit calculations to the Engineer for approval. Provide pullboxes as required at no additional cost and where required in locations dictated by the calculations.

PART 2 - PRODUCTS

2.1 EQUIPMENT

A. Conduit: See Section 16111.

B. Markers: Continuous-printed plastic tape: Reference Section 16195.

C. Conductors: See Section 16120.

D. Duct Spacers: Fabricated plastic, UL approved.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Slope service to drainage point.

B. Terminate conduit in panel with grounding bushing. Make ground connection from bushing to ground bus with ground conductor sized as per drawings.

3.2 CONDUIT

A. Adjust final slopes on site to coordinate with existing utilities.

B. Install on undisturbed soil where possible. Use gravel and sand, placed in 8-inch lifts and compacted for backfill.

C. Clean and swab ducts/conduits.

END OF SECTION 16410

SECTION 16450

GROUNDING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The general provisions of the Contract, including General and Supplementary Conditions, apply to the work specified in this Section.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. All other Sections of Division 16.

B. All other Divisions of the Contract Documents. Refer to each Division's specifications and drawings for all requirements, including but not limited to the following:

1. Section 16111 - Raceways and Fittings.
2. Section 16120 - Wire and Cable.

1.3 SCOPE

A. Provide all equipment, materials, labor, supervision, and services necessary for or incidental to the installation of electrical systems grounding as shown or indicated on the Drawings and/or as specified.

B. Work Included:

1. Electrical equipment and raceway grounding and bonding.

1.4 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Without additional cost to the Owner, provide such other labor and materials as are required to complete the work of this Section in accordance with the requirements of governmental agencies having jurisdiction, regardless of whether such materials and associated labor are called for elsewhere in these Contract Documents.

C. When requested, provide the Engineer with the manufacturer's certificate that materials meet or exceed minimum requirements as specified.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Provide electrical grounding system indicated with assembly of materials, including but not limited to:

1. Wires and cables.
2. Connectors.
3. Terminals.
4. Ground rods.
5. Bonding jumper braid.

B. Where materials or components are not indicated, provide products complying with NEC, UL, IEEE, and established industry standards for applications indicated.

2.2 GROUND ROD

A. Ground Wire Termination: Exothermic connection to 4/0 conductor. U-bolt with pressure plate provided as test point.

B. Ground Rods: Copper-clad steel, 3/4" diameter, minimum length 8 feet.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install electrical grounding systems in accordance with applicable portions of NEC, with NECA's "Standard of Installation," and in accordance with recognized industry practices to ensure that products comply with requirements and serve intended functions.

B. Provide a separate, insulated equipment grounding conductor in feeder circuits. Terminate each end on a grounding lug, bus, or bushing.

3.2 FIELD QUALITY CONTROL

A. Inspect grounding and bonding system conductors and connections for tightness and proper installation.

B. Electrical Tests:

1. Perform fall-of-potential test or alternative in accordance with IEEE Standard 81-1991 on the main grounding electrode or systems.

2. Perform point-to-point tests to determine the resistance between the main grounding system and all major electrical equipment frames, system neutral, and/or derived neutral points.

C. Test Values:

1. The resistance between the main grounding electrode and ground should be no greater than five ohms. Install additional grounding electrodes, as required, to achieve the specified resistance value.

2. Investigate point-to-point resistance values which exceed 0.5 ohm. Correct deficiencies at no additional cost. Retest to prove compliance

D. Provide written certification to the Engineer that the grounding system has been tested and complies with the specified requirements.

E. Provide test report.

END OF SECTION 16450

SECTION 16503

POLES AND STANDARDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The General Provisions of the Contract, including General and Supplementary Conditions, apply to the Work specified in this Section.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. All other Sections of Division 16.

B. All other Divisions of the Contract Documents. Refer to each Division's Specifications and Drawings for requirements, including but not limited to the following:

1. Section 16120 - Wires and Cables
2. Section 16450 - Grounding
3. Section 16530 - Site Lighting

1.3 SCOPE

A. Provide all equipment, materials, labor, supervision, and services necessary for or incidental to the installation of poles and standards as shown or indicated on the Drawings and/or as specified.

B. Work Included:

1. Concrete bases and base reinforcement.
2. Anchor bolts.

1.4 SUBMITTALS

A. Reference Section 16010 for detailed requirements.

1.5 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Without additional cost to the Owner, provide such other labor and materials as are required to complete the work of this Section in accordance to the requirements of governmental agencies having jurisdiction, regardless of whether such materials and associated labor are called for elsewhere in these Contract Documents.

C. When requested, provide the Architect with manufacturer's certificate that materials meet or exceed minimum requirements as specified.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Provide poles and standards as specified on the lighting fixture schedule or an approved equal.

2.2 POLES

A. Provide poles as specified on the lighting fixture schedule or an approved equal.

B. Handhole: Complete with removable weatherproof cover installed 18 inches above bottom of pole.

C. Finish: Factory painted, color selection by architect.

2.3 ANCHOR BOLTS

A. Provide anchor bolts as recommended by manufacturer. All items to be hot-dipped galvanized.

B. Provide template for positioning of anchor bolts.

C. Provide anchor bolt covers painted to match pole.

PART 3 - EXECUTION

3.1 BASES

A. Construct as indicated on the civil drawings.

B. Install anchor bolts with 2 inch projection above top of bases unless indicated otherwise on the contract drawings.

3.2 INSTALLATION

A. Mount standards on bases plumb and true, utilizing shims as necessary.

B. Touch-up chips and scratches on poles upon completion.

END OF SECTION 16503

SECTION 16530

SITE LIGHTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The General Provisions of the Contract, including General and Supplementary Conditions, apply to the Work specified in this Section.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. All other Sections of Division 16.

B. All other Divisions of the Contract Documents. Refer to each Division's Specifications and Drawings for requirements, including but not limited to the following:

1. Section 16111 - Conduit.
2. Section 16503 - Poles and Standards.

1.3 SCOPE

A. Provide all equipment, materials, labor, supervision, and services necessary for or incidental to the installation of site lighting as shown or indicated on the Drawings and/or as specified.

B. Work Included:

1. Exterior lighting fixtures.

1.4 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Without additional cost to the Owner, provide such other labor and materials as are required to complete the work of this Section in accordance to the requirements of governmental agencies having jurisdiction, regardless of whether such materials and associated labor are called for elsewhere in these Contract Documents.

C. When requested, provide the Architect with manufacturer's certificate that materials meet or exceed minimum requirements as specified.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Provide exterior lighting fixtures of the types specified on the Drawings.

2.2 EXTERIOR LUMINAIRES AND ACCESSORIES

A. Enclosures: Complete with gaskets, stops, and barriers to form weatherproof assembly and prevent light leaks.

B. Provide low temperature ballasts, with reliable starting to -20 degrees F.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install underground wiring in conduit with watertight connections. Refer to Section 16111.

END OF SECTION 16530

U.S. Department
of Transportation

Federal Aviation
Administration

Advisory Circular

Subject: SPECIFICATION FOR OBSTRUCTION LIGHTING EQUIPMENT | **Date:** 09/12/06 | **Initiated by:** AAS-100 | **AC No.:** 150/5345-43F | **Change:**

1. PURPOSE. This advisory circular (AC) contains the Federal Aviation Administration (FAA) specification for obstruction lighting equipment.

2. EFFECTIVE DATE. Effective 6 months after the date of this circular, only that equipment qualified per this specification will be listed in AC 150/5345-53, Airport Lighting Equipment Certification Program.

3. CANCELLATION. AC 150/5345-43E, *Specification for Obstruction Lighting Equipment,* dated October 19, 1995, is canceled.

4. APPLICATION. The specifications contained in this AC are recommended by the FAA in all applications involving development of this nature. For airport projects receiving Federal funds under the airport grant assistance program, the use of these standards is mandatory.

5. DEFINITIONS.

a. Beam Spread. The angle between the two directions in a plane for which the intensity is equal to 50 percent of the minimum specified peak beam effective intensity.

b. Vertical Aiming Angle. The angle between the horizontal and a straight line intersecting the beam at its maximum intensity.

c. Steady-Burning (fixed) Light. A light having constant luminous intensity when observed from a fixed point.

d. Effective Intensity. The effective intensity of a flashing light is equal to the intensity of a steady-burning (fixed) light of the same color that produces the same visual range under identical conditions of observation.

6. PRINCIPAL CHANGES.

a. Added a requirement for the use of ultraviolet and ozone resistant materials with xenon flashtubes.

b. Added a requirement for solar radiation resistant plastic parts and applicable testing.

c. Added a requirement for surge protection and testing for equipment with solid-state devices.

d. Added requirements from FAA Engineering Brief #67 as necessary to provide requirements for obstruction lighting using alternative light sources (ALDs).

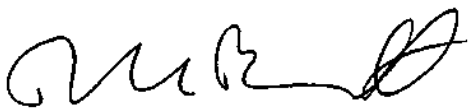
e. Added optional radiated emissions requirements with no testing required.

7. **METRIC UNITS.** To promote an orderly transition to metric units, this AC includes both English and metric dimensions. The metric conversions may not be exact equivalents, and until there is an official changeover to the metric system, the English dimensions will govern.

8. **COMMENTS OR SUGGESTIONS** for improvements to this AC should be sent to:

Manager, Airport Engineering Division
Federal Aviation Administration
ATTN: AAS-100
800 Independence Avenue, S.W.
Washington, DC 20591

9. **COPIES OF THIS AC.** The Office of Airport Safety and Standards makes this AC available online at www.faa.gov.



DAVID L. BENNETT
Director of Airport Safety and Standards

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CHAPTER 1. SCOPE AND CLASSIFICATION.

1.1 Scope.

This specification sets forth the Federal Aviation Administration (FAA) requirements for obstruction lighting equipment used to increase conspicuity of structures to permit early obstruction recognition by pilots.

1.2 Equipment Classification.

Type	Description
L-810	Steady-burning red obstruction light
L-856	High intensity flashing white obstruction light, 40 Flashes Per Minute (FPM)
L-857	High intensity flashing white obstruction light, 60 FPM
L-864	Flashing red obstruction light, 20-40 FPM
L-865	Medium intensity flashing white obstruction light, 40 FPM
L-866	Medium intensity flashing white obstruction light, 60 FPM
L-885	Flashing red obstruction light, 60 FPM

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CHAPTER 2. REFERENCED DOCUMENTS.

2.1 General.

The following is a listing of documents referenced in this AC.

2.2 FAA Advisory Circulars (ACs).

AC 70/7460-1	*Obstruction Marking and Lighting*
AC 150/5345-53	*Airport Lighting Equipment Certification Program*

2.3 FAA Engineering Briefs.

Engineering Brief #67	*Light Sources Other Than Incandescent and Xenon for Airport and Obstruction Lighting Fixtures*

2.4 Military Standards and Specifications.

MIL-STD-810F	*Environmental Engineering Considerations and Laboratory Tests*
MIL-C-7989	*Cover, Light-Transmitting, for Aeronautical Lights, General Specification for*

2.5 Code of Federal Regulations (CFR).

Title 47	*Telecommunications*
Part 15	*Radio Frequency Devices*

2.6 Institute of Electrical and Electronics Engineers (IEEE) Publications.

IEEE C62.41-1991	*IEEE Recommended Practice on Surge Voltages in Low-Voltage AC Power Circuits*
IEEE C62.45	*IEEE Recommended Practice on Surge Testing for Equipment Connected to Low-Voltage (1000 V and Less) AC Power Circuits*

2.7 International Standardization Organization (ISO) Publications.

ISO-10012	*Measurement Management Systems – Requirements for Measurement Processes and Measuring Equipment*

2.8 International Civil Aviation Organization (ICAO).

Annex 14	*Volume 1, Aerodrome Design and Operations*

2.9 Illuminating Engineering Society (IES).

IES Handbook	*Reference and Application Volume, 8th Edition, 1993, Flashing Light Signals, pp. 96-97*

Copies of FAA ACs may be obtained from:

U.S. Department of Transportation
Subsequent Distribution
Office Ardmore East Business Center
3341 Q 75th Ave.
Landover, MD 20785

Tel: (301) 322-4961
FAX: (301) 386-5394
Website: www.faa.gov

Copies of military standards and specifications may be obtained from:

DAPS/DODSSP
Building 4, Section D
700 Robbins Avenue
Philadelphia, PA 19111-5094

Tel: (215) 697-2179
FAX: (215) 697-1460
Website: dodssp.daps.dla.mil

Copies of IEEE standards may be obtained from:

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445 Hoes Lane
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Piscataway, NJ 08855-1331

Tel: (800) 678-4333
FAX: (732) 981-0060 *(Worldwide)*
FAX: (732) 981-9667
E-mail: storehelp@ieee.org
Website: shop.ieee.org/ieeestore

Copies of the ISO document are available online from:

Website: www.iso.ch

Copies of ICAO documents may be obtained from:

ICAO, Document Sales Unit
999 University Street
Montreal, Quebec, Canada H3C 5H7

Telephone: +1 (514) 954-8022
FAX: +1(514) 954-6769

E-mail: sales@incao.int
Website: www.icao.int

Copies of IES of North America (IESNA) documents may be obtained from:

Website: www.techstreet.com
or
Website: www.iesna.org/shop/

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CHAPTER 3. EQUIPMENT REQUIREMENTS.

3.1 General.

This section addresses environmental, design, and photometric requirements for obstruction light equipment. Criteria for selecting the proper obstruction lighting equipment, installation tolerances, and administrative information are in AC 70/7460-1, *Obstruction Marking and Lighting.*

3.2 Environmental Requirements.

Obstruction lighting equipment must be designed for continuous operation under the following conditions:

a. Temperature. Storage/shipping: -67 degrees Fahrenheit (F) (-55 degrees Celsius (C)) to 130 degrees F (55 degrees C). Operating: -40 degrees F (-40 degrees C) to 130 degrees F (55 degrees C).

b. Humidity. 95 percent relative humidity.

c. Wind. Wind speeds up to 150 miles per hour (mph) (240 kilometeres per hour (kmph)).

d. Wind-blown Rain. Exposure to wind-blown rain from any direction.

e. Salt Fog. Exposure to salt-laden atmosphere.

f. Sunshine. Exposure to solar radiation.

3.3 Design Requirements.

3.3.1 Light Unit.

The light unit must be lightweight and designed for easy servicing and lamp (or flashtube) replacement. Materials used within the light unit must be selected for compatibility with their environment. All plastic lens parts (including gaskets), that are exposed to ultraviolet radiation or ozone gas must not change color, crack, check, disintegrate, or be otherwise degraded (photometry must remain compliant) and meet the equipment warranty requirements of AC 150/5345-53, Appendix 2. Each light unit must be an independent unit and must flash at the specified intensity or at its highest intensity when control signals are absent.

3.3.2 Light Covers.

Light-transmitting covers for light units must be per the requirements in MIL-C-7989. In addition, if plastic covers are used, they must be resistant to checking, crazing, or color changes caused by ultraviolet radiation or ozone gas exposure.

3.3.3 Light Colors.

The aviation red must be per ICAO Annex 14, Volume 1, Appendix 1, *Colours for Aeronautical Ground Lights,* at operating temperature within the following chromaticity boundaries:

purple boundary $y = 0.980 - x$

yellow boundary $y = 0.335$
$x + y + z = 1$

Xenon flashtube emission or a color temperature range from 4,000 to 8,000 degrees Kelvin is acceptable for white obstruction lights. See Engineering Brief #67 for additional information about lamp chromaticity requirements.

3.3.3.1 Light Color During Daytime.

Means must be provided on all L-810 obstruction lights to indicate the specified non-powered color during daytime viewing. See Engineering Brief #67 for additional information.

3.3.4 Aiming (for L-856 and L-857).

Light units must have a method for adjustment of the vertical aiming angle between 0 and +8 degrees. A spirit level or other device must be provided as part of each light unit for setting the vertical aiming angle of the light beam with an accuracy of one degree.

3.3.5 Control Unit.

3.3.5.1 Flashing White Obstruction Lighting Systems.

The control unit must set the system's flash rate, intensity and sequence and must be capable of controlling light units up to a distance of 2,500 feet (ft) (762 meters (m)). If the control unit or control wiring fails, the light units must continue to flash per Table 4 flash rate. Failure of an intensity step change circuit must cause all light units to remain operating at their proper intensity or alternatively to operate at the high intensity step.

3.3.5.1.1 Monitoring.

Each light unit must be monitored for FLASH/FAIL status. FAIL status is defined as either of the following conditions: unit misses four or more consecutive flashes; unit flashes at wrong intensity step during day operation. Monitoring must be fail safe (i.e., active signals for FLASH and absence of signals for FAIL). There must be a provision to permit connection to a remote alarm device, (supplied by others or as an option), to indicate the system and individual light unit FLASH/FAIL status.

NOTE: *See Engineering Brief #67 for additional information regarding the failure requirements for multiple alternative lighting devices (ALDs).*

3.3.5.1.2 Placement.

The control and monitor functions may be consolidated in a light unit or in a single enclosure for remote mounting or they may be distributed into several light units.

3.3.5.1.2.1 Remote Mounting.

In addition to the above, if placed in a remote mounted enclosure, the control unit must display the status of each light unit. An intensity control override switch must also be mounted in the enclosure to manually control light intensity during maintenance or in the event of a photoelectric control malfunction.

3.3.5.2 Flashing Red Obstruction Lights.

The control unit must set the system flash rate and flash sequence. Failure of the flashing circuit must cause the light units to energize and operate as steady burning lights. An override switch must be mounted on the control unit to manually control the lights during maintenance or in the event of a lack of a photoelectric control signal. To insure proper operation, all flashing red obstruction lights, inclusive of any associated system steady burning red lights, must be certified with a control unit whether internal or external to the lighting unit.

3.3.5.2.1 Dual Lighting Systems.

The control unit may be a separate unit or incorporated as part of either the white or red obstruction light control unit. The control unit must set the operating mode for each light unit in the system. Outage of one of two lamps, or any failure in the device that causes a reduction in intensity of the horizontal beam or results in an outage in the uppermost red beacon (L-864 unit) or outage of any uppermost red strobe, must cause the white obstruction light system to operate in its specified "night" step intensity. At no time should both red and white systems be on simultaneously. An override switch must be mounted on the control unit to manually control the operating mode of the system during maintenance or in the event of a lack of a photoelectric control signal.

3.3.5.2.2 Monitoring.

Each separate L-864 light unit and each tier of L-810 light units must be monitored for FLASH/FAIL status. FAIL is defined as outage of any lamp in an L-864 light unit, outage of any one lamp in a tier of L-810 light units, or failure of a flasher (steady on and/or total) for an L-864 light unit. Monitor signals must be fail safe (i.e., active signals for FLASH and absence of signals for FAIL). There must be a provision to permit connection to a remote alarm device, (supplied by others or as an option) to indicate FLASH/FAIL status.

NOTE: *See Engineering Brief #67 for additional information regarding the failure requirements for multiple alternative lighting devices (ALDs).*

3.3.6 Input Voltage.

The obstruction lighting equipment must be designed to operate from the specified input voltage ±10 percent. Incandescent lamps must be operated to within ±3 percent of the rated lamp voltage to provide proper light output.

3.3.7 Performance Criteria.

Manufacturers are required to publish performance criteria for all light generating devices (see Engineering Brief #67).

3.3.8 Transient Protection.

Equipment with solid state devices must be designed to withstand and/or include separate surge protection devices that are tested against defined waveforms per IEEE C62.41-1991, Table 4, Location Category C1, for single phase modes (line to ground, line to neutral, line and neutral to ground).

3.3.9 Radiated Emissions.

NOTE: *Optional only. No equipment qualification is required.*

a. Obstruction lighting that uses electronic circuitry to power the light source must be classified as an incidental radiator (47 CFR §15.13). This applies to equipment that does not intentionally generate any radio frequency energy, but may create such energy as an incidental part of its intended operations.

b. Obstruction light systems must employ sound engineering practices to minimize the risk of harmful interference.

3.3.10 Warning Labels.

All enclosures that contain voltages exceeding 150 volts direct current (VDC) or alternating current (AC) root mean square (rms) must have high voltage warning label(s) placed at a conspicuous location(s). Also, a visual indicator must be included within the enclosure to indicate that greater than 150 VDC is present on the high voltage capacitors.

3.3.11 Interlock Switches.

Interlock switches must be incorporated in each power supply and optionally in each flashhead so that opening either unit must (1) interrupt incoming power and (2) discharge all high voltage capacitors within the enclosure to 50 volts or less within 30 seconds.

3.3.12 Nameplate.

A nameplate, with the following information, must be permanently attached to each unit:

a. Name of unit (light unit, control unit, etc.).

b. FAA type (e.g., L-856, L-864, etc.).

c. Manufacturer's catalog number.

d. Manufacturer's name and address.

e. Rated separation distance in feet is ____ to _____ between power supply and optical head using American Wire Gage (AWG) ____ conductors. (Item e is required if a unique power supply and its associated optical head are separate components of the lighting system as in the case of some discharge lights.)

In addition to the above, the power supply must include nominal input voltage, number of phases, frequency, and peak VA rating.

3.3.13 Optional Arctic Kit

Light systems may be offered with an optional arctic kit to enable operation in temperatures below -40 degrees F (-40 degrees C).

3.3.14 Component Ratings.

3.3.14.1 Discharge Type Lighting Equipment.

The flashtube or flashtubes must have a minimum rated life of two years without maintenance or loss of light output below the minimum specified candela.

3.3.14.2 Component Separation Rating.

If the light unit's power supply and optical head are separate components, the manufacturer must rate each light unit for maximum and minimum separation at a given AWG wire size. The manufacturer must include this rating on the nameplate per section 3.3.12. The rating certifies that the unit meets all requirements within the rated distances. The manufacturer must maintain records of test results which support the stated separation rating until the next system re-qualification.

3.3.14.3 Incandescent Light Equipment.

Lamps must have a minimum rated life of 2,000 hours at rated voltage.

3.3.14.4 Alternative Light Source Equipment.

Light sources other than incandescent or xenon (light emitting diodes, cold cathode) must have a minimum rated life of two years without maintenance or loss of light output below the minimum specified intensity (see Engineering Brief #67).

3.3.14.5 Light Equipment Components.

All components used in obstruction lighting equipment, except lamps, must be designed to meet performance requirements for a minimum of one year without maintenance.

3.3.15 Leakage Current.

All obstruction lighting equipment classified in paragraph 1.2 must be designed to withstand application of 1,000 volts AC or 1,414 volts DC between the input power leads and equipment chassis for 10 seconds during which the leakage current must not exceed 10 microamperes at ambient room temperature and humidity.

3.4 Performance Requirements.

3.4.1 Photometric.

3.4.1.1 General.

The effective intensity for flashing lights must be calculated per the following formula by the method described for *Flashing Light Signals* in the IES Handbook, 1993 Reference and Application Volume 8th Edition, Pages 96 and 97:

$$I_e = \left(\int_{t_1}^{t_2} Idt \right) / (0.2 + (t_2 - t_1))$$

Where:

I_e	=	Effective intensity (Candela)
I	=	Instantaneous intensity (Candela)
$t1$, $t2$	=	Times in seconds of the beginning and end of that part of the flash when the value of I exceeds I_e. This choice of the times maximizes the value of I_e.

For discharge type flashing lights, the equipment must provide the specified light output at the specified temperature extremes as the input voltage simultaneously varies by ±10 percent from nominal. The light intensity and beam distribution requirements for obstruction lighting equipment are specified below. All intensities listed are effective intensities (except steady-burning red obstruction lights) measured at the flash rate specified in Table 4. All incandescent lights will be tested as steady burning lights. Additional requirements for ALDs are in Engineering Brief #67.

The effective intensity for multiple pulse flashes as used in strobe lights during nighttime operation must be calculated by:

$$I_e = \left(\frac{\int_{t_1}^{t_A} Idt}{0.2 + t_A - t_1} \right) + \left(\frac{\int_{t_B}^{t_C} Idt}{0.2 + t_C - t_B} \right) + \left(\frac{\int_{t_D}^{t_E} Idt}{0.2 + t_E - t_D} \right) + \ldots + \left(\frac{\int_{t_X}^{t_Z} Idt}{0.2 + t_Z - t_X} \right)$$

The frequency of the pulses must not be less than 50 Hz and the interval t_A- t_1 must not vary by more than ±5% from the nominal value from pulse to pulse over the simultaneous extremes of temperature and input voltage.

3.4.1.2 L-810 Light Unit.

The center of the vertical beam spread must be between +4 and +20 degrees. With a minimum vertical beam spread of 10 degrees and at all radials throughout 360 degrees, there must be a minimum intensity of 32.5 candela. Mechanical interface for installation must be 3/4 or 1 inch National Pipe Thread (NPT) side and/or bottom.

3.4.1.3 L-856 Light Unit.

The beam spread and effective intensity must be per Table 1.

Table 1. L-856 Intensity Requirements.

Step	Beam Spread		Peak Intensity (candela) [2]
	Horizontal [1] (degrees)	Vertical (degrees)	
Day	90 or 120	3 - 7	270,000 ±25%
Twilight	90 or 120	3 - 7	20,000 ±25%
Night	90 or 120	3 - 7	2,000 ±25%

NOTES:

(1) Multiple light units may be used to achieve a horizontal coverage of 360 degrees.

(2) When the light unit is installed per the manufacturer's instructions, the intensity at zero degrees elevation angle (horizontal) must be at least as great as the minimum specified beam peak intensity. For stray light, the intensity at 10 degrees below horizontal, at any radial, must not be greater than 3% of the peak intensity at the same radial.

3.4.1.4 L-857 Light Unit.

Photometric requirements are defined in Table 2.

Table 2. L-857 Intensity Requirements.

Step	Beam Spread		Peak Intensity (candela)[2]
	Horizontal (degrees) [1]	Vertical (degrees)	
Day	90 or 120	3 - 7	140,000 ±25%
Twilight	90 or 120	3 - 7	20,000 ±25%
Night	90 or 120	3 - 7	2,000 ±25%

NOTES:

(1) Multiple light units may be used to achieve a horizontal coverage of 360 degrees.

(2) When the light unit is installed per the manufacturer's instructions, the intensity at zero degrees elevation angle (horizontal) must be at least as great as the minimum specified beam peak intensity. For stray light, the intensity at 10 degrees below horizontal, at any radial, must not be greater than 3% of the peak intensity at the same radial.

3.4.1.5 L-864 Light Unit.

At all radials throughout the omnidirectional 360 degrees, there must be a peak effective intensity of 2,000 ±25 percent candela. There must also be a minimum effective intensity of 750 candela throughout a minimum vertical beam spread of 3 degrees.

3.4.1.5.1 Beam Adjustment.

When the light unit is installed per the manufacturer's instructions, the intensity at zero degrees elevation angle (horizontal) must be at least as great as the minimum specified beam peak intensity.

3.4.1.6 L-865 Light Unit.

Photometric requirements are defined in Table 3.

Table 3. L-865 Intensity Requirements.

Step	Beam Spread		Peak Intensity (candela)(2)
	Horizontal (degrees)(1)	Vertical (degrees)	
Day/Twilight	360	3 minimum	20,000 ±25%
Night	360	3 minimum	2,000 ±25%

NOTES:

(1) Multiple light units may be used to achieve a horizontal coverage of 360 degrees.

(2) When the light unit is installed per the manufacturer's instructions, the intensity at zero degrees elevation angle (horizontal) must be at least as great as the minimum specified beam peak intensity. For stray light, the intensity at 10 degrees below horizontal, at any radial, must not be greater than 3% of the peak intensity at the same radial.

3.4.1.7 L-866 Light Unit.

The requirements are the same as the L-865 light unit, except the flash rate must be 60 flashes per minute (FPM).

3.4.1.8 L-885 Light Unit.

The requirements are the same as the L-864 light unit, except the flash rate must be 60 FPM.

3.4.2 Flash Rate and Duration.

Flash characteristics are defined in Table 4.

Table 4. Flash Characteristics for Obstruction Lights

Type	Intensity Step	Flash Rate (1)	Flash Duration (2)
L-856	Day & Twilight	40 FPM	Less than 100 milliseconds (ms)
L-856	Night	40 FPM	Between 100 and 250 ms inclusive
L-857	Day & Twilight	60 FPM	Less than 100 ms
L-857	Night	60 FPM	Between 100 and 250 ms inclusive
L-864	Single	20-40 FPM	1/2 to 2/3 of flash period if incandescent lighting (3), and between 100 and 2000 ms inclusive if other lighting sources.
L-865	Day & Twilight	40 FPM	Less than 100 ms
L-865	Night	40 FPM	Between 100 and 1000 ms inclusive
L-866	Day & Twilight	60 FPM	Less than 100 ms
L-866	Night	60-FPM	Between 100 and 250 ms inclusive
L-885	Single	60 FPM	1/2 to 2/3 of flash period if incandescent lighting (3), and between 100 and 670 ms inclusive if other lighting sources.

NOTES:

(1) Flash rates have a tolerance of ±5 percent.

(2) When the effective flash duration is achieved by a group of short flashes, the short flashes must be emitted at a rate of not less than 50 Hz.

(3) The light intensity during the "off" period must be less than 10 percent of the peak effective intensity. The "off" period must be at least 1/3 of the flash period.

3.4.3 System Flashing Requirements.

3.4.3.1 Simultaneous Flashing Systems.

All obstruction lights in systems composed of either L-864 light units or L-856 and/or L-865 light units must flash within 1/60 of a second of each other.

3.4.3.2 Sequenced Flashing Systems.

a. Catenary support structure systems composed of L-857, L-866, or L-885 light units must have a sequenced flashing characteristic.

b. This system consists of three lighting levels on or near each supporting structure. One light level is near the top, one at the bottom or lowest point of the catenary, and one midway between the top and bottom.

c. The flash sequence must be middle, top, and bottom.

d. The interval between top and bottom flashes must be about twice the interval between middle and top flashes.

e. The interval between the end of one sequence and the beginning of the next must be about 10 times the interval between middle and top flashes.

f. The time for the completion of one cycle must be one second (±5 percent).

3.4.4 Intensity Step Changing.

3.4.4.1 White Obstruction Lights.

The light unit intensity must be controlled by a photocell facing the northern (polar) sky. White obstruction lights must automatically change intensity steps when the ambient light changes as follows:

a. From day intensity to twilight intensity when the illumination decreases below 60 foot-candles (645.8 lux) but before it reaches 35 foot-candles (376.7 lux).

b. From twilight intensity to night intensity when the illumination decreases below 5 foot-candles (53.8 lux) but before it reaches 2 foot-candles (21.5 lux).

c. From night intensity to twilight intensity when the illumination increases above 2 foot-candles (21.5 lux) but before it reaches 5 foot-candles (53.8 lux).

d. From twilight intensity to day intensity when the illumination increases above 35 foot-candles (376.7 lux) but before it reaches 60 foot-candles (645.8 lux).

3.4.4.2 Red Obstruction Lights.

If automatic control is utilized, the light unit must turn on when the ambient light decreases to not less than 35 foot-candles (367.7 lux) and turn off when the ambient light increases to not more than 60 foot-candles (645.8 lux). Single L-810 light units are controlled in a manner compatible with the particular installation.

3.4.4.3 Dual Obstruction Lighting System.

White obstruction lights must turn off and red obstruction lights must turn on when the ambient light changes from twilight to night per paragraph 3.4.4.1b. Red obstruction lights must turn off and white obstruction lights must turn on when the ambient light changes from night to twilight per paragraph 3.4.4.1c.

3.5 Instruction Manual.

An instruction manual containing the following information must be furnished with all obstruction lighting equipment:

a. Complete system schematic and wiring diagrams showing all components cross-indexed to the parts list.

b. Complete parts list of field replaceable parts with applicable rating and characteristics of each part, and with the component manufacturer's part number as appropriate.

c. Installation instructions, including leveling and aiming of light units.

d. Maintenance instructions, including lamp or flashtube replacement, theory of operation, troubleshooting charts and, as appropriate, conspicuous warnings about alignment and replacement of lamps and light units with other than manufacturer recommended items. Explanation of testing requirements regarding light units with specific lamps must be provided in the text. A discussion must be included about mixing light units as replacements with other manufacturers' units with emphasis on assuring that system design of obstruction lighting is not degraded.

e. Operating instructions.

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CHAPTER 4. EQUIPMENT QUALIFICATION REQUIREMENTS.

4.1 Qualification Procedures.

Procedures for qualifying equipment to be furnished under the Federal grant assistance program for airports are contained in AC 150/5345-53, *Airport Lighting Equipment Certification Program.*

4.2 Qualification Tests.

Qualification tests must be conducted on the light unit in the following order:

a. Initial photometric test, per paragraph 4.2.1

b. Environmental tests, per paragraphs 4.2.2, 4.2.3, 4.2.4, 4.2.5, 4.2.6, 4.2.7, and 4.2.8 (in any order)

c. 1000 hours of continuous operation, per paragraph 4.2.10

d. System Operational Test, per paragraph 4.2.10

e. Leakage Current Test, per paragraph 4.2.11

f. Sampling Photometric Test, per paragraph 4.2.1

g. Visual examination, per paragraph 4.2.12

h. Transient Protection Test, per paragraph 4.2.9. The equipment may be damaged by this test. It should only be performed when testing per paragraphs a though c above is complete.

Sample photometric and system operational tests must be conducted after completion of all environmental tests. The same unit(s) must be used throughout the tests. The following tests are required to demonstrate compliance with this specification. The tests may be run on the control unit, power supply, and a single light unit, with a simulated load replacing the other light units. Equipment tested must be as a complete system.

4.2.1 Photometric Test.

a. A full photometric test as described in this section must be performed before all environmental tests.

NOTE: *To verify proper color correction, photometric testing conducted on alternative light source fixtures must be done with a detector having an up to date calibration including spectral response data (see Engineering Brief #67).*

b. A sampling photometric retest must be conducted after the unit has been operated continuously for 1000 hours with normal (12 hour) day/night cycling. This sampling must consist of measuring the vertical beam pattern for compliance with photometric requirements at a minimum of two of the previously tested horizontal radials.

c. Light units must be energized by the system power supply and control unit, and must be tested for compliance with photometric requirements.

d. For alternative light source equipment high temperature testing, see Engineering Brief #67.

e. Incandescent lamps must be tested at ±3 percent of their nominal voltage.

f. Red light intensity may be measured in white light and then calculated if the glassware manufacturer certifies the chromaticity and transmissivity values of the red filter material for the particular source.

g. If more than one lamp type is to be used, the qualification testing must be completed for each lamp type.

h. For a discharge type flashing system, if the power supply and optical head are separate components, the manufacturer must demonstrate that the required photometrics are produced with the units separated by maximum and minimum recommended distances and connected by cable recommended by the manufacturer.

i. Photometric test results must be in the forms of:

(1) Vertical beam pattern: Distribution curve (vertical angle versus candela) with minimum one degree spacing of test points over range of specified angles.

(2) Horizontal beam pattern: Polar plot (horizontal angle versus candela) with minimum 30 degree spacing of test points.

4.2.2 High Temperature Test.

a. The high temperature test must be conducted per MIL-STD-810F, Method 501.4, Procedure II. The equipment must be subjected to a constant temperature of +130 degrees F (+55 degrees C) for 4 hours after equipment temperature stabilization and be operated throughout the test.

NOTE: *For steady state temperature testing, consider thermal stabilization to be achieved when the temperatures of critical internal operating components are relatively constant. (Because of test item duty cycling or the operating characteristics, a constant temperature may never be achieved.)*

b. During the test, the manufacturer must demonstrate that the equipment maintains the specified flash rate and (for discharge type flashing light) the proper amount of energy is being delivered to the flashtube as the input voltage is varied by ±10 percent from nominal.

c. A visual examination must be conducted after the equipment is removed from the chamber. Failure of the equipment to operate as specified is cause for rejection.

4.2.3 Low Temperature Test.

a. The low temperature test must be conducted per MIL-STD-810F, Method 502.4, Procedure II. The equipment must be placed in a chamber that maintains a temperature of -67 degrees F (-55 degrees C) for shipping/storage requirements and -40 degrees F (-40 degrees C) for equipment operational requirements.

b. Equipment operation must be demonstrated at the beginning of the test.

c. The equipment storage and shipping low temperature requirement is -67 degrees F (-55 degrees C). The equipment must be stabilized and cold soaked at the storage/shipping temperature for one hour. The test chamber must then be ramped to the -40 degree F (-4 degrees C) equipment operating temperature at no more than 6 degrees F (3 degrees C) per minute to prevent thermal shock to the equipment.

d. The equipment, with input power off, must then be exposed to a 24-hour soaking period at -40 degrees F (-40 degrees C) after which the equipment must be turned on for one hour, and must operate normally. For discharge type flashing lights, the unit must achieve specified flash rate and intensity within 1 minute after being energized. During the one hour of operation, the manufacturer must demonstrate that the equipment maintains the specified flash rate and, for discharge type flashing lights, the proper amount of energy is being delivered to the flashtube as the input voltage is varied by ±10 percent from nominal.

e. At the conclusion of the test, a visual inspection must be conducted. Failure of the equipment to operate as specified is cause for rejection.

4.2.4 Rain Test.

The wind-blown rain test must be conducted per MIL-STD-810F, Method 506.4, Procedure I, paragraph 4.4.2. The rain must be at a rate of 5.2 inches per hour (132 mm/hour) with an exposure time of 30 minutes per side. The equipment must be operated throughout the test. Failure of the equipment to operate as specified is cause for rejection.

4.2.5 Wind Test.

Evidence must be provided, either by testing or by calculation of mechanical force, to demonstrate that installed light units meet the wind requirement in paragraph 3.2c.

4.2.6 Humidity Test.

The test must be per MIL-STD-810F, Method 507.4, Procedure, paragraph 4.5.2. The equipment must be subjected to two complete cycles per Table 507.4-1, except the maximum chamber temperature must be +130 degrees F (+55 degrees C). Failure of the equipment to operate as specified is cause for rejection.

4.2.7 Salt Fog Test.

The salt fog test must be conducted per MIL-STD-810F, Method 509.4, Procedure, paragraph 4.5.2. Failure of the equipment to operate as specified is cause for rejection. If corrosion is present, the third party certification body must determine if it has impacted equipment structural integrity or functionality.

4.2.8 Sunshine Test.

NOTE: *The manufacturer may submit a certificate of compliance (for consideration by the third party certification body) from the material(s) manufacturer attesting to UV resistance (per MIL-STD-810F) in lieu of the testing requirements below.*

The equipment must be in its normal operational configuration for this test.

a. A sunshine test must be conducted per MIL-STD-810, Method 505.4, paragraph 4.4.3, Procedure II for all obstruction lighting equipment with nonmetallic exterior parts or plastic/thermoplastic light covers.

b. The equipment must be subjected to a minimum of 56 cycles.

c. Perform an operational test of the equipment after 56 cycles.

d. Any evidence of deterioration of plastic parts: chalking, bleaching, cracking, hazing, or color changes (yellowing) to the thermoplastic lenses of the test unit must be causes for rejection.

e. For plastic/thermoplastic optical lenses or covers, the photometric performance must be measured after this test.

4.2.9 Transient Protection Test.

NOTE: *The equipment may be damaged by this test. Perform this test only when tests in paragraphs 4.2.1 through 4.2.8 are completed.*

a. Subject the obstruction lighting equipment to 2 pulses at 15 second intervals to a combination wave 1.2 microseconds (µs)/50µs and 8µs/20µs (6,000 volts, 3,000 amps) test pulse per the descriptions in IEEE C62.41, Table 4, Location Category C1.

b. See IEEE C62.41-1991 Section 9.3 for test condition and test generator information.

c. See IEEE C62.41-1991 Section 9.4 for a detailed combination pulse generation and parameters discussion.

d. See also IEEE C62.45, *IEEE Recommended Practice on Surge Testing for Equipment Connected to Low-Voltage (1,000 volts (V) and Less) AC Power Circuits* for guidance about equipment test methods.

e. The equipment under test must operate normally at the conclusion of the test.

4.2.10 System Operational Test.

a. A system operational test must be performed after the unit has been operated continuously without failure for 1000 hours with normal (12 hour) day/night cycling.

b. System components must be connected with the necessary wiring to electrically simulate an actual installation in which the top and bottom light units on a structure are separated by 2,000 feet (609.6 m) for a system composed of L-856 and/or L-865 and 500 feet (152.4 m) for system composed of L-857 or L-866, and the controller separated an additional 2,500 feet (762.0 m). Simulated interconnecting cables with equivalent impedance may be used in lieu of full cable lengths.

c. The system must be energized and operated to demonstrate compliance with all specification operating requirements such as flash rate, flash sequence, photoelectric switching of intensity steps, operation of interlocked devices, and satisfactory operation under input voltage variations.

d. If the power supply and optical head are separate components, it must be demonstrated that with the maximum and minimum nameplate rated separation between components, proper energy is delivered to the light unit to produce the specified photometrics.

e. It must be demonstrated that L-810 and L-864 lights produce the specified photometric requirement when energized over conductors (actual or simulated) representing the maximum and minimum nameplate rated cable length at the minimum input voltage.

4.2.11 Leakage Current Test.

Light units must be tested for compliance to the leakage current requirement in paragraph 3.3.15. Leakage current must be measured between the primary power connection points to the equipment chassis. The primary power connection points may be connected together during this test, but all other internal wiring must be connected as in normal operation. Devices for surge and lightning protection connected directly to input power wiring may be disconnected during this test.

4.2.12 Visual Examination.

The obstruction lighting equipment must be examined for compliance with the requirements on materials, finish, and quality of workmanship.

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CHAPTER 5. PRODUCTION TEST REQUIREMENTS.

5.1 System Production Tests.

A visual examination must be performed for all components in a system to verify proper materials and assembly. Each component of the system must be energized and tested to verify specified operation and conformance to photometric requirements.

5.2 Incandescent Light Unit Production Tests.

All light units must be visually examined for proper materials and assembly. The manufacturer must demonstrate that the on-going production photometric test results show the manufacturing process meets the photometric requirements per paragraphs 3.4.1.2, 3.4.1.5, or 3.4.1.8 and per section 5.6.

5.3 Alternative Lighting Devices (ALD).

All light units must be visually examined for proper materials and assembly. The manufacturer must demonstrate that the ongoing production photometric test results show the manufacturing process meets the photometric requirements per paragraphs 3.4.1.2 through 3.4.1.8 and per section 5.6.

5.4 Discharge Light Unit Production Test.

All light units must be visually examined for proper materials and assembly. The units must be energized and tested to verify proper operation and conformance to photometric requirements as specified in Tables 5 and 6.

5.5 Production Operational Test.

All light units must be tested to verify specified operation per the following minimum standards.

a. Each unit must be operated a minimum of 24 hours at highest intensity and a minimum of 12 hours at lowest intensity.

b. During highest intensity operation, each unit must be monitored for FLASH/FAIL as defined in 3.3.5.1.1. Minimum acceptable quality is zero FAILs in 24 hours of high intensity operation.

c. After a minimum 36 hours elapsed time of operation each light unit must be tested to verify proper operation of the following:

(1) All intensity step changes per paragraph 3.4.4.1

(2) Proper operation of monitoring per paragraph 3.3.5.1.1

(3) Proper interlock switch operation and discharge time to 50 volts (bank potential) per paragraph 3.3.11.

(4) Simultaneous flashing and intensity changing for multi-light systems per paragraphs 3.4.3.1 and 3.3.5.1, respectively

(5) Leakage current test per paragraph 3.3.15.

5.6 Production Photometric Test.

Photometric testing must be performed per Table 5 or Table 6 using either conventional sampling per column 2 or statistical process control (SPC) per column 3. If SPC is used for a characteristic, it must show statistical capability with Cpk ≥ 1.0 and $\sigma \geq 3.0$.

Table 5. L-856/L-857 Production Photometric Requirements.

CHARACTERISTIC TESTED [1]	TEST POINTS	
	CONVENTIONAL	SPC
a) Beam peak (Day Intensity)	3 radials each unit: 1 at center of Horizontal beam +2 radials ±45 degrees or ±60 degrees from center	1 radial each unit, random orientation
b) Beam peak (Twilight Intensity)	Same radials as (a)	Same radials as (a)
c) Beam peak (Night Intensity)	Same radials as (a)	Same radials as (a)
d) Intensity at -10 degrees (Night)	Same radials as (a)	Same radials as (a)

NOTES:

(1) Characteristic must meet all specifications per paragraph 3.4.1.3 or 3.4.1.4.

Table 6. L-865/866/864[1] /885[1] Production Photometric Requirements.

CHARACTERISTIC TESTED [2,3]	TEST POINTS	
	CONVENTIONAL	SPC
a) Beam peak (Day Intensity)	4 radials each unit: equally spaced, random orientation	1 radial each unit, random orientation
b) Beam peak (Night Intensity)	Same radials as (a)	Same radials as (a)
c) Intensity at -10 degrees	Same radials as (a)	Same radials as (a)

NOTES:

(1) Discharge type and alternative light source light only.

(2) Characteristic must meet all specifications per paragraph 3.4.1.5 or 3.4.1.6.

(3) Day, night, and -10 degrees where applicable.

5.7 Production Test Records.

Records showing actual test results of all tests required by paragraph 5.5 must be maintained for a period of three years by the manufacturer. These records must be traceable to the units tested and in the case of discharge light units traceable by serial number.

5.8 Production Test Equipment.

All measuring and test equipment used in the production of obstruction lighting equipment classified under paragraph 1.2 must have its accuracy and precision maintained by a calibration program with traceability to ISO-10012 *Measurement Management Systems – Requirements for Measurement Processes and Measuring Equipment* or current industry accreditation criteria. The manufacturer must show that all production photometric testing equipment correlates to the certifying laboratory's equipment to within ±5 percent. Photometric testing must be performed in a properly designed photometric range using a calibrated photometer. For discharge type flashing lights, all photometric measurements must be based on a minimum five flash average.

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SUGGESTED SPECIFICATIONS
FOR
DETECTABLE WARNING PANELS

1.0 General Requirements

1.1 This specification states the requirements for wet cast detectable warning panels for installation in curb ramps and hazardous areas.

1.2 Sample and Certified Test Reports

A representative sample of the proposed panel to be furnished must be submitted along with the required certified test reports for approval.

1.3 Standards

1.3.1 Detectable warning surface panels must comply with detectable warnings on walking surfaces section of the American with Disabilities Act (Title 49 CFR TRANSPORTATION, part 37.9 STANDARDS FOR ACCESSIBLE TRANSPORTATION FACILITIES, Appendix A, Section 4.29.2 DETECTABLE WARNINGS ON WALKING SURFACES.

2.0 Materials Requirements

Polymer concrete cast-in-place Detectable Warning Panels shall be manufactured using polymer concrete material. Polymer concrete material shall consist of calcareous and siliceous stone, glass fibers and thermo set polyester resin. The polymer concrete material shall be tested by an independent testing laboratory for chemical resistance and mechanical properties.

2.1 Chemical Resistance

Chemical Resistance	ASTM D-543
Simulated Sunlight	ASTM D-1501
Accelerated Service Test	ASTM D-756 Procedure "E"
Water Absorption	ASTM D-570

Material shall be determined to be acceptable if the following criteria are met. For chemical resistance, simulated sunlight, accelerated service test, and water absorption: retention of 75 percent of the control specimen values for load and deflection and no more than 2 percent change in weight. For flammability test, specimen should be self-extinguishing. For fungus resistance test the material should not allow any fungus growth. Smoke density shall be less than 0.5 at 1.5 minutes and less than 15 at 4 minutes. Surface flammability shall be less than 25.

2.2 Mechanical Properties

The mechanical properties of polymer concrete material shall be tested by an independent testing laboratory. Polymer concrete material shall have the following mechanical properties:

Mechanical Properties	Average Value	Test Method
Compressive Strength	11,430 PSI	ASTM C-170-99
Flexural Strength	3,330 PSI	ASTM C-580-02
Tensile Strength	1,710 PSI	ASTM C307-99
Shear Strength	11,670 PSI	ASTM D-372-02
Modulus of Elasticity	1,776,400 PSI	ASTM C-580

2.3 Construction

1. For consistency, detectable warning panels shall be manufactured using matched die molds under heat and pressure for superior material compaction, controlled chemical curing and uniform dimensions.
2. Polymer concrete detectable warning panels shall be reinforced with fiberglass mats for superior strength.
3. Polymer concrete detectable warning panels shall have ½" thick material sectional thickness excluding truncated domes height or reinforcement ribs.
4. Polymer concrete detectable warning panels shall be fitted with Zinc alloy concrete anchors and stainless steel bolts.
5. Polymer concrete panel surface shall be coated to keep the panel surface clean during installation. The coating shall be easily removable immediately after installation.
6. Polymer concrete detectable warning panels shall be fitted with hot dipped galvanized angles to facilitate installation in wet concrete.
7. Polymer concrete detectable warning panels shall be field replaceable without the need of cutting the existing concrete or pouring new concrete.
8. Slip Resistance of Polymer concrete detectable warning panel when tested by ASTM-C 1028 shall not to be less than 0.80.
9. Chemical Resistance of Tile when tested by ASTM-D 543 to withstand without any degradation or discoloration-1% hydrochloric acid, Acetic Acid, Sulfuric Acid, Sodium Chloride Sodium Hydroxide, Sodium Sulfate, Sodium Carbonate, Kerosene and Oil.
10. The material shall be abrasive resistant and shall be warranted for 5 years against excessive wear.
11. The polymer concrete material shall not sustain burning and be self extinguishing when tested in accordance with ASTM D 635.
12. The polymer concrete material shall not promote fungus growth when tested in accordance with ASTM G21.

13. The polymer concrete material surface flammability shall be tested in accordance with ASTM E-162 and shall be less than 25.

14. Smoke density shall be tested in accordance with ASTM E-662-03 and shall be less than 0.5 at 1.5 minutes and less than 15 at 4 minutes.

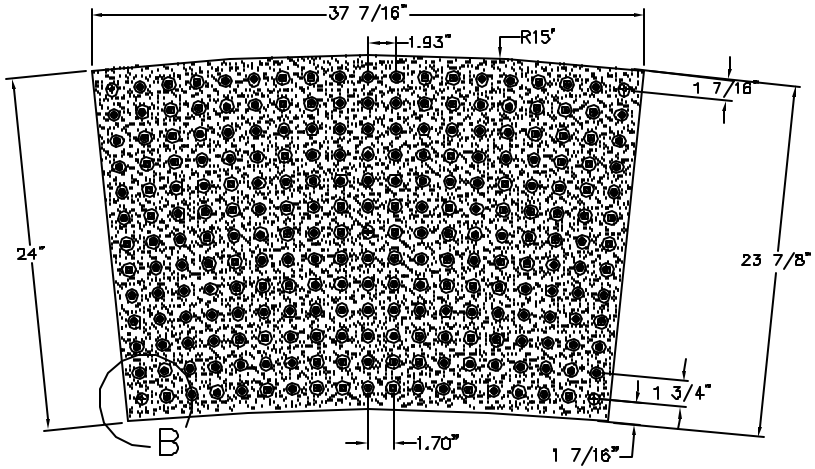
3.0 Testing and Documentation Requirements

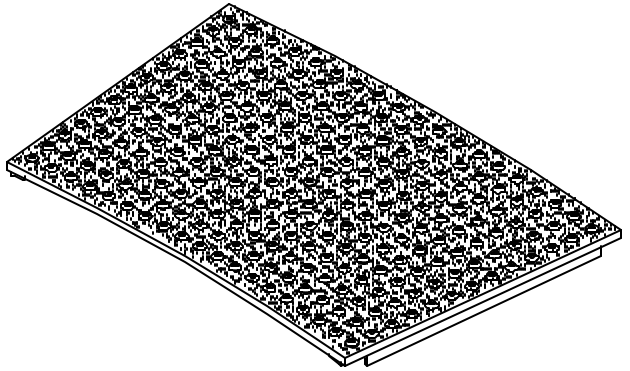
3.1 The Polymer concrete Cast-In-Place Detectable Warning Panels specified is based on Armorcast Products Company (818-982-3600) or approved equal.

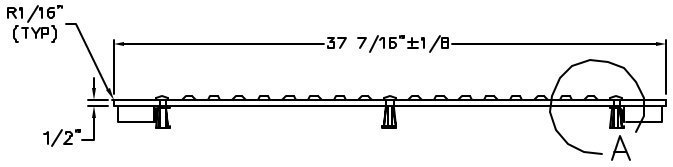
3.2 Certified test report must be submitted to demonstrate conformance to this specifications. Testing must be conducted by an independent testing laboratory.

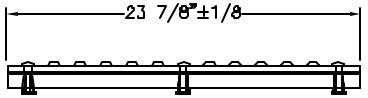
3.3 Installation procedures must be submitted along with product drawings.

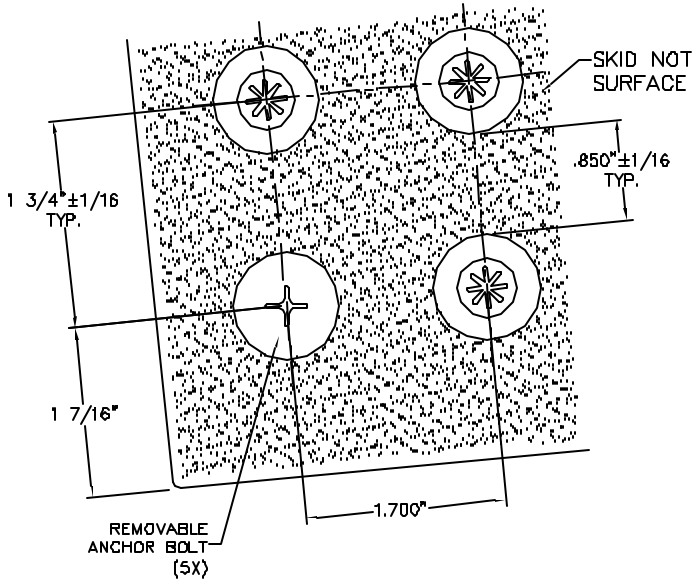
15' RADIUS PANEL



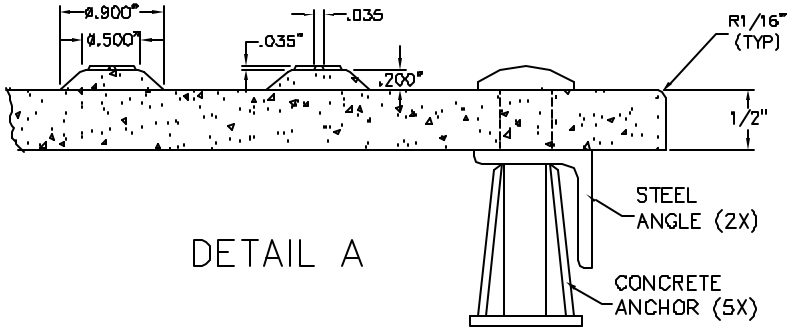








DETAIL B



DETAIL A

"XXX" DESIGNATE COLOR

FILNAME A6-R15ADA

13230 Saticoy Street, North Hollywood, CA 91605
(818) 982-1800
ARMORCAST PRODUCTS COMPANY

"THE INFORMATION IN THIS DRAWING IS CONFIDENTIAL. THE DRAWING IS NOT TO BE REPRODUCED OR ITS CONTENTS DIVULGED IN ANY WAY WHATSOEVER EXCEPT WITH THE PRIOR WRITTEN APPROVAL OF ARMORCAST PRODUCTS COMPANY. IT IS THE PROPERTY OF AND MUST BE RETURNED TO ARMORCAST PRODUCTS COMPANY, 13230 SATICOY STREET, NORTH HOLLYWOOD, CALIFORNIA 91605."

PART DESCRIPTION: 15' RADIUS X 1/2" REPLACEABLE DETECTABLE WARNING PANEL

CUSTOMER:

DRAWN	DATE	SCALE	MAX. LOAD
OA	8/06	NONE	
APPROV.	DATE	MATERIAL	DRAWING NUMBER
WS	8/06	POLYMER CONCRETE	A600R15ADA-XXX

SECTION GEO

GEOTECHNICAL REPORT

GEOTECHNICAL EXPLORATION

on

VITRUVIAN PARK
BUILDINGS 201, 202, AND 203
Off Vitruvian Way
Addison, Texas
ALPHA Report No. G152235

Prepared for:

UNITED DOMINION REALTY TRUST
3875 Ponte Avenue, Suite 400
Addison, Texas 75001
Attention: Ms. Deiadra Burns
October 21, 2015

Prepared By:

ALPHA TESTING, INC.
2209 Wisconsin Street, Suite 100
Dallas, Texas 75229

ALPHA TESTING
WHERE IT ALL BEGINS

Geotechnical
Construction Materials
Environmental
TBPE Firm No. 813

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Tel: 972-620-8911
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October 21, 2015

United Dominion Realty Trust
3875 Ponte Avenue, Suite 400
Addison, Texas 75001
Attention: Ms. Deiadra Burns

Re: Geotechnical Exploration
Vitruvian Way
Buildings 201, 202, and 203
Addison, Texas
ALPHA Report No. G152235

Attached is the report of the geotechnical exploration performed for the project referenced above. This study was authorized by Mr. Harry G. Alcock and performed in accordance with the Abbreviated Agreement for Professional Services dated October 2, 2015 and ALPHA Proposal No. 48845 dated August 27, 2015.

This report contains results of field explorations and laboratory testing and an engineering interpretation of these with respect to available project characteristics. The results and analyses were used to develop recommendations to aid design and construction of foundations and pavement.

ALPHA TESTING, INC. appreciates the opportunity to be of service on this project. If we can be of further assistance, such as providing materials testing services during construction, please contact our office.

Sincerely,

ALPHA TESTING, INC.

Andrew M. Adams, E.I.T.
Project Manager

STATE OF TEXAS
MARK L. McKAY
91067
LICENSED
PROFESSIONAL ENGINEER
10/21/15

Mark L. McKay, P.E.
Senior Geotechnical Engineer
Geotechnical Department Manager

AMA/MLM
Copy: (1) Client

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On

ALPHA REPORT NO. G152235

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APPENDIX

SOIL MODIFICATION WATER PRESSURE INJECTION (WPI) GUIDELINE SPECIFICATIONS

A-1 Methods of Field Exploration
Boring Location Plan – Figure 1

B-1 Methods of Laboratory Testing
Swell Test Results – Figure 2
Logs of Borings
Key to Soil Symbols and Classifications

1.0 PURPOSE AND SCOPE

The purpose of this geotechnical exploration is for ALPHA TESTING, INC. ("ALPHA") to evaluate for the "Client" some of the physical and engineering properties of subsurface materials at selected locations on the subject site with respect to formulation of appropriate geotechnical design parameters for the proposed construction. The field exploration was accomplished by securing subsurface samples from widely spaced test borings performed across the expanse of the site. Engineering analyses were performed from results of the field exploration and results of laboratory tests performed on representative samples.

Also included are general comments pertaining to reasonably anticipated construction problems and recommendations concerning earthwork and quality control testing during construction. This information can be used to evaluate subsurface conditions and to aid in ascertaining construction meets project specifications.

Recommendations provided in this report were developed from information obtained in test borings depicting subsurface conditions only at the specific boring locations and at the particular time designated on the logs. Subsurface conditions at other locations may differ from those observed at the boring locations, and subsurface conditions at boring locations may vary at different times of the year. The scope of work may not fully define the variability of subsurface materials and conditions that are present on the site.

The nature and extent of variations between borings may not become evident until construction. If significant variations then appear evident, our office should be contacted to re-evaluate our recommendations after performing on-site observations and possibly other tests.

2.0 PROJECT CHARACTERISTICS

It is proposed to construct a new apartment complex and parking garage structures (Vitruvian Park) on a site located generally north off Vitruvian Way east of Marsh Lane in Addison, Texas. A site plan illustrating the general outline of the property provided by the Client, with ALPHA's boring locations noted on it, is provided as Figure 1, titled "Boring Location Plan," in the Appendix of this report. At the time the field exploration was performed, the site was relatively open and vegetated with grass and scattered trees with a maintenance yard located in the north central portion of the site. According to online maps available from the North Central Texas Council of Governments (found at www.dfwmaps.com), the topography of the site generally slopes downward from the northeast towards the southwest with a maximum change in surface elevation of about 18 ft (about Elev. 568 to 550).

Present plans provide for the construction of new 5-story wood-framed apartment buildings and 5-story concrete parking garage structures. At least one level of the parking garage structures is planned partially below-grade. Based on the current available information, foundation loads for the parking garage structures could be on the order of 1,000 kips or less and it is anticipated these loads will be supported using a drilled pier foundation system. The apartment buildings are anticipated to create relatively light loads to be carried by the foundations. Pavement design recommendations for Portland cement concrete (PCC) are also provided in this report.

The finished floor elevations for the partial below-grade levels are assumed to be about 6 ft below existing grade and slab-on-grade foundations for the apartment buildings are assumed to be within about 2 ft of existing grade.

3.0 FIELD EXPLORATION

Subsurface conditions on the site were explored by drilling a total of twenty-three (23) test borings in general accordance with ASTM D 420 using standard rotary drilling equipment. Borings 1 through 6 were drilled in the parking garage areas to depths of about 70 ft each. Borings 7 through 23 were drilled in the proposed apartment building areas to a depth of 20 ft each. The approximate location of each test boring is shown on the Boring Location Plan, Figure 1, enclosed in the Appendix of this report. Details of drilling and sampling operations are briefly summarized in Methods of Field Exploration, Section A-1 of the Appendix.

Subsurface types encountered during the field exploration are presented on Log of Boring sheets included in the Appendix of this report. The boring logs contain our Field Technician's and Engineer's interpretation of conditions believed to exist between actual samples retrieved. Therefore, these boring logs contain both factual and interpretive information. Lines delineating subsurface strata on the boring logs are approximate and the actual transition between strata may be gradual.

4.0 LABORATORY TESTS

Selected samples of the subsurface materials were tested in the laboratory to evaluate their engineering properties as a basis in providing recommendations for foundation design and earthwork construction. A brief description of testing procedures used in the laboratory can be found in Methods of Laboratory Testing, Section B-1 of the Appendix. Individual test results are presented on Log of Boring sheets or on summary data sheets also enclosed in the Appendix.

5.0 GENERAL SUBSURFACE CONDITIONS

Based on the Geological Atlas of Texas, Dallas Sheet, available from the Texas Bureau of Economic Geology, published by the University of Texas at Austin, as well as the boring results and our experience at the Vitruvian site, the project site is generally located on the contact between the Austin Chalk Formation and the underlying Eagle Ford Formation. The Austin Chalk consists of massive gray unweathered limestone, overlain by tan weathered limestone. Near-surface residual soils associated with the Austin Chalk generally consist of high plasticity clays and/or low to moderate plasticity calcareous clays. The Eagle Ford Formation is composed predominantly of shale with occasional platy beds of sandstone and limestone. Residual overburden soils associated with the Eagle Ford Formation generally consist of clay and shaly clay with very high shrink/swell potential. In full section the Eagle Ford Formation should be over 200 ft thick at this site.

Subsurface materials consist generally of clay (CH), calcareous clay (CL), and/or shaly clay (CH) extending to depths of about 11 to 26 ft in Borings 1 through 6, 8, 12, 13, 14, 15, and 16, underlain by clay shale and deeper gray shale. The clay shale extended to depths of about 29 to 34 ft underlain by gray shale extending to the boring termination depths (70 ft). Shaly limestone

was encountered in Boring 14 at a depth of about 2 ft below existing grade and extended to a depth of about 11 ft underlain by clay shale. The upper 2 to 4 ft of material encountered in Borings 2, 4, 6, 11, 12, 13, 15, 16, 17, and 20 was visually classified as fill material. The letters in parenthesis represent the soils' classification according to the Unified Soil Classification System (ASTM D 2488). More detailed stratigraphic information is presented on the Log of Boring Sheets attached to this report.

Most of the subsurface materials are relatively impermeable and are anticipated to have a relatively slow response to water movement. Therefore, several days of observation will be required to evaluate actual groundwater levels within the depths explored. Also, the groundwater level at the site is anticipated to fluctuate seasonally depending on the amount of rainfall, prevailing weather conditions and subsurface drainage characteristics.

During the field explorations, free groundwater was encountered in the open boreholes upon completion of Borings 1 through 6 and 22 at depths of about 13 to 68 ft below the existing ground surface. No free groundwater was encountered in the other borings. It is common to detect seasonal groundwater from fill materials, from natural fractures within the clayey matrix, near the soil/rock (shale) interface or from fractures in the rock, particularly during or after periods of precipitation. If more detailed groundwater information is required, monitoring wells or piezometers can be installed.

Further details concerning subsurface materials and conditions encountered can be obtained from the Log of Boring sheets provided in the Appendix of this report.

6.0 DESIGN RECOMMENDATIONS

The following design recommendations were developed on the basis of the previously described Project Characteristics (Section 2.0) and General Subsurface Conditions (Section 5.0). If project criteria should change, including structure locations on the site, our office should conduct a review to determine if modifications to the recommendations are required. Further, it is recommended our office be provided with a copy of the final plans and specifications for review prior to construction.

Review of historical aerial photographs indicates the site was previously covered with apartment buildings which have since been removed. Any soil disturbed due to removal of the structures, foundations or pavements should be re-compacted in accordance with recommendations provided in Section 6.3 where moisture conditioned soil is required or Section 7.3 where general fill is required. All elements of the removed structures and pavement should be removed or cut off at least 1 ft below finished grade or 1 ft below the new structural elements, whichever is deeper. All abandoned utility lines should be either removed or positively sealed to prevent possible water seepage into subgrade soils.

The following design criteria given in this report were developed assuming the parking garage levels are about 6 ft below existing grade and slab-on-grade foundations for the apartment buildings are within 2 ft of existing grade. Cutting and filling on the site more than described

above can alter the recommended foundation design parameters. Therefore, it is recommended our office be contacted once detailed site grading plans are available to verify appropriate design parameters are utilized for final foundation design.

6.1 Existing Fill

As discussed in Section 5.0 of this report, existing fill was encountered to depths of about 2 to 4 ft below the existing ground surface in Borings 2, 4, 6, 11, 12, 13, 15, 16, 17, and 20. If compaction records for this fill cannot be obtained, the existing fill should be considered as uncontrolled fill. Uncontrolled fill is not suitable for direct support of slab foundations. Considering the soil improvements required to reduce potential seasonal movements of floor slabs (as discussed below in Section 6.3), it is expected most of the existing fill soil would be over-excavated and replaced in the building pad areas. Any existing fill encountered below the depth of moisture conditioning in the building pad areas should be removed to expose suitable firm native soils, and the resulting excavation filled to the building pad grade with controlled, engineered fill as described in Section 7.3 below. Pavement areas should be properly prepared and tested as discussed in Section 7.1 of this report.

Excavated materials can be utilized as engineered fill provided they are free of boulders, concrete, organics, debris, or other unsuitable materials. ALPHA TESTING should observe undercut excavations and monitor and test fill placement to verify conditions are as anticipated and that new fill is placed per the recommendations in this report.

6.2 Drilled Pier Foundation System

The structural frame and walls for the planned parking garages could be supported using a system of drilled, straight-shaft piers bearing in the gray shale. These piers should bear at least 3 ft into the underlying gray shale. Gray shale was encountered at depths of about 20 to 34 ft below existing grade in Borings 1 through 6. Based on the conditions encountered in the borings, laboratory testing and our area experience, the following allowable design values in Table A are recommended for the proposed structure. Deeper penetrations will be necessary to develop skin friction and/or uplift resistance.

TABLE A
ALLOWABLE END BEARING AND SKIN FRICTION VALUES

Material	End Bearing (ksf)	Skin Friction [Gravity Loads] (ksf)
All Existing Fill Material and Native Clay Soils to a Depth of 15 ft Below Final Grade	NA	Neglect
Native Clay Soils below a Depth of 15 ft from Final Grade	NA	0.5
Clay Shale and Upper 3 ft of Shale	NA	1.5
Shale Below a Minimum 3 ft of Penetration	18	2.5

Please note, the following special conditions apply to drilled pier foundations bearing in the gray shale at this site:

1. *Gray clay shale was encountered overlying the gray shale bearing stratum in Borings 1, 2, 3, and 6 at depths of about 21 to 26 ft and is estimated to be about 7 to 13 ft thick. The clay shale has relatively softer strength characteristics compared to the deeper gray shale. The clay shale is visually similar to the shale, and care should be taken to verify the pier shafts extend through the relatively softer clay shale to bear in the competent gray shale. Pier shaft excavations should be monitored by ALPHA geotechnical personnel to verify penetration into the shale stratum.*
2. *Varying amounts of hard limestone and/or sandstone seams and layers were encountered within the shale stratum at some of the borings. In addition, hard limestone layers were encountered at varying depths in test borings drilled for previous phases and during pier installation for previous structures. These layers are generally hard and could cause obstruction to pier installation. Rock excavation equipment (rock teeth and/or core barrels) may be required during pier installation. The contractor selected should have experience drilling piers in shale containing limestone seams and layers . The pier installation contract should contain provisions for penetrating these hard materials and other obstructions. Additionally, ALPHA Testing, Inc. should verify piers penetrate any clay layers and seams and bear in competent gray shale during installation.*

The minimum clear spacing between adjacent piers should be at least two (2) shaft diameters (based on the largest pier diameter) to develop the full skin friction resistance to gravity loads and uplift loads. Closer spacing will result in reduced skin friction resistance. We should be contacted to review closer pier spacing on a case-by-case basis.

The above bearing capacity contains a factor of safety of at least three (3) considering a general bearing capacity failure and the skin friction values have a factor of safety of at least two (2). Skin friction values in the gray shale are applicable only for the portion of the shaft in gray shale below the bottom of any temporary casing used. Normal elastic settlement of piers under loading is estimated at less than about 1 inch.

Each pier should contain sufficient full length reinforcing steel and should be embedded a sufficient distance into the gray shale to resist the uplift pressure (soil-to-pier adhesion) due to potential soil swell along the shaft from post-construction heave and other uplift forces applied by structural loadings. The magnitude of uplift adhesion due to soil swell along the pier shaft cannot be defined accurately and can vary according to the actual in-place moisture content of the soils during construction. It is estimated this uplift adhesion will not exceed about 2.2 kips per sq ft. This soil adhesion is approximated to act uniformly over the upper 12 ft of the pier shaft in contact with clayey soils. The uplift adhesion due to soil swell can be neglected over the portion of the shaft in contact with non-expansive material used to grade the building pads.

The uplift resistance of each pier can be computed using an allowable uplift skin friction values in Table B below. These uplift skin friction values can be assumed to act uniformly over the respective portions of the shaft in the clayey soils, clay shale, and shale. Skin friction values are applicable only for the portion of the shaft below the bottom of any temporary casing used. These uplift resistance values have a factor of safety of at least two (2).

TABLE B
ALLOWABLE UPLIFT SKIN FRICTION VALUES

MATERIAL	ALLOWABLE UPLIFT SKIN FRICTION (ksf)
All Existing Fill Material and Native Clay Soils to a Depth of 15 ft Below from Final Grade	Neglect
Native Clay Soils below a Depth of 15 ft from Final Grade	0.3
Clay Shale and Upper 3 ft of Shale	1.0
Shale Below a Minimum 3 ft of Penetration	1.8

All grade beams connecting piers should be formed and not cast in earthen trenches. Grade beams should be formed with a nominal 12-inch void at the bottom if constructed within about 2 ft of existing grade. Alternatively, a nominal 6-inch void should be provided below the bottom of grade beams in below-grade areas (assumed to be about 6 ft below final grade). Commercially available cardboard box forms (cartons) are made for the purpose of forming the void. The cardboard cartons should extend the full length and width of the grade beams. Prior to concrete placement, cartons should be inspected to verify they are firm, properly placed, and capable of supporting wet concrete. Some type of permanent soil retainer, such as pre-cast concrete panels, must be provided to prevent soils adjacent to grade beams from sloughing into the void space at the bottom of the grade beams. Additionally, backfill soils placed adjacent to grade beams must be compacted as outlined in Section 7.3 of this report.

Lateral analysis for drilled piers constructed at the site can be performed using the following design parameters (L-Pile) provided for the site soils in Tables C-1 and C-2. The lateral resistance of the top portion of the pier shafts (the portion within 12 ft of final grade) should be neglected due to disturbance and potential soil shrinkage.

TABLE C-1 L-PILE DESIGN PARAMETERS FOR CLAY SOILS AND CLAY SHALE					
Material	**Unit Weight, pci**	**Soil Modulus Parameter, pci**	**Shear Strength, psi**	**Strain at 50% Max Stress**	**Angle of Internal Friction, deg.**
Native Clay/Shaly Clay Deeper than 12 ft Below Existing Grade at Piers	0.069	500	7	0.007	0
Clay Shale and Upper 3 ft of Shale	0.075	6,000	20	0.005	0

TABLE C-2 L-PILE DESIGN PARAMETERS FOR SHALE				
Material	**Unit Weight, pci**	**Young's Modulus (Rock Condition), psi**	**Shear Strength, psi**	**K_{rm}**
Shale Below 3 ft Penetration	0.075	25,000	60	0.0005

Note: Rock Quality Designation (RQD) for shale is generally in the range of 40 to 80 percent. *Please Note*: Rock coring was not performed for this project. RQD values provided above are typical for the material encountered based on our area experience and from information obtained from field Texas Cone Penetration tests.

6.3 Potential Seasonal Movements and Subgrade Improvement

It is planned to construct the parking garage levels about 6 ft below existing grade and floor slabs for the apartment buildings within 2 ft of existing grade. Based on the subsurface stratigraphy encountered in the test borings performed at this site, the parking garage and apartment floor slabs will be supported on clayey soils. Our finding indicate the floor slab for the parking garage level could experience soil-related potential seasonal movements of about 4 inches if constructed at about 6 ft below existing and adjacent final grade. Alternatively, the slab-on-grade foundations for the apartment buildings could experience soil-related potential seasonal movements in excess of 5 ½ to 6 inches if constructed within 2 ft of existing grade. Once final grades are established and the locations of any ramps to below grade areas are located, ALPHA should be contacted to verify the subsequent PVR values and recommendations provided below.

These potential seasonal movements were estimated using results of absorption swell tests, in general accordance with methods outlined by Texas Department of Transportation (TxDOT) Test Method Tex-124-E and engineering judgment and experience. Estimated movements were calculated assuming the moisture content of the in-situ soil within the normal zone of seasonal moisture content change varies between a "dry" condition and a "wet" condition as defined by Tex-124-E. Also, it was assumed a 1 psi surcharge load from the slab acts on the subgrade soils. Movements exceeding those predicted above could occur if positive drainage of surface water is not maintained

or if soils are subject to an outside water source, such as leakage from a utility line or subsurface moisture migration from off-site locations.

In view of these potential seasonal movements, the most positive floor system for the buildings supported by drilled piers is a slab suspended completely above the existing highly expansive soils. A 12-inch or 6-inch void space should be provided between the bottom of the slab (or lowest suspended fixture) and top surface of the underlying expansive clays if the floor slab is constructed within about 2 ft of existing grade or about 6 ft below existing/adjacent final grade, respectively. Cardboard carton forms or a deeper crawl space can be used to create the minimum void space. A ventilated crawl space is preferred. Provisions should be made for (a) adequate drainage of the under-floor space and (b) differential movement of utility lines, including areas where the utility penetrates through the grade beam and/or where the utility penetrates below grade areas. If a crawl space is utilized, periodic inspections for plumbing line leaks, ponding water etc. should be performed with necessary repairs made.

If some floor slab movement is tolerable (about 2 inches or 1 inch), the concrete slab can be designed to bear uniformly on improved soils. The extent and depth of these subgrade improvement methods for the planned structures are summarized below in Tables D and E. These subgrade improvement procedures are discussed in Sections 6.3.1 and 6.3.2 below. Non-expansive material could consist of select fill, flexible base, or lime-treated on-site clayey soils as described in Section 7.3. The thickness of any gravel drainage layer below the slab (see Section 6.5 below) can also be counted as part of the thickness of non-expansive material. In choosing these methods of floor slab movement reduction, the Owner is accepting some post construction seasonal movement of the floor slab (2 inches or 1 inch).

TABLE D
SUBGRADE IMPROVEMENT RECOMMENDATIONS
FOR PARKING GARAGE FLOOR SLAB CONSTRUCTED
ABOUT 6 FT BELOW EXISTING/ADJACENT FINAL GRADE

Potential Seasonal Movement, inches	**Subgrade Improvement Method**
3	2 ft of Moisture Conditioned Soil
2	4 ft of Moisture Conditioned Soil
1	6 ft of Moisture Conditioned Soil

TABLE E SUBGRADE IMPROVEMENT RECOMMENDATIONS *FOR APARTMENT SLAB-ON-GRADE FOUNDATIONS CONSTRUCTED WITHIN ABOUT 2 FT OF EXISTING GRADE*	
Potential Seasonal Movement, inches	**Subgrade Improvement Method**
2	1 ft of Non-Expansive Fill Material, in Conjunction with either 9 ft of Moisture-Conditioned Soil or 10 ft of Water Pressure Injection below Slab
1	2 ft of Non-Expansive Fill Material, in Conjunction with either 10 ft of Moisture-Conditioned Soil or 10 ft of Water Pressure Injection below Slab

If a soil-supported floor slab is utilized for the planned building, a "floating" (fully ground supported, and not structurally connected to walls or foundations) floor slab is preferred. This reduces the risk of cracking and displacement of the floor slab due to differential movements between the slab and foundations. A floor slab doweled into perimeter grade beams can develop a plastic hinge (crack) parallel to and approximately 5 to 10 ft inside the building perimeter. The structural engineer should determine the need for connections between the slab and structural elements and determine if control joints to limit cracking are needed. A properly designed and constructed moisture barrier should be placed between the slab and subgrade soils to retard moisture migration through the slab.

6.3.1 Subgrade Improvement Utilizing Moisture-Conditioned Soil

Movements of the floor slabs for parking garage below-grade levels constructed about 6 ft below existing/adjacent final grade can be reduced to about 3 inches, 2 inches, or 1 inch by over excavating the existing clay soils and placing 2 ft, 4 ft, or 6 ft of moisture conditioned soils below the bottom of the floor slabs (See Table D).

Movements of apartment and amenity center building foundations constructed within about 2 ft of existing grade can be reduced to about 2 inches or 1 inch by placing at least 1 ft or 2 ft of non-expansive fill material, respectively, (See Table E) between the bottom of the slab and the top surface of 8 ft and 10 of moisture-conditioned soil, respectively. Non-expansive fill material could consist of select fill, flexible base, or lime-treated on-site clayey soils as described in Section 7.3.

Note: *Limestone was encountered about 2 ft below existing grade in Boring 14. It is not necessary to excavate shallow limestone to install moisture conditioned soils. ALPHA should be present to observe any areas where the full subgrade treatment depth is not achieved.*

Moisture conditioning consists of processing and compacting the specified minimum thickness of on-site soil at a “target” moisture content approximated to be at least 5 percentage points (with an upper limit of 7 percentage points) above the material’s optimum moisture content as determined by the standard Proctor method (ASTM D

698). Relatively lower plasticity soils may need to be placed at a moisture content closer to optimum moisture to allow for compaction of these materials. The moisture-conditioned soil should be placed in 8-in thick loose lifts and compacted to a dry density of 93 to 97 percent of standard Proctor maximum dry density. Moisture conditioning of the on-site soil should extend throughout the entire building pad area and at least 5 ft beyond the perimeter of the building. In entrance areas and adjoining flatwork, the moisture conditioning process should extend at least 10 ft beyond the perimeter of the building. However, non-expansive fill material should not extend beyond the building limits. Moisture-conditioned soils should be maintained in a moist condition prior to placement of the required thickness of non-expansive material. *Non-expansive fill material should not be placed above the plastic sheeting.*

The resulting estimated potential seasonal movements (3 inches, 2 inches or 1 inch, depending on the level of subgrade improvement implemented) were calculated assuming the moisture content of the moisture-conditioned soil varies between the “target” moisture content and the “wet” condition while the deeper undisturbed in-situ soil within the normal zone of seasonal moisture content change varies between the "dry" condition and the "wet" condition as defined by methods outlined in TxDOT Test Method Tex-124-E.

Please note, it is the intent of the moisture-conditioning process described above to reduce the free swell potential of the moisture-conditioned soil to 1 percent or less. Additional laboratory tests (i.e., standard Proctors, absorption swell tests, etc.) should be conducted during construction to verify the “target” moisture content for moisture-conditioning (estimated at 5 percentage points above the material’s optimum moisture content as defined by ASTM D 698) is sufficient to reduce the free swell potential of the processed soil to 1 percent or less. In addition, it is recommended samples of the moisture-conditioned material be routinely obtained during construction to verify the free swell of the improved material is 1 percent or less.

Installation of moisture-conditioned soils should be monitored and tested on a full-time basis by a representative of ALPHA TESTING, INC., to verify the soils tested were placed with the proper lift thickness, moisture content, and degree of compaction.

6.3.2 Subgrade Improvement Utilizing Water Pressure Injection (WPI)

An alternate subgrade improvement method to reduce movement utilizes the procedures of Water Pressure Injection (WPI) in conjunction with placement of non-expansive fill material. Prior to water pressure injection, all remaining existing fill material should be removed and replaced as recommended in Section 7.3. The improvement procedures outlined below will not eliminate future movement of the slabs. Recommended specifications for WPI are attached to this report in the appendix.

Note: *Limestone was encountered about 2 ft below existing grade in Boring 14. It is not practical nor necessary to inject beyond the limestone to perform the required injection depths. ALPHA should be present to verify the limestone in areas where injection refusal terminates above the full subgrade treatment depth.*

For 2-inch Slab Foundation Movement: Following removal of the necessary thickness of on-site expansive soils to allow for placement of at least 1 ft of non-expansive material, the exposed subgrade of the building pad should be water pressure injected (WPI) to a depth of 10 ft below the bottom of the non-expansive material.

For 1 inch Slab Foundation Movement: Following removal of the necessary thickness of on-site expansive soils to allow for placement of at least 2 ft of non-expansive fill material, the exposed subgrade of the building pad should be water pressure injected (WPI) to a depth of 10 ft below the bottom of the non-expansive material.

The water pressure injection should extend throughout the entire building pad area and at least 5 ft beyond the perimeter of each building. In entrance areas and adjoining flatwork, WPI should extend at least 10 ft beyond the perimeter of the building. The non-expansive fill material should preferably not extend beyond the building limits. Where exterior flatwork does not adjoin the building pad, (i.e. above the water injected soils), a moisture barrier consisting of a minimum of 10 mil plastic sheeting with 8 to 12 inches of soil cover should be provided above the water injected soils. Injected soils should be maintained in a moist condition prior to placement of the required thickness of non-expansive fill material, plastic sheeting or flatwork.

Performance of post-injection swell testing and moisture content determinations should be employed as final acceptance criteria in engineering analysis to examine accomplishment of intended objectives of the injection treatment. Maximum benefit of these movement reduction procedures can be achieved by employing ALPHA TESTING, INC. to observe, monitor and test the entire process. Construction specifications for the water pressure injection process are provided in the Appendix of this report.

The purpose of the above procedure is to pre-swell the existing soils. Satisfactory completion of the injection process is achieved when the desired moisture content and abatement of swell in the injected subgrade clay soils are reached. Acceptance criteria for water pressure injection should be based upon obtaining an average free swell of 1 percent or less in the injected zone. Performance of post-injection swell testing and moisture content determinations should be employed as final acceptance criteria in engineering analysis to examine accomplishment of intended objectives of the injection treatment.

The resulting estimated potential seasonal movements were calculated assuming the average free swell of the injected soils does not exceed 1 percent. Further, it is assumed the moisture content of the soil below the injected zone and within the normal zone of seasonal moisture content change varies between a "dry" condition and a "wet" condition as defined by Tex-124-E.

6.4 Slab-on-Grade Foundations for Apartment and Amenity Center Buildings

We understand it is presently planned to support the apartment and amenity center buildings using a slab-on-grade foundation system designed for potential seasonal movements of either 2 inches or 1 inch. As discussed in Section 6.3 above, slab foundations on existing clays under current conditions will be subject to potential soil-related movements up to about 6 inches. Subgrade improvements (non-expansive fill material and moisture conditioning or water pressure injection) as described in Section 6.3 can be used to reduce slab foundation movements to 2 inches or 1 inch.

A slab-on-grade foundation should be designed with exterior and interior grade beams adequate to provide sufficient rigidity to the foundation system. A net allowable bearing pressure of 1.5 kips per sq ft may be used for design of all grade beams bearing subgrade improved soils placed as outlined in Section 6.3. Grade beams should bear a minimum depth of 18 inches below final grade and should have a minimum width of 10 inches.

It is common to experience some minor cosmetic distress to structures with slab-on-grade foundation systems due to normal ground movements. To reduce cracking as normal movements occur in subgrade soils, all grade beams and the floor slab should be adequately reinforced with steel (conventional reinforcing steel and/or post-tensioned reinforcement). A properly designed and constructed moisture barrier should be placed between the slab and subgrade soils to retard moisture migration through the slabs.

6.5 Post-Tensioning Institute, Design of Post-Tensioned Slabs-on-Ground

Provided below is information for the design of post-tensioned, slab-on-grade foundations. Design parameters provided below were evaluated based on the conditions encountered in the borings and using information and correlations published by PTI Third Edition and VOLFLO 1.5 computer program provided by Geostructural Tool Kit, Inc. (GTI).

TABLE F
Potential Seasonal Movement of 2 inches
Following Subgrade Improvement as Outlined in Section 6.3

	EDGE LIFT	CENTER LIFT
Edge Moisture Distance, ft (e_m)	4.3	7.0
Differential Soil Movement, inches (y_m)	1.6	1.2

TABLE G
Potential Seasonal Movement of 1 inch
Following Subgrade Improvement as Outlined in Section 6.3

	EDGE LIFT	CENTER LIFT
Edge Moisture Distance, ft (e_m)	4.3	7.5
Differential Soil Movement, inches (y_m)	1.4	1.1

6.6 Subgrade Improvement for Swimming Pool and Pool Decks

Potential movements for the swimming pool deck slabs could be reduced to about 1 inch by improving the subgrade soils beneath these structures as generally recommended in Section 6.3.1 and 6.3.2 of this report (placing 10 ft of moisture conditioned soil or 10 ft of water injected soils in conjunction with 2 ft of non-expansive material beneath the pool deck slab). However, the soil improvements for the pool should extend to a depth that matches the elevation of the adjoining deck slab subgrade treatment. Therefore, for a 5-ft deep pool, moisture conditioning should extend to a depth of at least 7 ft beneath the bottom of the pool. Select fill is not required beneath the pool where the pool is at least 2 ft deep. Subgrade improvement referenced above should extend at least 5 ft beyond the pool deck slab area. Following subgrade improvement as recommended above, the pool and pool deck slabs constructed on-grade could experience potential movements of about 1 inch.

6.7 Lateral Earth Pressures for Below-Grade Levels

Below grade walls of up to about 6 ft below grade are planned for the parking garage structures. The magnitude of lateral earth pressure against below-grade walls is dependent on the method of backfill placement, type of backfill soil, drainage provisions, and type of wall (rigid or yielding) after placement of the backfill. Experience demonstrates when a wall is held rigidly against horizontal movement (restrained at the top), the lateral pressure (at-rest lateral earth pressure) against the wall is greater than the normally assumed active pressure. Yielding walls (rotation at the top of the wall on the order of 0.1 to 0.4 percent of the wall height) can be designed for active earth pressures (k_a) but rigid walls associated with the apartment building structure should be designed for higher at-rest lateral earth pressures (k_o). Walls should be designed using the equivalent fluid pressures provided in Table H below, considering a triangular stress distribution and assuming a horizontal ground surface extending back from the top of the wall. The equivalent fluid pressures provided do not include a factor of safety.

TABLE H LATERAL EARTH PRESSURES			
Material	**Condition**	**Equivalent Fluid Pressure, pcf**	
		Drained	**Undrained including Hydrostatic Pressure**
Free Draining Granular Soil Φ=35˚, ϒT =125 pcf	At-Rest, k_o=0.42	53	89
	Active, k_a=0.27	34	79
Site Clay Soil Φ=15˚, ϒT =120 pcf	At-Rest, k_o=0.74	---	105
	Active, k_a=0.59	---	96

Φ – Internal friction and ϒt – Effective Total Unit Weight

Free draining granular material should be a clean, non-plastic, relatively well-graded granular soil consisting of sand, gravel, or a sand and gravel mixture with less than 5 percent finer than the No. 200 sieve size. To reduce surface water seepage into the free draining backfill, the top 2-ft of the backfill should consist of on-site clay soil with a plasticity index of at least 25. To utilize the lateral earth pressures associated with free draining granular material, the free draining granular backfill should extend outward at least 2 ft from the base of the wall and then extend upward on a 1 (horizontal) to 2 (vertical) slope. The free draining granular backfill should be separated from the adjacent native soils using a filter fabric (Mirafi 140N, or equivalent) to prevent intrusion of native soils into the free draining granular.

Complete drainage of the free draining material should be provided to prevent the development of hydrostatic pressures behind the wall. A typical drainage system could consist of perforated plastic PVC pipes placed in filter trenches excavated parallel to the base of the walls for their entire length. Septic field drain pipe is **not** acceptable for this purpose. The drain pipes should be positioned at a depth lower than the bottom elevation of the wall and should also be wrapped with filter fabric (Mirafi 140N, or equivalent). A drainage system is beneficial regardless of the type of backfill used. As a minimum, weep-holes should be provided for free-standing exterior walls. Subsurface drains are recommended behind below-grade areas such as walls associated with the structure. Such drains should drain by gravity or be connected to suitable sump pits and pumps.

The effects of surcharge loading must also be considered. Surcharge loads should be multiplied by the applicable coefficient of earth pressure from Table H above, and the resulting pressure should be applied as a uniform lateral pressure over the full height of the wall. The lateral earth pressure recommendations in Table H above assume a horizontal ground surface extending backward from the top of the wall. If sloping backfill is used, the lateral earth pressure on the below-grade wall will be higher. We should be contacted for additional lateral earth pressure recommendations if sloping backfill is used behind a wall.

Lightweight, hand-controlled vibrating plate compactors are recommended for compaction of backfill adjacent to walls to reduce the possibility of increases in lateral pressures due to over-compaction. Heavy compaction equipment should not be operated near the walls. Also, compaction of backfill soils behind walls should not exceed 100 percent standard Proctor maximum dry density (ASTM D 698) to further limit lateral earth pressures against walls.

Below-grade walls associated with the structure should be waterproofed, and keyed joints and waterstops should be provided at all construction joints.

Settlement of backfill behind the walls should be anticipated. Even though backfill is properly compacted as recommended in Section 7.3 of this report, the wall backfill is still subject to settlements over time of up to about 1 to 2 percent of the total fill thickness.

6.8 Below-Grade Drainage for Parking Garage Slab

Consideration should be given to utilizing a sub-floor drainage system for below-grade areas that are susceptible to potential groundwater infiltration. The sub-floor drainage system should be sloped to drain to suitable sump pits. Consideration should also be given to providing multiple sump pits with an emergency power source. Depending on the tolerance for occasional wet spots, consideration can be given to deleting the sub-floor drainage, especially in parking areas, and rely on the perimeter wall drainage systems for collection of seepage. The need for a sub-floor drainage system should be reviewed during construction.

If a sub-floor drainage system is utilized it should be situated a minimum of 12 inches below the bottom of the slab. The drain system could consist of collector pipes (minimum 6 inches in diameter, perforated and wrapped with filter fabric - Mirafi 140N, or equivalent) in shallow trenches or bearing on top of rock connected to a uniform drainage layer at least 12 inches thick. Spacing of the drain pipes should not exceed 25 ft.

The drainage layer should consist of free-draining gravel material with a maximum nominal particle size of 2 inches and not more than 5 percent passing the No. 200 sieve. Gravel meeting the gradation requirements of ASTM C-33 Size No. 57 is an example of a commercially available material suitable for this purpose. The sub-floor drainage system should be sloped to drain to suitable sump pits. Consideration should also be given to providing multiple sump pits with an emergency power source.

6.9 Site Retaining Walls

Low-level (maximum 4 ft in height) site retaining walls should be designed to resist the expected lateral earth pressures as recommended above in Section 6.7. These walls can be supported using drilled straight shaft piers as recommended in Section 6.2. As an alternate to drilled piers, site retaining walls (those not structurally associated with the building) could be supported by shallow spread footing foundations bearing in clayey soils if some level of foundation movement is tolerable (up to about 6 inches).

The proposed retaining walls supported using shallow footings bearing in native undisturbed soils can be designed using a net allowable bearing pressure of 2 ksf. Foundations should bear at a depth of at least 2 ft below the final ground surface as measured at the toe of the wall. The recommended footing depth is required for bearing capacity purposes only. The structural engineer should review the recommended bearing depth to verify the walls are sufficiently designed for global stability and to resist sliding, overturning, etc. Wall footings should have a least dimension of 18 inches for bearing capacity considerations.

Careful monitoring during construction is necessary to locate any pockets or seams of unsuitable material, which might be encountered in excavations for footings. Unsuitable materials encountered at the foundation bearing level should be removed and replaced with lean concrete (about 2,000 psi strength at 28 days).

Resistance to sliding will be developed by friction along the base of the footing and passive earth pressure acting on the vertical face of a key installed in the base of the footing, if required. We recommend an allowable coefficient of friction of 0.3 along the bottom of the footings bearing in clayey soils. The available passive earth resistance on the vertical face of a key installed in the base of the footing may be calculated using an allowable passive earth pressure of 500 psf for a key bearing against undisturbed native clay soils or cohesive fill soils placed as recommended in Section 7.3. Passive resistance on the vertical face of the footing within 2 ft of the final site grade should be neglected.

6.10 Flatwork

Flatwork, pavement and any other soil-supported building elements will be subjected to the same level of movement as discussed in Section 6.3 above. In any areas where post-construction movements of flatwork would be critical, flatwork should be structurally supported, or subgrade improvements as discussed in Section 6.3 should be considered.

6.11 Seismic Considerations

The Site Class for seismic design is based on several factors that include soil profile (soil or rock), shear wave velocity, and strength, averaged over a depth of 100 ft. Since our borings did not extend to 100-foot depths, we based our determinations on the assumption that the subsurface materials below the bottom of the borings were similar to those encountered at the termination depth. Based on Section 1613.3.2 of the 2012 International Building Code and Table 20.3-1 in the 2010 ASCE-7, we recommend using Site Class C (very dense soils and soft rock) for seismic design at this site.

6.12 New Area Pavement

Clay fill soils encountered at the borings, or similar materials used as engineered fill for grading the site could be encountered as subgrade material for the parking and drive areas. These materials should be improved and prepared prior to construction of pavements as recommended below in Section 7.1. To permit correlation between

information from test borings and actual subgrade conditions exposed during construction, a qualified Geotechnical Engineer should be retained to provide subgrade monitoring and testing during construction. If there is any change in project criteria, the recommendations contained in this report should be reviewed by our office.

Calculations used to determine the required pavement thickness are based only on the physical and engineering properties of the materials and conventional thickness determination procedures. Pavement joining the buildings should be constructed with a curb and the joint between the building and curb should be sealed. Related civil design factors such as subgrade drainage, shoulder support, cross-sectional configurations, surface elevations, reinforcing steel, joint design and environmental factors will significantly affect the service life and must be included in preparation of the construction drawings and specifications, but were not included in the scope of this study. Normal periodic maintenance will be required for all pavement to achieve the design life of the pavement system.

The recommended pavement sections provided below are considered the minimum necessary to provide satisfactory performance based on the expected traffic loading. In some cases, City minimum standards for pavement section construction may exceed those provided below.

6.12.1 Pavement Subgrade Preparation

In areas where clayey soils are exposed after final subgrade elevation is achieved, the exposed surface of the pavement subgrade soil should be scarified to a depth of 6 inches and mixed with a minimum 8 percent hydrated lime (by dry soil weight) in conformance with TxDOT Item 260. Assuming an in-place unit weight of 100 pcf for the pavement subgrade soils, this percentage of lime equates to about 36 lbs of lime per sq yard of treated subgrade. The actual amount of lime required should be confirmed by additional laboratory tests (ASTM C 977 Appendix XI) prior to construction. The soil-lime mixture should be compacted to at least 95 percent of standard Proctor maximum dry density (ASTM D 698) and at least 3 percentage points above the mixture's optimum moisture content. In all areas where hydrated lime is used to stabilize subgrade soil, routine Atterberg-limit tests should be performed to verify the resulting plasticity index of the soil-lime mixture is at/or below 15.

Please note, the on-site soils can contain a sufficient quantity of soluble sulfates that can adversely react with hydrated lime added during the mechanical lime stabilization process. Therefore, before committing to mechanical lime stabilization, samples of the pavement subgrade soil should be tested for the quantity of soluble sulfates. Our office should be contacted regarding evaluation of the quantity of soluble sulfates detected and any special processing/design features that may be applicable due to the soluble sulfate concentrations measured.

It is recommended that pavement subgrade stabilization procedures extend at least 1 ft beyond the edge of the pavement to reduce effects of seasonal shrinking and swelling upon the extreme edges of pavement.

Lime stabilization of the pavement subgrade soil will not prevent normal seasonal movement of the underlying untreated materials. Pavement and other flatwork will have the same potential for movement as slabs constructed directly on the existing undisturbed soils. Therefore, good perimeter surface drainage with a minimum slope of 2 percent away from the pavement is recommended. The use of sand as a leveling course below pavement supported on expansive clays should be avoided. Normal maintenance of pavement should be expected over the life of the structures.

6.12.2 Portland Cement Concrete (PCC) Pavement

Following subgrade improvement as recommended in Section 6.12.1 above, the following PCC (reinforced) pavement sections are recommended.

TABLE I
RECOMMENDED PCC PAVEMENT SECTIONS

Paving Areas and/or Type	PCC Thickness, Inches
**Parking Areas Subjected Exclusively to Passenger Vehicle Traffic	5
Drive Lanes, Fire Lanes, Areas Subject to Light Volume Truck Traffic	6
Dumpster Traffic Areas	7

****Note:** Lime treatment of the pavement subgrade is not necessary for pavements subjected *exclusively* to passenger vehicle traffic, although lime treatment in these areas would be generally beneficial to the long-term performance of the pavement and improve constructability. Prior to construction of pavement on untreated clay subgrade soil, the exposed subgrade should be scarified to a depth of at least 6 inches and compacted to at least 95 percent of standard Proctor maximum dry density (ASTM D 698) and within the range of 1 percentage point below to 3 percentage points above the material's optimum moisture content.

Portland-cement concrete should have a minimum compressive strength of 3,000 lbs per sq inch (psi) at 28 days in parking areas subjected exclusively to passenger vehicle traffic. We recommend a minimum compressive strength of 3,500 per sq inch (psi) at 28 days for the street, drive lanes, fire lanes, and truck areas. Concrete should be designed with 5 $\pm$ 1 percent entrained air. Joints in concrete paving should not exceed 15 ft. Reinforcing steel should consist of No. 3 bars placed at 18 inches on-center in two directions.

Alternately, mechanical lime stabilization of the pavement subgrade could be eliminated by increasing the PCC thickness in the pavement sections presented above by 1 inch. Prior to construction of pavement on untreated clay subgrade soil, the exposed subgrade should be scarified to a depth of at least 6 inches and compacted to at least 95 percent of standard Proctor maximum dry density (ASTM D 698) and within the range of 1 percentage point below to 3 percentage points above the material's optimum moisture content.

6.13 Drainage and Other Considerations

Adequate drainage should be provided to reduce seasonal variations in the moisture content of foundation soils. All pavement and sidewalks within 5 ft of the structures should be sloped away from the buildings to prevent ponding of water around the foundations. Final grades within 5 ft of the structures should be adjusted to slope away from the structures at a minimum slope of 2 percent. **Maintaining positive surface drainage throughout the life of the structures is essential.**

In areas with pavement or sidewalks adjacent to the new structures, a positive seal must be maintained between the structure and the pavement or sidewalk to minimize seepage of water into the underlying supporting soils. Post-construction movement of pavement and flat-work is common. Normal maintenance should include examination of all joints in paving and sidewalks, etc. as well as re-sealing where necessary.

Several factors relate to civil and architectural design and/or maintenance, which can significantly affect future movements of the foundation and floor slab system:

1. Preferably, a complete system of gutters and downspouts should carry runoff water a minimum of 5 ft from the completed structures.

2. Large trees and shrubs should not be allowed closer to the foundations than a horizontal distance equal to roughly one-half of their mature height due to their significant moisture demand upon maturing.

3. Moisture conditions should be maintained “constant” around the edge of the slabs. Ponding of water in planters, in unpaved areas, and around joints in paving and sidewalks can cause slab movements beyond those predicted in this report.

4. Planter box structures placed adjacent to buildings should be provided with a means to assure concentrations of water are not available to the subsoil stratigraphy.

5. Architectural design of the floor slabs should avoid additional features such as wing walls as extensions of the slabs.

6. The root systems from existing or recently removed trees at this site will have dried and desiccated the surrounding clay soils, resulting in soil with near-maximum swell potential. Clay soils surrounding tree root mats in building pad and flatwork areas (including but not limited to sidewalks, driveways and patios) should be removed to a minimum depth of 3 ft and compacted in-place with moisture and density control as described in Section 7.3 of this report, below.

Trench backfill for utilities should be properly placed and compacted as outlined in Section 7.3 of this report and in accordance with requirements of local City standards. Since granular bedding backfill is used for most utility lines, the backfilled trench should not become a conduit and allow access for surface or subsurface water to travel toward the new structures. Concrete cut-off collars or clay plugs should be provided where utility lines cross building lines to prevent water from traveling in the trench backfill and entering beneath the structures.

7.0 GENERAL CONSTRUCTION PROCEDURES AND RECOMMENDATIONS

Variations in subsurface conditions could be encountered during construction. To permit correlation between test boring data and actual subsurface conditions encountered during construction, it is recommended a registered Professional Engineering firm be retained to observe construction procedures and materials.

Some construction problems, particularly degree or magnitude, cannot be anticipated until the course of construction. The recommendations offered in the following paragraphs are intended not to limit or preclude other conceivable solutions, but rather to provide our observations based on our experience and understanding of the project characteristics and subsurface conditions encountered in the borings.

7.1 Site Preparation and Grading

All areas supporting floor slabs, slab foundations, pavement, flatwork, or areas to receive new fill should be properly prepared.

After completion of the necessary stripping, clearing, and excavating and prior to placing any required fill, the exposed soil subgrade should be carefully evaluated by probing and testing. Any undesirable material (organic material, wet, soft, or loose soil) still in place should be removed.

The exposed soil subgrade should be further evaluated by proof-rolling with a heavy pneumatic tired roller, loaded dump truck or similar equipment weighing approximately 20 tons to check for pockets of soft or loose material hidden beneath a thin crust of possibly better soil.

Proof-rolling procedures should be observed routinely by a Professional Engineer, or his designated representative. Any undesirable material (organic material, wet, soft, or loose soil) exposed during the proofroll should be removed and replaced with well-compacted material as outlined in Section 7.3.

Prior to placement of any fill, the exposed soil subgrade should then be scarified to a minimum depth of 6 inches and recompacted as outlined in Section 7.3.

If fill is to be placed on existing slopes (natural or constructed) steeper than six horizontal to one vertical (6:1), the fill materials should be benched into the existing slopes in such a manner as to provide a minimum bench-key width of five (5) ft. This should provide a good contact between the existing soils and new fill materials, reduce potential sliding planes, and allow relatively horizontal lift placements.

Slope stability analysis of embankments (natural or constructed) was not within the scope of this study.

The contractor is responsible for designing any excavation slopes, temporary sheeting or shoring. Design of these structures should include any imposed surface surcharges.

Construction site safety is the sole responsibility of the contractor, who shall also be solely responsible for the means, methods and sequencing of construction operations. The contractor should also be aware that slope height, slope inclination or excavation depths (including utility trench excavations) should in no case exceed those specified in local, state and/or federal safety regulations, such as OSHA Health and Safety Standard for Excavations, 29 CFR Part 1926, or successor regulations. Stockpiles should be placed well away from the edge of the excavation and their heights should be controlled so they do not surcharge the sides of the excavation. Surface drainage should be carefully controlled to prevent flow of water over the slopes and/or into the excavations. Construction slopes should be closely observed for signs of mass movement, including tension cracks near the crest or bulging at the toe. If potential stability problems are observed, a geotechnical engineer should be contacted immediately. Shoring, bracing or underpinning required for the project (if any) should be designed by a professional engineer registered in the State of Texas.

Due to the nature of the clayey soils found near the surface at the borings, traffic of heavy equipment (including heavy compaction equipment) may create pumping and general deterioration of shallow soils. Therefore, some construction difficulties should be anticipated during periods when these soils are saturated.

7.2 Foundation Excavations

All foundation excavations should be monitored to verify foundations bear on suitable material. The bearing stratum exposed in the base of all foundation excavations should be protected against any detrimental change in conditions. Surface runoff water should be drained away from excavations and not allowed to collect. All concrete for foundations should be placed as soon as practical after the excavation is made. Drilled piers should be excavated and concrete placed the same day.

Prolonged exposure of the bearing surface to air or water will result in changes in strength and compressibility of the bearing stratum. Therefore, if delays occur, straight shaft drilled piers should be slightly widened and deepened to provide a fresh penetration surface, or a new (deeper) full penetration should be provided. Grade beam excavations for slab foundations should be slightly deepened and cleaned, in order to provide a fresh bearing surface.

All pier shafts should have a diameter of at least $1/30^{th}$ of the shaft length or 1.5 ft, whichever is greater, to facilitate clean-out of the base and proper monitoring. Concrete placed in pier holes should be directed through a tremie, hopper, or equivalent. Placement of concrete should be vertical through the center of the shaft without hitting the sides of the pier or reinforcement to reduce the possibility of segregation of aggregates. Concrete placed in piers should have a minimum slump of 5 inches (but not greater than 7 inches) to avoid potential honey-combing.

Observations during pier drilling should include, but not necessarily be limited to, the following items:

Verification of proper bearing strata and consistency of subsurface stratification with regard to boring logs,

Confirmation the minimum required penetration into the bearing strata is achieved,

Complete removal of cuttings from bottom of pier holes,

Proper handling of any observed water seepage and sloughing of subsurface materials,

No more than 2 inches of standing water should be permitted in the bottom of pier holes prior to placing concrete, and

Verification of pier diameter, and steel reinforcement.

Groundwater was noted at depths of about 13 to 68 ft in Borings 1 through 6 and 22 immediately upon completion of drilling. From our experience, groundwater seepage could also be encountered at shallow depths at the site during pier installation, and the risk of encountering seepage is increased during or after periods of precipitation. Submersible pumps, bailing tools, and/or temporary casing may be required to control groundwater seepage encountered during the pier drilling. The casing should be properly seated into clay or shale below the depth of seepage and groundwater should be removed prior to beginning the design penetration. As casing is extracted, care should be taken to maintain a positive head of plastic concrete and minimize the potential for intrusion of sloughing of fill soils. It is recommended a separate bid item be provided for casing on the contractor's bid schedule. Pier drilling contractors experienced in similar soil and groundwater conditions should be utilized for this project.

Groundwater can also occur within fractures in the bearing stratum and this may require extending the casing and deepening the piers. From our experience with similar soil and rock conditions, sometimes groundwater cannot be controlled by the use of casing, and underwater placement of pier concrete may be required. Special mix designs are usually required for tremied or pumped concrete. Proper concreting procedures should include placement of concrete from the bottom to the top of the pier using a sealed tremie or pumped concrete. The tremie should be maintained at least 5 ft into the wet concrete during placement. It is recommended a separate bid item be provided for casing and underwater concrete placement on the contractor's bid schedule. Pier drilling contractors experienced in similar soil and groundwater conditions should be utilized for this project.

Although not encountered at the borings, fill materials can contain debris which can cause obstruction to pier installation. The pier installation contract should contain provisions for penetration or removal of obstructions.

Hard limestone seams and layers were encountered at various depths within the gray shale bearing stratum for drilled piers. *Further, hard limestone layers were encountered at varying depths during pier installation for structures in other phases of development.*

These limestone layers within the shale are often discontinuous and can occur randomly with depth. Some of these materials are very hard and could cause obstruction to pier installation. Rock teeth and/or core barrels may be required during excavation for drilled pier foundations. The drilled pier contract should contain provision for the penetration or removal of obstructions.

7.3 Fill Compaction

Select, Non-Expansive Fill: Materials used as select, non-expansive fill should have a liquid limit less than 35, a plasticity index (PI) not less than 5 nor greater than 15. All select, non-expansive fill should contain no deleterious material and should be compacted to a dry density of at least 98 percent standard Proctor maximum dry density (ASTM D 698) and within the range of 1 percentage point below to 3 percentage points above the material's optimum moisture content. (Note: The plasticity index and liquid limit of material used as select, non-expansive fill should be verified during fill placement using laboratory tests. Visual observation and classification should not be relied upon to confirm the material to be used as select, non-expansive fill satisfies the above Atterberg-limit criteria.).

Flexible Base Material: Flexible Base material used as non-expansive fill for the building pad area should meet the requirements of TxDOT Item 247, Type A, Grade 1 or 2. Processed concrete meeting TxDOT Item 247, Grade 1 or 2, Type D is also acceptable for as non-expansive material. The material should be compacted to a minimum 95 percent of standard Proctor maximum dry density (ASTM D 698) and within 3 percentage points of the material's optimum moisture content.

The following recommendations pertain to fill soils placed for general site grading as follows:

- *Outside* the designated building pad areas *if* moisture conditioning will be used as the method for subgrade improvement. Where moisture conditioning is utilized for subgrade improvement, all fill within the designated building pad areas, plus at least 5 ft outside the limits of the building pad areas, should meet the requirements of Section 6.3 discussed earlier.
- For general grading *including* building areas *if* water pressure injection will be used as the method for subgrade improvement.

Clay and shaly clay soils with a plasticity index equal to or greater than 25 should be compacted to a dry density between 93 and 98 percent of standard Proctor maximum dry density (ASTM D 698). The compacted moisture content of the clays during placement should be within the range of 2 to 6 percentage points above optimum.

Clay fill should be processed and the largest particle or clod should be less than 6 inches prior to compaction.

Compaction should be accomplished by placing fill in about 8-inch thick loose lifts and compacting each lift to at least the specified minimum dry density. Field density and moisture content tests should be performed on each lift.

In cases where either mass fills or utility lines are more than 10 ft deep, the fill/backfill below 10 ft should be compacted to at least 98 percent of standard Proctor maximum dry density (ASTM D-698) and within 2 percentage points of the material's optimum moisture content. The portion of the fill/backfill shallower than 10 ft should be compacted as outlined above.

Even if fill is properly compacted, fills in excess of about 10 ft are still subject to settlements over time of up to about 1 to 2 percent of the total fill thickness. This should be considered when designing utility lines under pavements and/or wall backfill.

7.4 Groundwater

Groundwater was encountered in Borings 1 through 6 and 22 at depths of about 13 to 68 ft below the existing ground surface immediately following completion of drilling. From our experience with similar soils, groundwater seepage could be encountered in excavations for grade beams, foundations, utility conduits and other general excavations. The risk of encountering seepage increases with depth of excavation and during or after periods of precipitation. Standard sump pits and pumping may be adequate to control minor seepage on a local basis.

In any areas where cuts made to establish final grades, attention should be given to possible seasonal water seepage that could occur through natural cracks and fissures in the newly exposed stratigraphy. In these areas subsurface drains may be required to intercept seasonal groundwater seepage. The need for these or other dewatering devices should be carefully addressed during construction. Our office could be contacted to visually observe final grades to evaluate the need for such drains.

8.0 LIMITATIONS

Professional services provided in this geotechnical exploration were performed, findings obtained, and recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. The scope of services provided herein does not include an environmental assessment of the site or investigation for the presence or absence of hazardous materials in the soil, surface water or groundwater. ALPHA, upon written request, can be retained to provide these services.

ALPHA TESTING, INC. is not responsible for conclusions, opinions or recommendations made by others based on this data. Information contained in this report is intended for the exclusive use of the Client (and their designated design representatives), and is related solely to design of the specific structures outlined in Section 2.0. No party other than the Client (and their designated design representatives) shall use or rely upon this report in any manner whatsoever unless such party shall have obtained ALPHA's written acceptance of such intended use. Any such third party using this report after obtaining ALPHA's written acceptance shall be bound by the limitations and limitations of liability contained herein, including ALPHA's liability being limited to the fee paid to it for this report. Recommendations presented in this report should not be used for design of any other structures except those specifically described in this report. In all areas of this report in which ALPHA may provide additional services if requested to do so in writing, it is presumed that such requests have not been made if not evidenced by a written document accepted by ALPHA. Further, subsurface conditions can change with passage of time. Recommendations contained herein are not considered applicable for an extended period of time after the completion date of this report. It is recommended our office be contacted for a review of the contents of this report for construction commencing more than one (1) year after completion of this report. Non-compliance with any of these requirements by the Client or anyone else shall release ALPHA from any liability resulting from the use of, or reliance upon, this report.

Recommendations provided in this report are based on our understanding of information provided by the Client about characteristics of the project. If the Client notes any deviation from the facts about project characteristics, our office should be contacted immediately since this may materially alter the recommendations. Further, ALPHA TESTING, INC. is not responsible for damages resulting from workmanship of designers or contractors. It is recommended the Owner retain qualified personnel, such as a Geotechnical Engineering firm, to verify construction is performed in accordance with plans and specifications.

APPENDIX

SOIL MODIFICATION
WATER PRESSURE INJECTION (WPI)
GUIDELINE SPECIFICATIONS

Purpose

The purpose of this specification is to provide a procedural basis for using water pressure injection as a method to obtain a relatively uniform, moist, pre-swelled zone of soil beneath the floor slab. Specifically, the intent of this procedure is to reduce the average free swell potential of soils within the injected zone to 1 percent or less.

Material

1. Only potable water shall be used during the entire injection process.

2. A non-ionic surfactant (wetting agent) will be added to the water according to manufacturer's recommendations, but, in no case will proportions be less than one part (undiluted) per 3,500 gallons of water.

Application

1. The water pressure injection work shall be accomplished after the site has been brought to near final subgrade elevation and prior to installation of any plumbing, trenches and utilities.

2. The injection vehicle will have a minimum gross weight of 5 tons and shall be capable of making straight vertical penetrations to minimize pressure loss around the injector rods to at least 10 ft.

3. Injections will be continued to "REFUSAL" (until the maximum reasonable quantity of water has been injected into the soil and water is flowing freely at the surface, either out of previous injection holes or from areas where the surface soils have fractured. The amount of water flowing from the areas described above will be approximately equivalent to the volume of water being pumped into the soil. As a minimum, injections should be at least 30 seconds at each injection interval unless altered by the Geotechnical Engineer).
   Note: Loss of water or blow-back around injector pipes does not constitute refusal. Continued loss of water in this manner may indicate inadequate injection equipment or techniques, or in some instances, surficial soils that will not form an adequate seal to contain the water. In either instance, the owner's representative should be contacted and an on-site observation made to determine appropriate steps to achieve adequate injection.

   After completion of water injection, the injection contractor will submit records which reflect the total quantity of water used. The injection contractor will be totally responsible for determining the means and methods of injecting the on-site soils such that the average free swell of soils within the injected zone does not exceed 1 percent.

4. Injection pipe(s) will penetrate the soil in approximately 12 to 18-inch intervals, injecting to refusal at each interval for a total depth of 10 ft or impenetrable material, whichever occurs first. If a seemingly impenetrable layer is encountered, ALPHA TESTING, INC. must be contacted to evaluate the significance of the lack of penetration with the injector tubes or provide alternate recommendations. A minimum of seven (7) injection intervals will be provided for the 10-ft injection depth. The lower portion of the injection pipe will consist of a hole pattern that will uniformly disperse water throughout the entire depth.

5. Spacing for the injections will not exceed 5 feet on-center each way. Subsequent injections will be offset laterally at one-half the distance in both directions between the original injection centers.

6. Injection pressures should be adjusted to inject the greatest quantity of water possible within a pressure range of 50 - 200 psi pump pressure.

7. After a minimum curing time of 48 hours, the water injected pad shall be tested for moisture content and swell abatement to determine if additional injections with water are necessary. Subsequent water injections will be 5 feet on-center each way and spaced 2½ feet offset in two orthogonal directions from the initial injection.

8. Upon completion of the final water pressure injection, the top surface of the injected pad should be scarified to a depth of at least 6 inches and re-compacted to between 93 and 98 percent of the optimum density, at a moisture content between 2 and 4 percentage points above the optimum values, as defined by ASTM D-698. Compaction tests should be performed at a frequency of 1 test per 5,000 sq ft with a minimum of three (3) tests per pad.

9. The moisture content of the injected soils will be maintained until the floor slab is placed. Loss of moisture from the surface or sides of the building pad must be prevented by watering or use of a membrane. Any open trenches should be sealed or kept wet to prevent loss of moisture. All trenches should be backfilled with the excavated material. The moisture content of the backfill should be maintained in the range of 2 to 4 percentage points above optimum.

Special Considerations

Several water injections may be required to achieve the desired final moisture content and corresponding soil swell abatement. Due to variations in the subsurface soils, the number of injection passes required to reduce the swell potential of the injected soils to 1 percent or less is unknown. Hence, the Client should allow for extra construction time on the site considering the time frame required to achieve the desired reduction in swell potential is unknown. Further, the contract with the Injection Contractor should address the situation where more injection passes than predicted are required to achieve the desired result.

Between the time the subgrade is water pressure injected and either the select fill material or plastic sheeting is placed, the upper surface of the injected soil should not be allowed to dry. To allow for adequate pre-swelling of the soils from the injection procedure, concrete for slabs should not be placed above injected areas until at least two (2) weeks following the final water injection. During this two-week period, the surface of the injected soil must be kept moist or covered with plastic sheeting to prevent moisture loss. About 3 to 4 inches or more of heave can be expected in building pad during and shortly after completion of the injection process.

Additionally, experience indicates injection adjacent to existing structures supported at or near the existing ground surface (such as, but not limited to, buildings, roads, and utility conduits) can result in swelling of soil in the injected zone as well as those beneath existing nearby structures. Swelling of soil supporting existing floor slabs can result in distress (movement) to existing buildings. Therefore, if an existing building or other structure is located within 30 ft of the proposed water injection area, it is recommended a temporary vertical moisture barrier be installed longitudinally between the existing structure and the injected pad to prevent injected water from entering the subgrade of the existing structure. The moisture barrier could consist of a 12 ft deep trench, about 1 ft wide, backfilled with lean concrete or other suitable relatively impermeable material.

Monitoring

A full-time ALPHA TESTING, INC. technician should be retained and present throughout the injection operations. Moisture content and free swell samples should be taken at 1-foot intervals to the total depth injected from a minimum of one test boring per each 4,000 sq feet of injected area (minimum two borings per pad). The moisture content and shear strength (using a pocket-penetrometer) will be determined for each sample. One-dimension free swell tests (ASTM D 4546-85 Method B) will be performed on selected samples at a frequency of at least two three (3) free swell tests per test boring for the 10 ft injection depth. The free swell tests will be performed with a surcharge equal to the overburden pressure anticipated upon completion of the new structure. Based upon the test results, the current swell potential of the injected soils should be determined by the project Geotechnical Engineer. Acceptance criteria for water pressure injection will be based upon achieving the potential movements indicated in the Geotechnical Exploration. As a guide, an average free swell of 1 percent or less in the injected zone could be used for planning. However, due to variations in the soils across the site, an average free swell of more than 1 percent may be allowable in some areas. Acceptance of soils with average free swells of more than 1 percent should be evaluated by ALPHA TESTING, INC. Depending upon the moisture content and the potential swell remaining in the existing injected soils, additional injections with water containing surfactant may be required until these requirements are met.

Wet and soft surface conditions resulting from the water injection procedures will require the contractor to provide access to drilling equipment used to obtain the soil samples which verify the injection process. Special track equipment may be required to provide the required access. The contractor will be responsible for providing and operating suitable equipment to permit sampling of the injected soils (test borings) with a standard truck-mounted drilling rig.

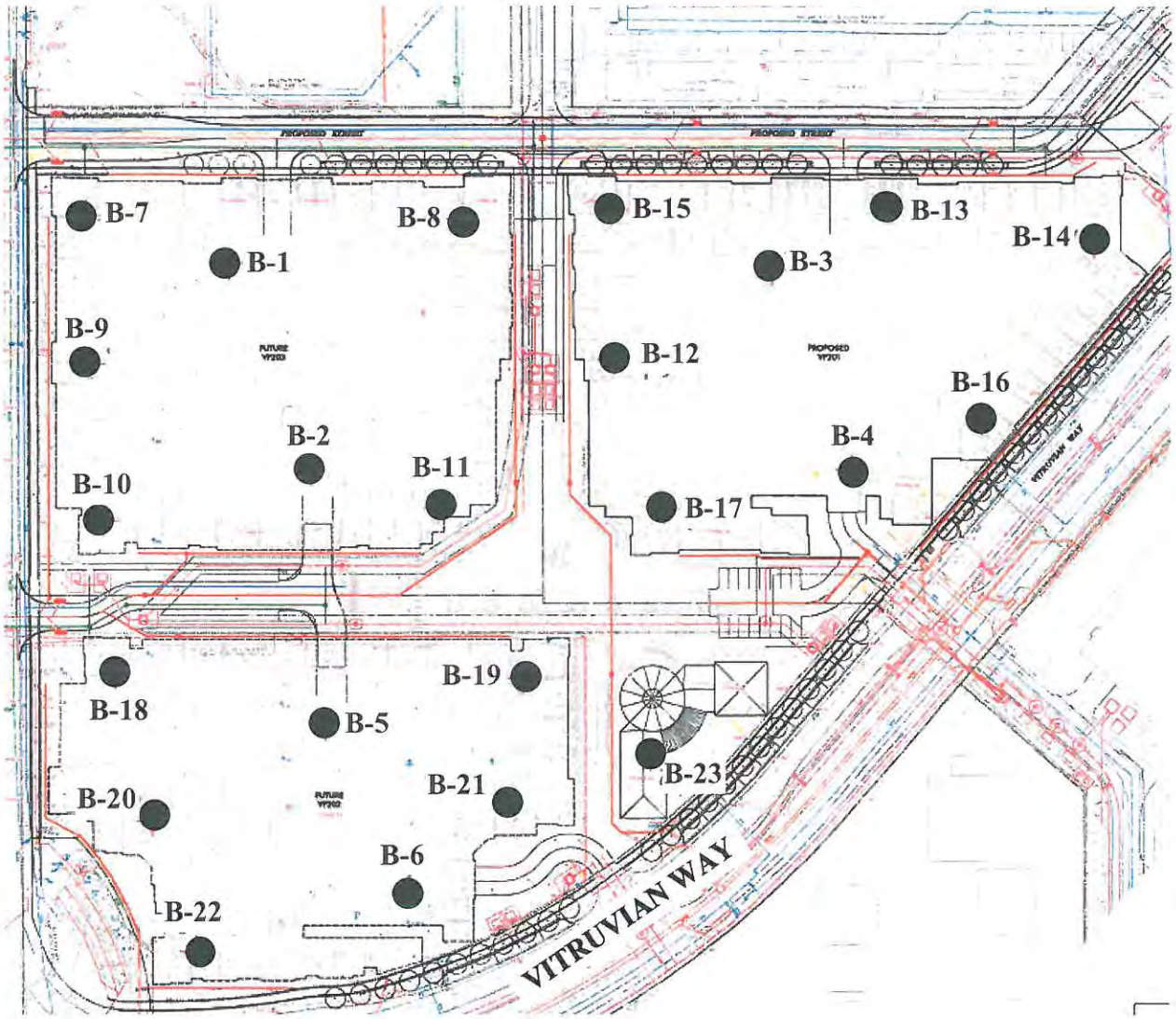
A-1 METHODS OF FIELD EXPLORATION

Using standard rotary drilling equipment, a total of twenty-three (23) test borings were performed for this geotechnical exploration at the approximate locations shown on the Boring Location Plan, Figure 1. The test boring locations were located by using a handheld GPS device or by pacing or taping and estimating right angles from landmarks which could be identified in the field and as shown on the site plan provided during this study. The locations of the test borings shown on the Boring Location Plan are considered accurate only to the degree implied by the method used to locate the borings.

Relatively undisturbed samples of the cohesive subsurface materials were obtained by hydraulically pressing 3-inch O.D. thin-wall sampling tubes into the underlying soils at selected depths (ASTM D 1587). These samples were removed from the sampling tubes in the field and examined visually. One representative portion of each sample was sealed in a plastic bag for use in future visual examinations and possible testing in the laboratory.

Texas Cone Penetration (TCP) tests were used to assess the apparent in-place strength characteristics of the materials encountered at the borings. The tests were conducted in accordance with TxDOT Test Method TEX 132-E. A 3-inch diameter steel cone driven by a 170-pound hammer dropped 24 inches is the basis for Texas Department of Transportation (TxDOT) strength correlations. Depending on the resistance (strength) of the materials, either the number of blows of the hammer required to provide 12 inches of penetration, or the inches of penetration of the cone due to 100 blows of the hammer are recorded on the field logs and are shown on the Drilling Logs.

Logs of all borings are included in the Appendix of this report. The logs show visual descriptions of subsurface strata encountered using the Unified Soil Classification System. Sampling information, pertinent field data, and field observations are also included. Samples not consumed by testing will be retained in our laboratory for at least 14 days and then discarded unless the Client requests otherwise.



● **Approximate Boring Locations**

Geotechnical Exploration Vitruvian Park - Buildings 201, 202 and 203 Off Vitruvian Way Addison, Texas Alpha Project No. G152235	ALPHA TESTING WHERE IT ALL BEGINS	Boring Location Plan Figure 1

B-1 METHODS OF LABORATORY TESTING

Representative samples were examined and classified by a qualified member of the Geotechnical Division and the boring logs were edited as necessary. To aid in classifying the subsurface materials and to determine the general engineering characteristics, natural moisture content tests (ASTM D 2216), Atterberg-limit tests (ASTM D 4318), and dry unit weight determinations were performed on selected samples. In addition, unconfined compression tests (ASTM D 2166) and pocket-penetrometer tests were conducted on selected soil samples to evaluate soil shear strength. Results of all laboratory tests described above are provided on the accompanying Log of Boring sheets.

In addition to the Atterberg-limit tests, the expansive properties of the clay soils were further analyzed by absorption swell tests. The swell test is performed by placing a selected sample in a consolidation machine and applying either the approximate current or expected overburden pressure and then allowing the sample to absorb water. When the sample exhibits very little tendency for further expansion, the height increase is recorded and the percent free swell and total moisture gain calculated. Results of the absorption swell test are provided on the Swell Test Data sheet, Figure 2 included in this appendix.

SWELL TEST DATA

Boring No.	1	2	3	4	5
Average Depth, ft	14	14	9	14	14
Dry Unit Weight, pcf	106	105	98	89	102
Liquid Limit	66	69	71	79	67
Plastic Limit	22	23	24	30	23
Plasticity Index	44	46	47	49	44
Initial Moisture Content	18%	23%	26%	34%	25%
Final Moisture Content	24%	26%	29%	37%	27%
Free Swell	0.8%	1.5%	0.0%	0.0%	0.3%

Boring No.	6	7	8	10	12
Average Depth, ft	9	9	3	5	7
Dry Unit Weight, pcf	107	103	110	97	103
Liquid Limit	41	76	72	70	76
Plastic Limit	17	26	24	24	25
Plasticity Index	24	50	48	46	51
Initial Moisture Content	20%	21%	20%	26%	25%
Final Moisture Content	23%	24%	25%	30%	28%
Free Swell	0.0%	0%	4.4%	0%	1.5%

Boring No.					
Average Depth, ft	13	15	16	17	18
Dry Unit Weight, pcf	5	9	5	14	3
Liquid Limit	92	100	110	86	103
Plastic Limit	62	66	73	89	70
Plasticity Index	21	22	26	28	24
Initial Moisture Content	41	44	47	61	46
Final Moisture Content	26%	26%	19%	39%	23%
Free Swell	29%	29%	23%	39%	29%
	0%	1.5%	2.8%	0%	4.7%

Boring No.	19	20	21	22	23
Average Depth, ft	7	3	5	9	3
Dry Unit Weight, pcf	102	98	95	108	99
Liquid Limit	35	70	79	56	71
Plastic Limit	18	24	24	21	25
Plasticity Index	17	46	55	35	46
Initial Moisture Content	19%	27%	25%	21%	24%
Final Moisture Content	24%	30%	32%	24%	32%
Free Swell	0%	0.8%	1.6%	0.7%	3.7%

Geotechnical Exploration
Vitruvian Park - Buildings 201, 202 and 203
Off Vitruvian Way
Addison, Texas
Alpha Project No. G152235



Swell Test Data
Figure 2

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75229
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LOG OF BORING NO.: 1

PROJECT NO.: G152235

Client: DCO Realty, Inc.
Project: Vitruvian Park - Buildings 201, 202 and 203
Start Date: 10/6/2015 **End Date:** 10/6/2015
Drilling Method: CONTINUOUS FLIGHT AUGER

Location: Addison, Texas
Surface Elevation:
West:
North:
Hammer Drop (lbs / in): 170 / 24

GROUND WATER OBSERVATIONS
▽ On Rods (ft): 15
▼ After Drilling (ft): Dry
▼ After ____ Hours (ft):

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Sample Type	Recovery % RQD	TX Cone or Std. Pen. (blows/ft,in)	Pocket Penetrometer (tsf)	Unconfined Comp. Strength (tsf)	% Passing No. 200 Sieve	Unit Dry Weight (pcf)	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
5		Dark Brown CLAY				2.0 2.5 3.0				 29 28			
		6.0											
10		Tan and Gray CLAY				3.0 4.0				31 33			
		13.0											
15		▽ Tan and Gray SHALY CLAY				4.5+				24	66	22	44
20		-gray below 18'				4.5+				18			
		22.0											
25		Gray CLAY SHALE			100/ 7.5"								
		29.0											
30		Gray SHALE with limestone seams			100/ 6"								
35					100/ 6"								
40					100/ 3.5"								
45					100/ 4"								
50					100/ 5.5"								
55					100/ 3"								
60					100/ 6"								
65					100/ 5"								
70		70.0			100/ 2.5"								
		TEST BORING TERMINATED AT 70 FT											
75													

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LOG OF BORING NO.: 2

PROJECT NO.: G152235

Client: DCO Realty, Inc.
Project: Vitruvian Park - Buildings 201, 202 and 203
Start Date: 10/6/2015 **End Date:** 10/6/2015
Drilling Method: CONTINUOUS FLIGHT AUGER

Location: Addison, Texas
Surface Elevation:
West:
North:
Hammer Drop (lbs / in): 170 / 24

GROUND WATER OBSERVATIONS
▽ On Rods (ft): 30
▼ After Drilling (ft): 68
▽▼ After ____ Hours (ft):

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Sample Type	Recovery % RQD	TX Cone or Std. Pen. (blows/ft,in)	Pocket Penetrometer (tsf)	Unconfined Comp. Strength (tsf)	% Passing No. 200 Sieve	Unit Dry Weight (pcf)	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
5		Dark Brown and Gray CLAY with traces of fragments-FILL				3.5 3.5				29			
		5.0											
10		Tan and Gray CLAY				2.0 2.0 2.5				33 33 34			
		13.0											
15		Tan and Gray SHALY CLAY				4.5+				25	69	23	46
20		-gray below 18'				4.5+				25			
		23.0											
25		Gray CLAY SHALE			100/ 8"								
30	▽				100/ 8"								
		34.0											
35		Gray SHALE with limestone seams -limestone seams at 35'			100/ 6"								
40					100/ 4"								
45					100/ 5"								
50					100/ 5.5"								
55					100/ 4.75"								
60					100/ 4"								
65					100/ 4"								
70	▼				100/ 3.5"								
		70.0											
		TEST BORING TERMINATED AT 70 FT											
75													

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LOG OF BORING NO.: 3

Sheet 1 of 1

PROJECT NO.: G152235

Client: DCO Realty, Inc.
Project: Vitruvian Park - Buildings 201, 202 and 203
Start Date: 10/2/2015 **End Date:** 10/2/2015
Drilling Method: CONTINUOUS FLIGHT AUGER

Location: Addison, Texas
Surface Elevation:
West:
North:
Hammer Drop (lbs / in): 170 / 24

GROUND WATER OBSERVATIONS
▽ On Rods (ft): 15
▼ After Drilling (ft): 68
▽▼ After ____ Hours (ft):

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Sample Type	Recovery % RQD	TX Cone or Std. Pen. (blows/ft,in)	Pocket Penetrometer (tsf)	Unconfined Comp. Strength (tsf)	% Passing No. 200 Sieve	Unit Dry Weight (pcf)	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0		Dark Brown CLAY				4.5+							
						4.5+				21			
5						4.5+				21			
		-brown below 6'				4.25				25			
		8.0											
10		Tan and Gray CLAY				3.5				28	71	24	47
		13.0											
15		▽ Tan and Gray SHALY CLAY				4.0				27			
		-gray below 18'				4.5+				21			
20		21.0											
		Gray CLAY SHALE											
25		-3" thick limestone seams at 24'			99/ 10.5"								
30					100/ 10"								
		34.0											
35		Gray SHALE with limestone seams and layers			100/ 5.5"								
40					100/ 5.5"								
45					100/ 4.75"								
		-1' thick limestone layer at 47'											
50					100/ 4.5"								
55					100/ 5.25"								
60					100/ 4.5"								
65		-1.5' thick limestone layers at 64.5'			100/ 3.5"								
		▼											
70		70.0			100/ 6"								
		TEST BORING TERMINATED AT 70 FT											
75													

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LOG OF BORING NO.: 4

PROJECT NO.: G152235

Client: DCO Realty, Inc.
Project: Vitruvian Park - Buildings 201, 202 and 203
Start Date: 10/2/2015 **End Date:** 10/2/2015
Drilling Method: CONTINUOUS FLIGHT AUGER

Location: Addison, Texas
Surface Elevation:
West:
North:
Hammer Drop (lbs / in): 170 / 24

GROUND WATER OBSERVATIONS
▽ On Rods (ft): 21
▼ After Drilling (ft): Dry
▼ After ____ Hours (ft):

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Sample Type	Recovery % RQD	TX Cone or Std. Pen. (blows/ft,in)	Pocket Penetrometer (tsf)	Unconfined Comp. Strength (tsf)	% Passing No. 200 Sieve	Unit Dry Weight (pcf)	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
		Brown CLAY with sand and gravel-FILL 2.0				4.5+							
		Dark Brown CLAY				4.5+				21			
5		6.0				4.5+				25			
		Tan and Gray CLAY				3.5				21			
10						4.0				31			
		13.0											
		Tan and Gray SHALY CLAY				4.5+				32	79	30	49
15													
		-gray below 18'											
20		20.0				4.5+				15			
		▽ Gray SHALE											
25					100/ 5.75"								
30					100/ 5								
35					100/ 5								
40					100/ 6"								
45					100/ 4.75"								
50					100/ 5.25"								
55					100/ 3.5"								
60		-3" thick layer limestone seam			100/ 3.5"								
65					100/ 4.25"								
70		70.0			100/ 4.5"								
		TEST BORING TERMINATED AT 70 FT											
75													

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LOG OF BORING NO.: 5

Sheet 1 of 1

PROJECT NO.: G152235

Client: DCO Realty, Inc.
Project: Vitruvian Park - Buildings 201, 202 and 203
Start Date: 10/5/2015 **End Date:** 10/5/2015
Drilling Method: CONTINUOUS FLIGHT AUGER

Location: Addison, Texas
Surface Elevation:
West:
North:
Hammer Drop (lbs / in): 170 / 24

GROUND WATER OBSERVATIONS
▽ On Rods (ft): 40
▼ After Drilling (ft): 68
▼ After ____ Hours (ft):

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Sample Type	Recovery % RQD	TX Cone or Std. Pen. (blows/ft,in)	Pocket Penetrometer (tsf)	Unconfined Comp. Strength (tsf)	% Passing No. 200 Sieve	Unit Dry Weight (pcf)	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0		Dark Brown CLAY				3.5							
						2.5				29			
5						4.5+				25			
		-brown below 6'				4.5+				28			
		8.0											
10		Tan and Gray CLAY				3.5				31			
		13.0											
15		Tan and Gray SHALY CLAY				4.0				21	67	23	44
20						4.5+				24			
		22.0											
25		Gray SHALY CLAY				4.5+				19			
		26.0											
		Gray SHALE with limestone seams			100/ 5"								
30													
					100/ 5"								
35													
		▽			100/ 6"								
40													
					100/ 5"								
45													
		-8" thick limestone seam at 48'			100/ 4"								
50													
					100/ 5"								
55													
					100/ 4.5"								
60													
					100/ 4"								
65													
		▼											
70		-7" thick limestone seam at 68'			100/ 3.5"								
		70.0											
		TEST BORING TERMINATED AT 70 FT											
75													

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LOG OF BORING NO.: 6

PROJECT NO.: G152235

Client: DCO Realty, Inc.
Project: Vitruvian Park - Buildings 201, 202 and 203
Start Date: 10/5/2015 **End Date:** 10/5/2015
Drilling Method: CONTINUOUS FLIGHT AUGER

Location: Addison, Texas
Surface Elevation:
West:
North:
Hammer Drop (lbs / in): 170 / 24

GROUND WATER OBSERVATIONS
▽ On Rods (ft): 20
▼ After Drilling (ft): 36
▼ After ____ Hours (ft):

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Sample Type	Recovery % RQD	TX Cone or Std. Pen. (blows/ft,in)	Pocket Penetrometer (tsf)	Unconfined Comp. Strength (tsf)	% Passing No. 200 Sieve	Unit Dry Weight (pcf)	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
		Dark Brown and Gray CLAY with some sand-FILL				4.0							
		2.0											
5		Dark Brown CLAY				3.0				31			
						4.5				29			
		6.0											
		Light Brown CLAY with calcareous nodules				4.5+				26			
		8.0											
10		Tan CALCAREOUS CLAY				4.5+				21	41	17	24
15		-limestone seams and layers below 13'				4.0				17			
		18.0											
20		▽ Tan and Gray SHALY CLAY				4.5				26			
25		-gray below 23'				4.5+				21			
		26.0											
		Gray CLAY SHALE			90/ 12"								
30													
		34.0											
35		▼ Gray SHALE with limestone seams			100/ 5"								
40					100/ 5.5"								
45					100/ 5"								
50					100/ 4.5"								
55					100/ 4.25"								
60					100/ 4.5"								
65		-6" thick limestone layer at 64.5'			100/ 4.5"								
70		70.0			100/ 5.5"								
		TEST BORING TERMINATED AT 70 FT											
75													

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LOG OF BORING NO.: 7
Sheet 1 of 1
PROJECT NO.: G152235

Client: DCO Realty, Inc.
Project: Vitruvian Park - Buildings 201, 202 and 203
Start Date: 10/7/2015 **End Date:** 10/7/2015
Drilling Method: CONTINUOUS FLIGHT AUGER

Location: Addison, Texas
Surface Elevation:
West:
North:
Hammer Drop (lbs / in): 170 / 24

GROUND WATER OBSERVATIONS
On Rods (ft): None
After Drilling (ft): Dry
After ____ Hours (ft):

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Sample Type	Recovery % RQD	TX Cone or Std. Pen. (blows/ft,in)	Pocket Penetrometer (tsf)	Unconfined Comp. Strength (tsf)	% Passing No. 200 Sieve	Unit Dry Weight (pcf)	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0		Dark Brown CLAY				3.5							
						2.5	1.1		91	31			
4.0													
5		Tan and Gray CLAY				2.0				31			
						3.25				33			
10						4.5+				33	76	26	50
13.0													
15		Tan and Gray SHALY CLAY				4.5+				25			
20						4.5+							
20.0		TEST BORING TERMINATED AT 20 FT											
25													
30													
35													
40													
45													
50													
55													
60													
65													
70													
75													

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LOG OF BORING NO.: 8

PROJECT NO.: G152235

Client: DCO Realty, Inc.
Project: Vitruvian Park - Buildings 201, 202 and 203
Start Date: 10/7/2015 **End Date:** 10/7/2015
Drilling Method: CONTINUOUS FLIGHT AUGER

Location: Addison, Texas
Surface Elevation:
West:
North:
Hammer Drop (lbs / in): 170 / 24

GROUND WATER OBSERVATIONS
On Rods (ft): None
After Drilling (ft): Dry
After ____ Hours (ft):

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Sample Type	Recovery % RQD	TX Cone or Std. Pen. (blows/ft,in)	Pocket Penetrometer (tsf)	Unconfined Comp. Strength (tsf)	% Passing No. 200 Sieve	Unit Dry Weight (pcf)	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
		Light Brown CLAY				3.0							
		2.0											
5		Tan and Gray CLAY				4.5+				21	72	24	48
						4.5+				20			
						4.5+				23			
		8.0											
10		Tan and Gray SHALY CLAY				4.5+				27			
		11.0											
		Gray SHALY CLAY											
15						4.5+				21			
		16.0											
		Gray SHALE with limestone seams											
20		20.0			100/ 5.5"								
		TEST BORING TERMINATED AT 20 FT											
25													
30													
35													
40													
45													
50													
55													
60													
65													
70													
75													

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LOG OF BORING NO.: 9

PROJECT NO.: G152235

Client: DCO Realty, Inc.
Project: Vitruvian Park - Buildings 201, 202 and 203
Start Date: 10/7/2015 **End Date:** 10/7/2015
Drilling Method: CONTINUOUS FLIGHT AUGER

Location: Addison, Texas
Surface Elevation:
West:
North:
Hammer Drop (lbs / in): 170 / 24

GROUND WATER OBSERVATIONS
On Rods (ft): None
After Drilling (ft): Dry
After ____ Hours (ft):

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Sample Type	Recovery % RQD	TX Cone or Std. Pen. (blows/ft,in)	Pocket Penetrometer (tsf)	Unconfined Comp. Strength (tsf)	% Passing No. 200 Sieve	Unit Dry Weight (pcf)	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
5		Dark Brown CLAY				2.5							
						2.5				31			
		6.0				2.25				33			
10		Tan and Gray CLAY				3.25				33			
						4.5+				33			
		13.0											
15		Tan and Gray SHALY CLAY				4.5+				25			
20		-gray below 18'				4.5+							
		20.0											
		TEST BORING TERMINATED AT 20 FT											
25													
30													
35													
40													
45													
50													
55													
60													
65													
70													
75													

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LOG OF BORING NO.: 10
Sheet 1 of 1
PROJECT NO.: G152235

Client: DCO Realty, Inc.
Project: Vitruvian Park - Buildings 201, 202 and 203
Start Date: 10/7/2015 **End Date:** 10/7/2015
Drilling Method: CONTINUOUS FLIGHT AUGER

Location: Addison, Texas
Surface Elevation:
West:
North:
Hammer Drop (lbs / in): 170 / 24

GROUND WATER OBSERVATIONS
On Rods (ft): None
After Drilling (ft): Dry
After ____ Hours (ft):

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Sample Type	Recovery % RQD	TX Cone or Std. Pen. (blows/ft,in)	Pocket Penetrometer (tsf)	Unconfined Comp. Strength (tsf)	% Passing No. 200 Sieve	Unit Dry Weight (pcf)	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0		Dark Brown CLAY				3.5							
						3.25	1.8		92	32			
5						4.5+				28	70	24	46
		8.0				4.5+				27			
10		Tan and Gray CLAY				3.25				27			
		13.0											
15		Tan and Gray SHALY CLAY				3.25				19			
		20.0				4.5+							
20		TEST BORING TERMINATED AT 20 FT											
25													
30													
35													
40													
45													
50													
55													
60													
65													
70													
75													

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LOG OF BORING NO.: 11

PROJECT NO.: G152235

Client: DCO Realty, Inc.
Project: Vitruvian Park - Buildings 201, 202 and 203
Start Date: 10/8/2015 **End Date:** 10/8/2015
Drilling Method: CONTINUOUS FLIGHT AUGER

Location: Addison, Texas
Surface Elevation:
West:
North:
Hammer Drop (lbs / in): 170 / 24

GROUND WATER OBSERVATIONS
On Rods (ft): None
After Drilling (ft): Dry
After ____ Hours (ft):

Depth, feet	Graphic Log	MATERIAL DESCRIPTION		Sample Type	Recovery % RQD	TX Cone or Std. Pen. (blows/ft,in)	Pocket Penetrometer (tsf)	Unconfined Comp. Strength (tsf)	% Passing No. 200 Sieve	Unit Dry Weight (pcf)	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
		Tan CLAY with rock fragments-FILL	2.0				4.5+							
5		Dark Brown CLAY					4.5+				23	69	23	46
			6.0				4.5+				25			
		Tan and Gray CLAY	8.0				3.0				23			
10		Tan and Gray SHALY CLAY					2.75				30			
15							4.5+				29			
20			20.0				4.5+							
		TEST BORING TERMINATED AT 20 FT												
25														
30														
35														
40														
45														
50														
55														
60														
65														
70														
75														

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LOG OF BORING NO.: 12
Sheet 1 of 1
PROJECT NO.: G152235

Client: DCO Realty, Inc.
Project: Vitruvian Park - Buildings 201, 202 and 203
Start Date: 10/8/2015 **End Date:** 10/8/2015
Drilling Method: CONTINUOUS FLIGHT AUGER

Location: Addison, Texas
Surface Elevation:
West:
North:
Hammer Drop (lbs / in): 170 / 24

GROUND WATER OBSERVATIONS
On Rods (ft): None
After Drilling (ft): Dry
After ____ Hours (ft):

Depth, feet	Graphic Log	MATERIAL DESCRIPTION		Sample Type	Recovery % RQD	TX Cone or Std. Pen. (blows/ft,in)	Pocket Penetrometer (tsf)	Unconfined Comp. Strength (tsf)	% Passing No. 200 Sieve	Unit Dry Weight (pcf)	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
		Tan and Brown CLAY with rock fragments-FILL	2.0				4.5+							
		Tan CLAY with calcareous nodules	4.0				3.0	3.7		104	21			
5		Tan and Gray CLAY	6.0				3.0				30			
		Tan and Gray SHALY CLAY					4.5+				28	76	25	51
10							4.5+				31			
			11.0											
		Gray CLAY SHALE with limestone seams				100/ 9"								
15														
20			20.0			100/ 8"								
		TEST BORING TERMINATED AT 20 FT												
25														
30														
35														
40														
45														
50														
55														
60														
65														
70														
75														

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LOG OF BORING NO.: 13
Sheet 1 of 1
PROJECT NO.: G152235

Client: DCO Realty, Inc.
Project: Vitruvian Park - Buildings 201, 202 and 203
Start Date: 10/8/2015 **End Date:** 10/8/2015
Drilling Method: CONTINUOUS FLIGHT AUGER

Location: Addison, Texas
Surface Elevation:
West:
North:
Hammer Drop (lbs / in): 170 / 24

GROUND WATER OBSERVATIONS
On Rods (ft): None
After Drilling (ft): Dry
After ____ Hours (ft):

Depth, feet	Graphic Log	MATERIAL DESCRIPTION		Sample Type	Recovery % RQD	TX Cone or Std. Pen. (blows/ft,in)	Pocket Penetrometer (tsf)	Unconfined Comp. Strength (tsf)	% Passing No. 200 Sieve	Unit Dry Weight (pcf)	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
		Dark Brown and Tan CLAY with some sand-FILL	2.0				4.5+							
		Dark Brown CLAY	4.0				3.5				32			
5		Tan CLAY with calcareous nodules	6.0				4.5+				30	62	21	41
		Tan and Gray CLAY					3.0				28			
10							3.0				34			
			12.0											
		Gray CLAY SHALE with limestone seams				98/ 10"								
15														
20			20.0			100/ 9.5"								
		TEST BORING TERMINATED A T20 FT												
25														
30														
35														
40														
45														
50														
55														
60														
65														
70														
75														

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LOG OF BORING NO.: 14
Sheet 1 of 1
PROJECT NO.: G152235

Client: DCO Realty, Inc.
Project: Vitruvian Park - Buildings 201, 202 and 203
Start Date: 10/8/2015 **End Date:** 10/8/2015
Drilling Method: CONTINUOUS FLIGHT AUGER

Location: Addison, Texas
Surface Elevation:
West:
North:
Hammer Drop (lbs / in): 170 / 24

GROUND WATER OBSERVATIONS
On Rods (ft): None
After Drilling (ft): Dry
After ____ Hours (ft):

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Sample Type	Recovery % RQD	TX Cone or Std. Pen. (blows/ft,in)	Pocket Penetrometer (tsf)	Unconfined Comp. Strength (tsf)	% Passing No. 200 Sieve	Unit Dry Weight (pcf)	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
		Brown and Tan CALCAREOUS CLAY with limestone seams and layers				4.5+							
		2.0			100/ 3"								
5		Tan Weathered SHALY LIMESTONE with clay seams and layers			100/ 2"								
		8.0			100/ 3.5"								
10		Gray SHALY LIMESTONE											
		11.0			100/ 1.5"								
		Gray CLAY SHALE with limestone seams											
15					91/ 10.75"								
		20.0			100/ 8"								
20		TEST BORING TERMINATED AT 20 FT											
25													
30													
35													
40													
45													
50													
55													
60													
65													
70													
75													

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LOG OF BORING NO.: 15
Sheet 1 of 1
PROJECT NO.: G152235

Client: DCO Realty, Inc.
Project: Vitruvian Park - Buildings 201, 202 and 203
Start Date: 10/8/2015 **End Date:** 10/8/2015
Drilling Method: CONTINUOUS FLIGHT AUGER

Location: Addison, Texas
Surface Elevation:
West:
North:
Hammer Drop (lbs / in): 170 / 24

GROUND WATER OBSERVATIONS
On Rods (ft): None
After Drilling (ft): Dry
After ____ Hours (ft):

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Sample Type	Recovery % RQD	TX Cone or Std. Pen. (blows/ft,in)	Pocket Penetrometer (tsf)	Unconfined Comp. Strength (tsf)	% Passing No. 200 Sieve	Unit Dry Weight (pcf)	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
		Brown and Tan CLAY-FILL				2.5							
		2.0											
5		Light Brown CLAY				2.75	1.1		97	28			
						3.0				28			
		6.0											
		Tan and Gray CLAY				3.0				25			
10						3.25				28	66	22	44
15										32			
		17.0											
		Gray CLAY SHALE with limestone seams											
20		20.0			100/ 7.5"								
		TEST BORING TERMINATED AT 20 FT											
25													
30													
35													
40													
45													
50													
55													
60													
65													
70													
75													

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LOG OF BORING NO.: 16

PROJECT NO.: G152235

Client: DCO Realty, Inc.
Project: Vitruvian Park - Buildings 201, 202 and 203
Start Date: 10/8/2015 **End Date:** 10/8/2015
Drilling Method: CONTINUOUS FLIGHT AUGER

Location: Addison, Texas
Surface Elevation:
West:
North:
Hammer Drop (lbs / in): 170 / 24

GROUND WATER OBSERVATIONS
On Rods (ft): None
After Drilling (ft): Dry
After ____ Hours (ft):

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Sample Type	Recovery % RQD	TX Cone or Std. Pen. (blows/ft,in)	Pocket Penetrometer (tsf)	Unconfined Comp. Strength (tsf)	% Passing No. 200 Sieve	Unit Dry Weight (pcf)	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0		Dark Brown and Tan CLAY with rock fragments-FILL 2.0											
5		Tan CLAY with calcareous nodules				4.5+				13			
		6.0				2.5				20	73	26	47
		Tan and Gray SHALY CLAY				2.0				31			
10						4.5				23			
		-gray below 12'											
15						4.5+				20			
		16.0 Gray CLAY SHALE											
20		20.0			66/ 12"								
		TEST BORING TERMINATED AT 20 FT											
25													
30													
35													
40													
45													
50													
55													
60													
65													
70													
75													

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LOG OF BORING NO.: 17
Sheet 1 of 1
PROJECT NO.: G152235

Client: DCO Realty, Inc.
Project: Vitruvian Park - Buildings 201, 202 and 203
Start Date: 10/8/2015 **End Date:** 10/8/2015
Drilling Method: CONTINUOUS FLIGHT AUGER

Location: Addison, Texas
Surface Elevation:
West:
North:
Hammer Drop (lbs / in): 170 / 24

GROUND WATER OBSERVATIONS
On Rods (ft): None
After Drilling (ft): Dry
After ____ Hours (ft):

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Sample Type	Recovery % RQD	TX Cone or Std. Pen. (blows/ft,in)	Pocket Penetrometer (tsf)	Unconfined Comp. Strength (tsf)	% Passing No. 200 Sieve	Unit Dry Weight (pcf)	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
		Dark Brown CLAY with rock fragments-FILL 2.0				4.5+							
5		Brown CLAY				2.25				21			
						3.0				23			
						3.0				19			
10						3.0				25			
		13.0											
15		Tan and Gray SHALY CLAY				3.0				39	89	28	61
		-gray below 18'											
20		20.0				4.5+							
		TEST BORING TERMINATED AT 20 FT											
25													
30													
35													
40													
45													
50													
55													
60													
65													
70													
75													

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LOG OF BORING NO.: 18

PROJECT NO.: G152235

Client: DCO Realty, Inc.
Project: Vitruvian Park - Buildings 201, 202 and 203
Start Date: 10/7/2015 **End Date:** 10/7/2015
Drilling Method: CONTINUOUS FLIGHT AUGER

Location: Addison, Texas
Surface Elevation:
West:
North:
Hammer Drop (lbs / in): 170 / 24

GROUND WATER OBSERVATIONS
On Rods (ft): None
After Drilling (ft): Dry
After ____ Hours (ft):

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Sample Type	Recovery % RQD	TX Cone or Std. Pen. (blows/ft,in)	Pocket Penetrometer (tsf)	Unconfined Comp. Strength (tsf)	% Passing No. 200 Sieve	Unit Dry Weight (pcf)	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0		Dark Brown CLAY				4.25							
						4.5+				25	70	24	46
5						2.5				25			
		-brown below 6'				2.5				28			
		8.0											
10		Tan and Gray CLAY				3.5				31			
		13.0											
15		Tan and Gray SHALY CLAY				4.25				29			
20		20.0				4.5+							
		TEST BORING TERMINATED AT 20 FT											
25													
30													
35													
40													
45													
50													
55													
60													
65													
70													
75													

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LOG OF BORING NO.: 19
Sheet 1 of 1
PROJECT NO.: G152235

Client: DCO Realty, Inc.
Project: Vitruvian Park - Buildings 201, 202 and 203
Start Date: 10/7/2015 **End Date:** 10/7/2015
Drilling Method: CONTINUOUS FLIGHT AUGER

Location: Addison, Texas
Surface Elevation:
West:
North:
Hammer Drop (lbs / in): 170 / 24

GROUND WATER OBSERVATIONS
On Rods (ft): None
After Drilling (ft): Dry
After ____ Hours (ft):

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Sample Type	Recovery % RQD	TX Cone or Std. Pen. (blows/ft,in)	Pocket Penetrometer (tsf)	Unconfined Comp. Strength (tsf)	% Passing No. 200 Sieve	Unit Dry Weight (pcf)	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0		Dark Brown CLAY with traces of limestone fragments				4.0							
		4.0				4.5+	3.8		98	29			
5		Tan CALCAREOUS CLAY with weathered limestone				4.5+				16			
		8.0				4.5+				18	35	18	17
10		Tan and Gray CLAY with calcareous nodules				3.0				33			
		13.0											
15		Tan and Gray SHALY CLAY				4.5+				29			
20		20.0				4.5+							
		TEST BORING TERMINATED AT 20 FT											
25													
30													
35													
40													
45													
50													
55													
60													
65													
70													
75													

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LOG OF BORING NO.: 20

PROJECT NO.: G152235

Client: DCO Realty, Inc.
Project: Vitruvian Park - Buildings 201, 202 and 203
Start Date: 10/7/2015 **End Date:** 10/7/2015
Drilling Method: CONTINUOUS FLIGHT AUGER

Location: Addison, Texas
Surface Elevation:
West:
North:
Hammer Drop (lbs / in): 170 / 24

GROUND WATER OBSERVATIONS
On Rods (ft): None
After Drilling (ft): Dry
After ____ Hours (ft):

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Sample Type	Recovery % RQD	TX Cone or Std. Pen. (blows/ft,in)	Pocket Penetrometer (tsf)	Unconfined Comp. Strength (tsf)	% Passing No. 200 Sieve	Unit Dry Weight (pcf)	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
		Dark Brown, Tan, and Gray CLAY-FILL				3.25							
		2.0											
5		Dark Brown CLAY				3.5				29	70	24	46
						2.5				32			
		8.0				2.75				31			
10		Tan and Gray CLAY				3.5				28			
		13.0											
15		Tan and Gray SHALY CLAY				4.5				28			
20		20.0				4.5+							
		TEST BORING TERMINATED AT 20 FT											
25													
30													
35													
40													
45													
50													
55													
60													
65													
70													
75													

ALPHA TESTING
WHERE IT ALL BEGINS

2209 Wisconsin Street
Suite 100
Dallas, Texas
75229
Phone: 972-620-8911
Fax: 972-620-1302
www.alphatesting.com

LOG OF BORING NO.: 21

PROJECT NO.: G152235

Client: DCO Realty, Inc.
Project: Vitruvian Park - Buildings 201, 202 and 203
Start Date: 10/7/2015 **End Date:** 10/7/2015
Drilling Method: CONTINUOUS FLIGHT AUGER

Location: Addison, Texas
Surface Elevation:
West:
North:
Hammer Drop (lbs / in): 170 / 24

GROUND WATER OBSERVATIONS
On Rods (ft): None
After Drilling (ft): Dry
After ____ Hours (ft):

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Sample Type	Recovery % RQD	TX Cone or Std. Pen. (blows/ft,in)	Pocket Penetrometer (tsf)	Unconfined Comp. Strength (tsf)	% Passing No. 200 Sieve	Unit Dry Weight (pcf)	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0		Dark Brown CLAY				3.75							
						4.25				32			
5						4.25				27	79	24	55
		-light brown below 6'				3.5				29			
		8.0											
10		Tan CLAY with calcareous nodules				4.0				29			
		13.0											
15		Tan and Gray CLAY				4.5+				23			
20		20.0				4.5+							
		TEST BORING TERMINATED AT 20 FT											
25													
30													
35													
40													
45													
50													
55													
60													
65													
70													
75													

ALPHA TESTING
WHERE IT ALL BEGINS

2209 Wisconsin Street
Suite 100
Dallas, Texas
75229
Phone: 972-620-8911
Fax: 972-620-1302
www.alphatesting.com

LOG OF BORING NO.: 22

PROJECT NO.: G152235

Client: DCO Realty, Inc.
Project: Vitruvian Park - Buildings 201, 202 and 203
Start Date: 10/7/2015 **End Date:** 10/7/2015
Drilling Method: CONTINUOUS FLIGHT AUGER

Location: Addison, Texas
Surface Elevation:
West:
North:
Hammer Drop (lbs / in): 170 / 24

GROUND WATER OBSERVATIONS
▽ On Rods (ft): 13
▼ After Drilling (ft): 12
▽ After ____ Hours (ft):

Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Sample Type	Recovery % RQD	TX Cone or Std. Pen. (blows/ft,in)	Pocket Penetrometer (tsf)	Unconfined Comp. Strength (tsf)	% Passing No. 200 Sieve	Unit Dry Weight (pcf)	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
5		Dark Brown CLAY				3.0							
						3.75	1.8		91	32			
		6.0				3.75				30			
		Light Brown to Tan CLAY with calcareous nodules				3.75				25			
10						4.0				23	56	21	35
		13.0											
15		Tan and Gray CLAY with gravel and calcareous nodules				2.0				21			
20		20.0				4.5+							
		TEST BORING TERMINATED AT 20 FT											
25													
30													
35													
40													
45													
50													
55													
60													
65													
70													
75													

ALPHA TESTING
WHERE IT ALL BEGINS

2209 Wisconsin Street
Suite 100
Dallas, Texas
75229
Phone: 972-620-8911
Fax: 972-620-1302
www.alphatesting.com

LOG OF BORING NO.: 23

PROJECT NO.: G152235

Client: DCO Realty, Inc.
Project: Vitruvian Park - Buildings 201, 202 and 203
Start Date: 10/7/2015 **End Date:** 10/7/2015
Drilling Method: CONTINUOUS FLIGHT AUGER

Location: Addison, Texas
Surface Elevation:
West:
North:
Hammer Drop (lbs / in): 170 / 24

GROUND WATER OBSERVATIONS
On Rods (ft): None
After Drilling (ft): Dry
After ____ Hours (ft):

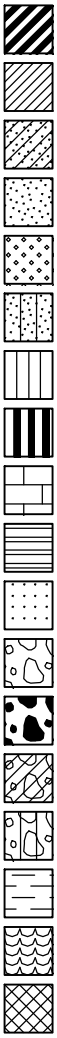
Depth, feet	Graphic Log	MATERIAL DESCRIPTION	Sample Type	Recovery % RQD	TX Cone or Std. Pen. (blows/ft,in)	Pocket Penetrometer (tsf)	Unconfined Comp. Strength (tsf)	% Passing No. 200 Sieve	Unit Dry Weight (pcf)	Water Content, %	Liquid Limit	Plastic Limit	Plasticity Index
0		Dark Brown CLAY with calcareous nodules				4.5+							
		4.0				4.5+				24	71	25	46
5		Light Brown to Tan CLAY				3.0				30			
		6.0											
		Tan and Gray CLAY				3.0				31			
10						2.25				32			
		13.0											
15		Tan and Gray SHALY CLAY				4.5+				28			
		-gray below 18'				4.5+							
20		20.0											
		TEST BORING TERMINATED AT 20 FT											
25													
30													
35													
40													
45													
50													
55													
60													
65													
70													
75													

ALPHA TESTING

WHERE IT ALL BEGINS

KEY TO SOIL SYMBOLS AND CLASSIFICATIONS

SOIL & ROCK SYMBOLS



(CH), High Plasticity CLAY

(CL), Low Plasticity CLAY

(SC), CLAYEY SAND

(SP), Poorly Graded SAND

(SW), Well Graded SAND

(SM), SILTY SAND

(ML), SILT

(MH), Elastic SILT

LIMESTONE

SHALE / MARL

SANDSTONE

(GP), Poorly Graded GRAVEL

(GW), Well Graded GRAVEL

(GC), CLAYEY GRAVEL

(GM), SILTY GRAVEL

(OL), ORGANIC SILT

(OH), ORGANIC CLAY

FILL

SAMPLING SYMBOLS



SHELBY TUBE (3" OD except where noted otherwise)

SPLIT SPOON (2" OD except where noted otherwise)

AUGER SAMPLE

TEXAS CONE PENETRATION

ROCK CORE (2" ID except where noted otherwise)

RELATIVE DENSITY OF COHESIONLESS SOILS (blows/ft)

VERY LOOSE	0 TO 4
LOOSE	5 TO 10
MEDIUM	11 TO 30
DENSE	31 TO 50
VERY DENSE	OVER 50

SHEAR STRENGTH OF COHESIVE SOILS (tsf)

VERY SOFT	LESS THAN 0.25
SOFT	0.25 TO 0.50
FIRM	0.50 TO 1.00
STIFF	1.00 TO 2.00
VERY STIFF	2.00 TO 4.00
HARD	OVER 4.00

RELATIVE DEGREE OF PLASTICITY (PI)

LOW	4 TO 15
MEDIUM	16 TO 25
HIGH	26 TO 35
VERY HIGH	OVER 35

RELATIVE PROPORTIONS (%)

TRACE	1 TO 10
LITTLE	11 TO 20
SOME	21 TO 35
AND	36 TO 50

PARTICLE SIZE IDENTIFICATION (DIAMETER)

BOULDERS	8.0" OR LARGER
COBBLES	3.0" TO 8.0"
COARSE GRAVEL	0.75" TO 3.0"
FINE GRAVEL	5.0 mm TO 3.0"
COURSE SAND	2.0 mm TO 5.0 mm
MEDIUM SAND	0.4 mm TO 5.0 mm
FINE SAND	0.07 mm TO 0.4 mm
SILT	0.002 mm TO 0.07 mm
CLAY	LESS THAN 0.002 mm

TRANSMITTAL OF ADDENDUM

****

INSTRUCTIONS:

Acknowledge receipt of Addenda with the form below. Inclusion of this completed acknowledgement in final bid package is manditory for bid acceptance.

****

Addendum Acknowledgment

I acknowledge the receipt of Addendum No.: **1** Total # of Pages: 9

Town of: **Addison, Texas**

Project Name: **Vitruvian Park Public Infrastructure - Phase V**

The undersigned bidder hereby certifies that Addendum No. 1 has been incorporated into the proposal and if accepted becomes part of the contract.

Company Name:	Flow-Line Construction, Inc.
Signed By (Print Name):	
Signature:	Eduardo M. Hernandez
Date:	10/25/2016
Phone No:	214-390-2848

PLEASE SIGN & INCLUDE THIS PAGE IN FINAL BID PACKAGE

ENGINEERING & PROJECT MANAGEMENT

16-184 VITRUVIAN PARK PUBLIC INFRASTRUCTURE – PHASE V
PRE-BID CONFERENCE 10/13/2016

Question 1. Who will be building temporary access crossings?

Answer: Building Contractor

Question 2. Will building contractor be responsible for paving after phase 1 has completed?

Answer: All paving is to occur in phase III. Acceptance of final paving inspection will be required upon completion of phase 3. Owner will be responsible for providing release to infrastructure contractor upon receipt of acceptance. UDR will be responsible for any paving repairs after acceptance by owner until completion of the corresponding building project.

Question 3. Is 180-day schedule flexible?

Answer: Yes – during pre-bid conference it was determined a new schedule of 270 calendar days would be acceptable, with an anticipated weekly schedule of Monday through Saturday in accordance with all town ordinances.

Question 4. Will there be an extra cost for required town inspections on Saturday?

Answer: No.

Question 5. Is there a requirement for construction forces?

Answer. No

Question 6. Will the Town provide water meters?

Answer: No. The Town has a list of acceptable suppliers.

Question 7. Where there is a requirement of Repair of Existing Irrigation System, is there an owner allowance for contingency of repairs, and/or a way to locate current irrigation systems (as-builts) and working conditions?

Answer. Irrigation systems are in good working order. There are no available as-builts for the irrigation system.

Question 8. Are duct bank plans approved by Oncor?

Answer: Yes.

Question 9. Will there be any remedy if the building contractor causes delays to the infrastructure contractor?

Answer: Infrastructure contractor should coordinate with building contractor to ensure mitigation of delays.

Question 10. Will there be scheduling meetings with building contractor and owner?

Answer: Yes. It is anticipated that there will be weekly meetings held on site with all relevant parties.

Question 11. What material is footing of retaining wall exposed on the west side?

Answer: Not known.

Question 12. In areas not accessible to large paving equipment will slip form be allowed?

Answer: Yes.

Question 13. Does the parks department have a requirement to retain removed trees?

Answer: No.

Question 14. How many duplicates of bid are required?

Answer: 1 original, 2 copies and electronic copy (thumbdrive) are required. Electronic bidding on bidsycn.com will not be considered for this project.

Question 15. Duct bank questions including transformer size and package questions, Oncor acceptance of smaller bends.

Answer: There is only 1 transformer pad in this design and it is detailed in the design. Bid per design.

Question 16. Will the pre-bid conference sign-in sheet be available on bidsyn.com?

Answer: Yes.

ENGINEERING & PROJECT MANAGEMENT

CURRENTLY UNANSWERED ON BIDSYNC
As of 10/18/2016

Question 3. Who will be the Building Contractor on this project?

Answer: Clark Building Co. is anticipated to be the building contractor.

Question 4. What "control" of this site will the Utility Contractor have over the Building Contractor on this project? What remedies will be available if Building Contractor for example has the area we are working in obstructed or causes the Utility Contractor a delay? I understand we will need to coordinate with the Building Contractor but that doesn't always go smoothly.

Answer: The project construction manager will be over both projects and will resolve any and all conflicts.

Question 5. Note 21D on Plan Sheet 60 states flowable material may be used as select material around manholes when requested. Is this just at the discretion of the Town? Will flowable material be required around manholes? If so how will this be paid?

Answer: Compaction around manholes must be achieved. The use of flowable material is at the discretion of and for the benefit of the selected contractor. No additional funds will be provided for the use of flowable material.

Question 6. What is the anticipated date of mobilization on this project?

Answer: Mobilization will be required within 10 days of the issuance of the notice to proceed (NTP). NTP will be issued within 2 working days of Addison Town Council award of construction contract anticipated on November 14th 2016.

Question 7. Is there any flexibility on the 180 day schedule? This seems like a really tight schedule to complete this amount of work.

Answer: Yes – during pre-bid conference it was determined a new schedule of 270 calendar days would be acceptable, with an anticipated weekly schedule of Monday through Saturday in accordance with all town ordinances.

Question 8. Concerning bid item #24. Is this item meant to pay for all the excavation/grading and fill for all areas associated with paving from ROW to ROW?

Answer: Yes.

ENGINEERING & PROJECT MANAGEMENT

Question 9. Concerning Sheet 8 note #17. Will there be a pay item for proof rolling?

Answer: No, this item is subsidiary.

Question 10. Concerning note #23 on sheet 8. This note states all earthwork will be considered unclassified excavation and bid on a lump sum basis. Bid item #24 looks to be for earthwork associated with paved areas. Where is the earthwork associated with unpaved/landscaped areas paid for and what is the anticipated quantity? There is no pay item for unclassified excavation outside of paved areas.

Answer: Bid item #24 is for all earthwork on this project. Note #23 is to notify the contractor that there will be no adjustment in quantity shown unless change in scope of work is approved.

Question 11. Per note #21 on sheet 8. This note says to strip 6" below grade for landscaped areas. Is there a bid item or estimated quantity for this work? Is this to be paid under bid item #176 (Prep of planting beds)?

Answer: No. Note #21 is a reference to mass grading and is included in bid item #24, unclassified excavation.

Question 12. Concerning bid item #24 quantities; Can you breakout how much is embankment or fill and how much is cut?

Answer: No, that is the responsibility of the contractor to verify.

Question 13. Can you provide cut plans for this project for the grading?

Answer: No, cut plans are unnecessary.

Question 14. Concerning bid item #33, constructing concrete street header. What is the depth of the header? Is stabilization required under street header?

Answer: Please reference detail provided on sheet #15. Stabilization will be required under the street header.

Question 15. Where will the dig out under the proposed sidewalks be paid for? What pay item will be used for base under the sidewalks?

Answer: Earthwork for sidewalks is subsidiary to sidewalk construction.

Question 16. In the additive alternate section what pay items will cover the removal and subgrade for pay item #154 (concrete sidewalks)?

Answer: Earthwork for sidewalks is subsidiary to sidewalk construction.

Question 17. For bid item #147. Please confirm that this is for the Concrete Deepwell Pad only (Detail 205-345) and not to include the 4-Way 25kv Deadfront Switchgear Vista Vault (Detail 205-346) on plan sheet 70.

Answer: Detail 205-346 is not a vault detail. It is a detail for conduit locations for deep well pads only.

Question 18. For bid item 147. How many piers are required for the Concrete Deepwell Pad?

Answer: Four (4)

Question 19. Please confirm that it is not mandatory to bid the additive alternate bid portion of this package.

Answer: It is mandatory to bid the additive alternate bid portion but the Town of Addison reserves the right to not include this in the Award of Bid.

Question 20. Should the irrigation repair items be included in the base bid instead of the additive alternate bid? If the contractor decides not to be the additive alternate package how will the irrigation repair items be paid for?

Answer: Bid items 176, 177, and 178 should be moved to Base Bid as bid items 153, 154, and 155. Delete Additive Alternate Bid Items 174 (Connection to existing irrigation system mainline along Westgate Lane), and Bid Items 176, 177, and 178 (Repair of existing irrigation systems) in their entirety.

ENGINEERING & PROJECT MANAGEMENT

16-184 VITRUVIAN PARK PUBLIC INFRASTRUCTURE – PHASE V
Miscellaneous Questions & Notifications

Question 1. Can the bid closing date be extended to allow additional time to incorporate RFI responses?

Answer: Yes, the bid closing date has been extended from Thursday, 10/20 to Tuesday 10/25 at 2:00pm CDT

Question 2. Do you have a detail for the asphalt pavement patch associated with the duct bank installation that runs through the parking lot on the NE corner of the project?

Answer: It is not a pavement patch. It is the Town of Addison's standard detail SD-U02 "Utility Asphalt Pavement Repair".

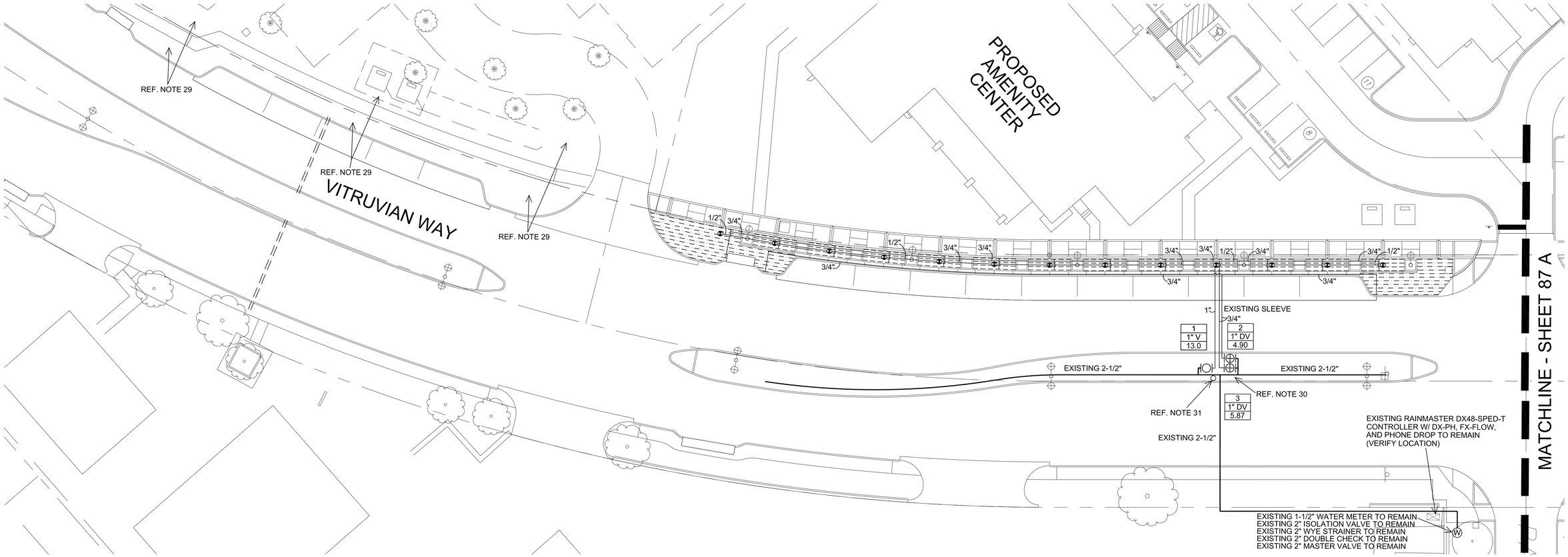
Notification 1: Irrigation Plan Sheets 86 and 87 have been revised.

CORPUS CHRISTI
5151 FLYNN PARKWAY, SUITE 500
CORPUS CHRISTI, TX 78411
361.400.2929

SAN ANTONIO
401 ISOM ROAD, SUITE 101
SAN ANTONIO, TX 78216
210.525.0647

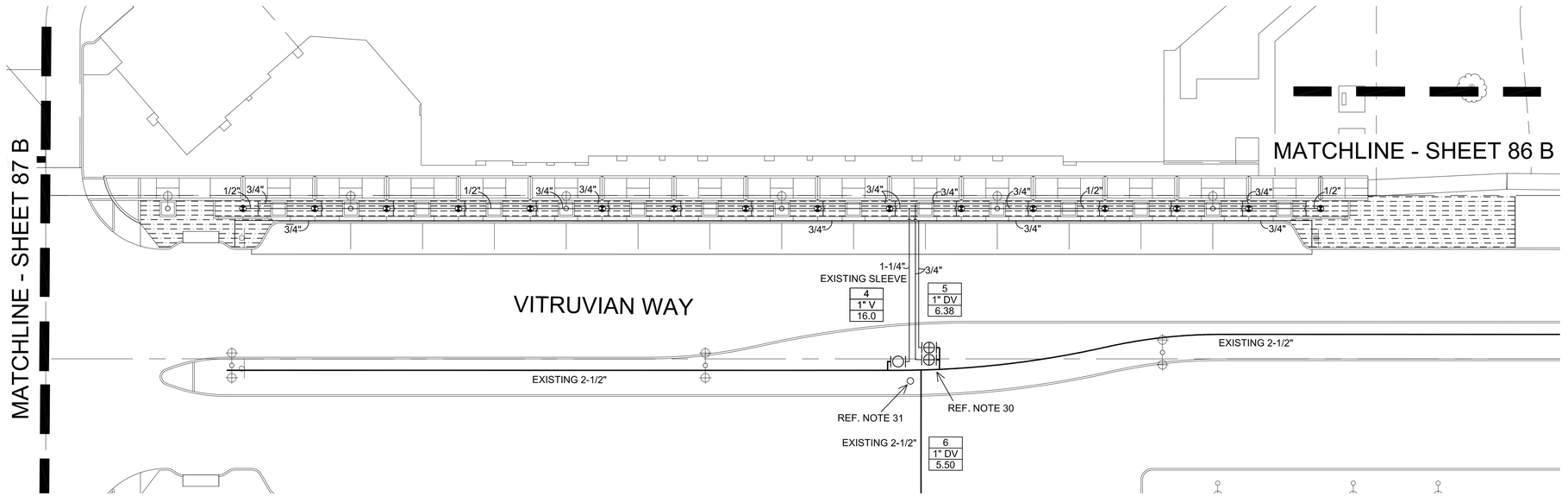
DALLAS/FORT WORTH
16051 ADDISON ROAD, SUITE 211
ADDISON, TX 75001
210.468.4211

WWW.RHSITX.COM



Irrigation Plan - Vitruvian Way | B

Scale: 1"=20'



Irrigation Plan - Vitruvian Way | A

Scale: 1"=20'

Irrigation in Texas is regulated by the Texas Commission of Environmental Quality (TCEQ), MC-178, P.O. Box 13087, Austin, Texas, 78711-3087. TCEQ website is: www.tceq.state.tx.us





SETH HEIDMAN
IRRIGATION DESIGN & CONSULTING, LLC
6009 W. Parker Rd. #149-221, Plano, Texas 75093 Tel: 972-814-3141

NO.	REVISION	BY	DATE

studioOutside
824 Exposition Avenue, Ste. 5
Dallas, Texas 75226
o214.954.7160
f214.954.7162

PAVING, DRAINAGE & UTILITY IMPROVEMENTS

VITRUVIAN PARK PUBLIC INFRASTRUCTURE BLOCK 200

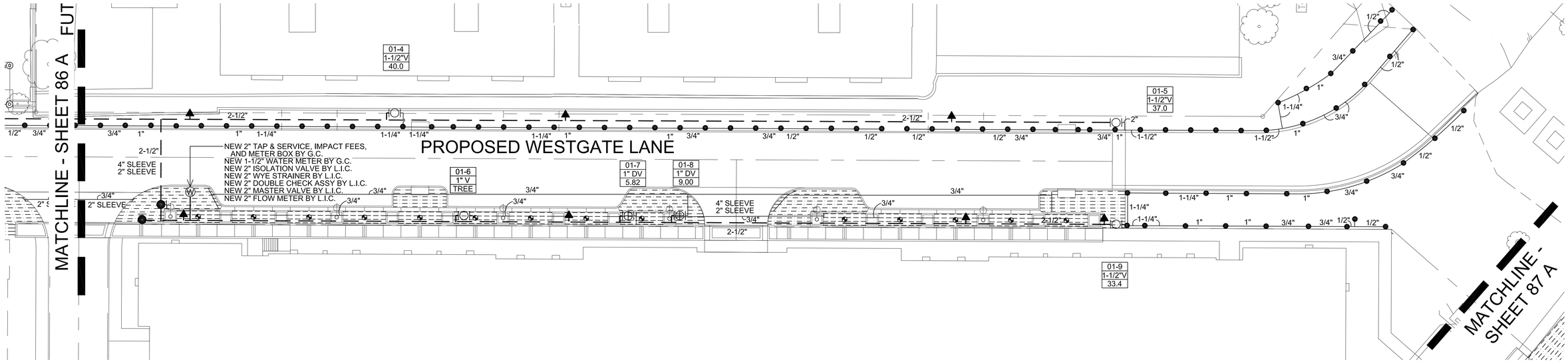
TOWN OF ADDISON, TEXAS

IRRIGATION PLAN

VITRUVIAN WAY

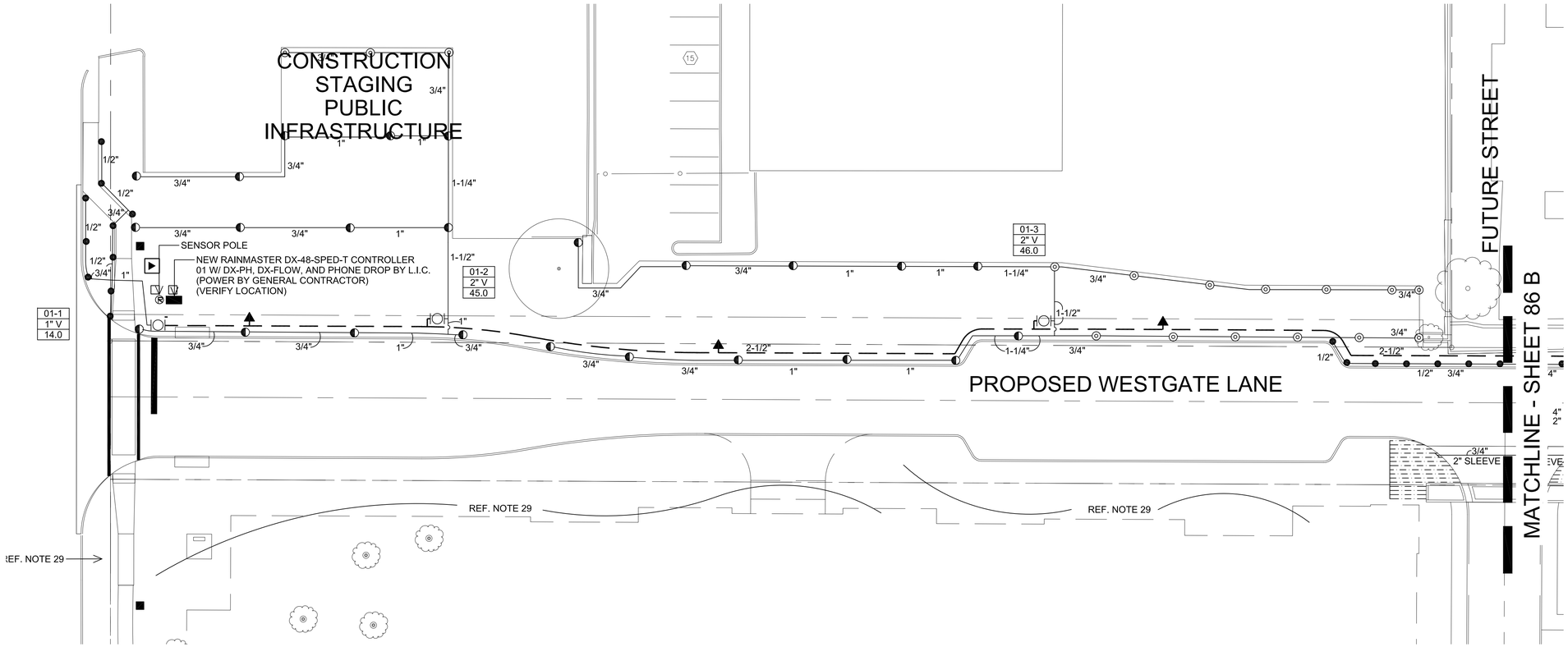
DESIGN	DRAWN	DATE	SCALE	NOTES	Sheet No.
SAH	SAH	OCT 13, 2016	AS NOTED		87

VITRUVIAN PARK BLOCK 200 PUBLIC INFRASTRUCTURE – PROJECT NO. 16071



Irrigation Plan - Westgate Lane | B

Scale: 1"=20'



Irrigation Plan - Westgate Lane | A

Scale: 1"=20'

SETH A. HEIDMAN
5881
LICENSED IRRIGATOR
STATE OF TEXAS
10-13-2016

SETH HEIDMAN
IRRIGATION DESIGN & CONSULTING, LLC
6609 W. Parker Rd. #149-221, Plano, Texas 75093 Tel: 972-816-5141

NORTH

0 10 20 30 40
GRAPHIC SCALE IN FEET
SCALE: 1"=20'

NO.	REVISION	BY	DATE

studioOutside
824 Exposition Avenue, Ste. 5
Dallas, Texas 75226
o214.954.7160
f214.954.7162

PAVING, DRAINAGE & UTILITY IMPROVEMENTS

VITRUVIAN PARK PUBLIC INFRASTRUCTURE BLOCK 200

TOWN OF ADDISON, TEXAS

IRRIGATION PLAN

WESTGATE LANE

DESIGN	DRAWN	DATE	SCALE	NOTES	Sheet No.
SAH	SAH	OCT 13, 2016	AS NOTED		86

Irrigation Plans must comply with the Texas Commission of Environmental Quality Rules, P.O. Box 13087, Austin, Texas, 78711-3087. TCEQ Website is: www.tceq.state.tx.us

VITRUVIAN PARK BLOCK 200 PUBLIC INFRASTRUCTURE – PROJECT NO. 16071

COMPLETE
ON HOLD
IN CONSTRUCTION
DESIGN

Projected Infrastructure Expenditures of Allocated Funding #2 by Project Phase

Improvements	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8	Phase 9	Total
Water	0	0	174,990	140,795	166,810	281,375	98,230	$862,200
Wastewater	0	0	122,495	98,555	116,765	196,962	68,760	$603,537
Drainage	0	0	560,000	450,550	533,785	900,395	314,346	$2,759,076
Misc. Utilities	0	0	402,497	323,830	383,660	647,160	225,937	$1,983,084
Street Paving	0	0	1,312,500	1,055,970	1,251,063	2,110,302	736,740	$6,466,575
Streetscape	442,530	0	927,495	746,220	884,085	1,491,280	520,630	$5,012,240
Vitruvian Way Imp.	0	0	250,000	0	0	187,500	187,500	$625,000
Marsh Imp.	0	0	168,750	0	151,875	168,750	0	$489,375
Screening Wall	241,230	0	0	828,750	0	0	0	$1,069,980
Restroom	326,466	0	0	0	0	0	0	$326,466
Alpha Road Connect	0	1,775,577	0	0	0	0	0	$1,775,577
FB Creek Improve.	90,000	0	0	0	0	0	0	$90,000
Future Park Area	0	0	0	0	0	250,000	0	$250,000
10% Design/Survey	0	0	391,875	364,466	348,805	623,375	215,220	$1,943,741
4% Inspection	0	0	156,750	145,785	139,520	249,350	86,085	$777,490
8% Constr. Mgmt.	0	0	313,500	291,575	279,043	498,700	172,170	$1,554,988
Totals	$1,100,226	$1,775,577	$4,780,852	$4,446,496	$4,255,411	$7,605,149	$2,625,618	$26,589,329

CERTIFICATE OF INTERESTED PARTIES

FORM 1295

Complete Nos. 1 - 4 and 6 if there are interested parties.
Complete Nos. 1, 2, 3, 5, and 6 if there are no interested parties.

OFFICE USE ONLY
CERTIFICATION OF FILING

Certificate Number:
2016-140029

Date Filed:
11/28/2016

Date Acknowledged:

1 Name of business entity filing form, and the city, state and country of the business entity's place of business.
Flow-Line Construction, Inc.
Dallas, TX United States

2 Name of governmental entity or state agency that is a party to the contract for which the form is being filed.
Town of Addison

3 Provide the identification number used by the governmental entity or state agency to track or identify the contract, and provide a description of the services, goods, or other property to be provided under the contract.
2016-09
Vitruvian Park Public Infrastructure - Block 200

4 Name of Interested Party	City, State, Country (place of business)	Nature of interest (check applicable)	
		Controlling	Intermediary
Hernandez, Eduardo	Dallas, TX United States	X	

5 Check only if there is NO Interested Party. ☐

6 AFFIDAVIT

CARTER EDMOND POE
Notary ID 13069897-6
My Commission Expires
June 13, 2020

I swear, or affirm, under penalty of perjury, that the above disclosure is true and correct.

Signature of authorized agent of contracting business entity

AFFIX NOTARY STAMP / SEAL ABOVE

Sworn to and subscribed before me, by the said Eduardo Hernandez, this the 28 day of November 20 16, to certify which, witness my hand and seal of office.

Carter Edmond Poe	Carter Edmond Poe	Notary Public
Signature of officer administering oath	Printed name of officer administering oath	Title of officer administering oath

AI-2031 **11.**

Work Session and Regular Meeting

Meeting Date: 01/10/2017

Department: Infrastructure- Development Services

AGENDA CAPTION:

Hold A Public Hearing, Discuss, And Consider Action On An **Ordinance Rezoning The Property Located At 15099 Midway Road, At The Southwest Corner At The Intersection Of Belt Line Road And Midway Road, Which Is Currently Zoned LR, Local Retail, By Amending An Existing Special Use Permit For A Restaurant And An Existing Special Use Permit For The Sale Of Alcoholic Beverages For On-Premises Consumption Only In Order To Approve A Revised Site Plan Including An Outdoor Patio**. Case 1740-SUP/Starbucks.

BACKGROUND:

The Addison Planning and Zoning Commission, meeting in regular session on December 19, 2016, voted to recommend approval of an ordinance changing the zoning on property located at 15099 Midway Road, which is currently zoned LR, Local Retail, by amending an existing Special Use Permit for a restaurant and an existing Special Use Permit for the sale of alcoholic beverages for on-premises consumption only in order to approve a revised site plan including an outdoor patio, subject to no conditions.

Voting Aye: Griggs, Ennis, Morgan, Robbins, Robinson, Schaeffer
Voting Nay: none
Absent: Smith

SPEAKERS AT THE PUBLIC HEARING: none

Please refer to the attached staff report for additional information on this case.

RECOMMENDATION:

Administration recommends approval.

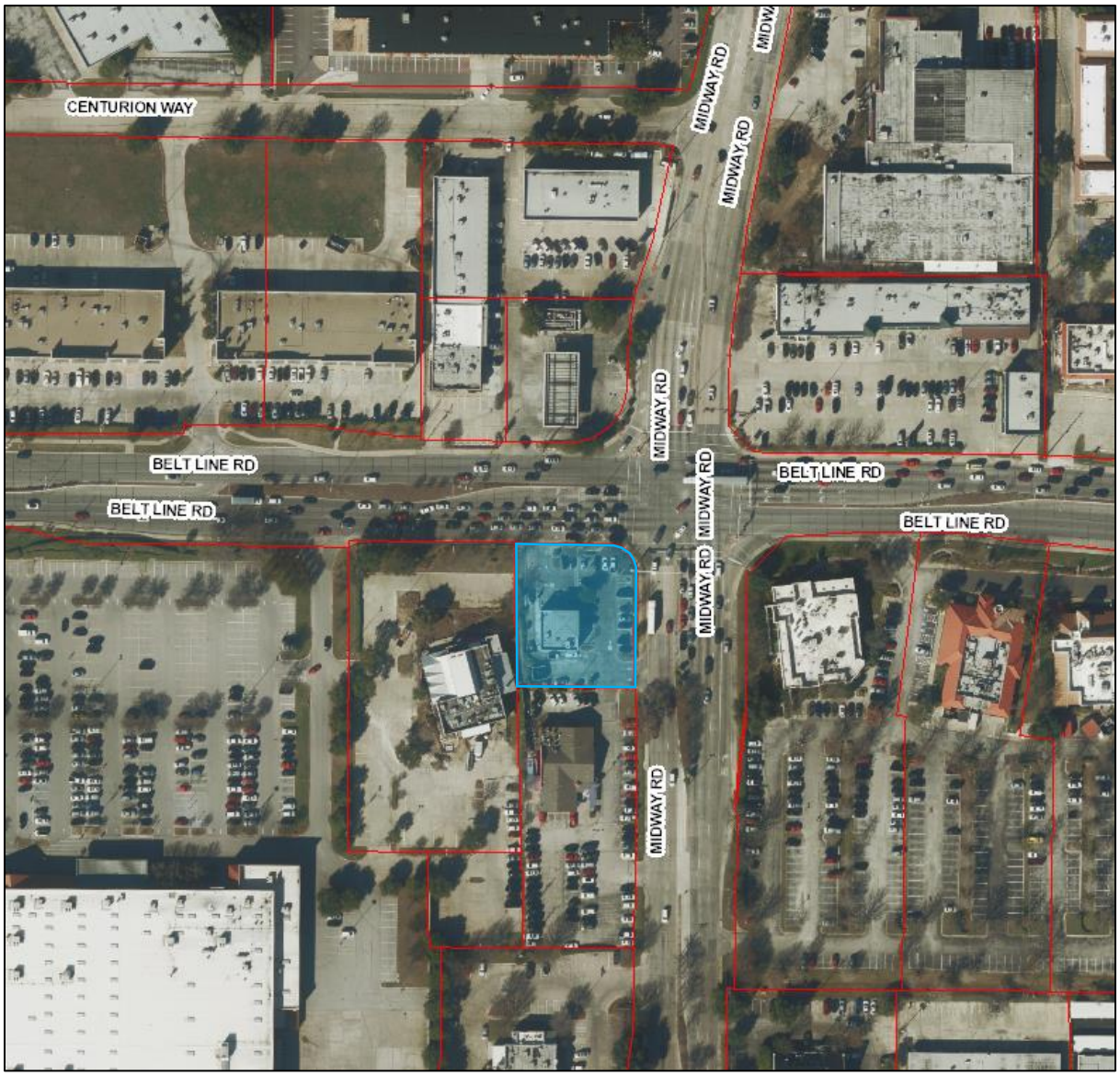
Attachments

1740-SUP Staff Report
1740-SUP Plans
1740-SUP Ordinance

1740-SUP

PUBLIC HEARING Case 1740-SUP/Starbucks. Public hearing, discussion, and take action on a recommendation regarding an ordinance changing the zoning on property located at 15099 Midway Road, which property is currently zoned LR, Local Retail, by amending an existing Special Use Permit for a restaurant and an existing Special Use Permit for the sale of alcoholic beverages for on-premises consumption only in order to approve a patio.

LOCATION MAP



July 15, 2016

STAFF REPORT

RE:	Case 1740-SUP/Starbucks
LOCATION:	15099 Midway Road
REQUEST:	Approval of an amendment to the existing Special Use Permit for a restaurant and Special Use Permit for the sale of alcoholic beverages for on-premises consumption only.
APPLICANT:	Starbucks represented by Julie Martin of CM Architects.

DECEMBER 15, 2016 UPDATE:

This item was tabled at the July P&Z meeting after the Commission expressed concerns about vehicular circulation on the property and the impact to traffic on Belt Line Road. The Commission requested that the applicant investigate a more effective solution for blocking ingress to the site from Belt Line Road. To accommodate this request, the applicant is proposing to reconstruct the drive approach and convert it to a hooded, exit-only design. This is reflected on the revised site plan. The new design will also allow for additional landscaping on the site. Staff believes that this addresses the Commission's concerns.

DISCUSSION:

Background: This property is zoned Local Retail. The site was developed as a gas station in the late 1970s. After siting vacant for several years, an SUP was approved for the gas station to be redeveloped into a Starbucks with drive-through service in 2005.

Proposed Plan: Although a patio was never formally approved, the site has had outdoor seating for several years. This issue was recently raised when the applicant submitted remodel permits showing the existing exterior patio. Staff could not approve the plans showing the patio, as this was not contemplated in the existing SUP. The applicant is proposing to revise their site plan to incorporate a patio area of 127 square feet with seating for 10. This is represents a slight reduction from the patio area and amount of seating existing currently. This was necessary in order to meet parking requirements.

Parking: The interior of the Starbucks is 1,744 square feet. The proposed patio is 127 square feet. This results in a total of 1,871 square feet. Restaurants in the Local Retail district are required to have parking at a ratio of 1 space per 70 square feet. This results in 27 parking spaces being required which is equal to the number of spaces provided on the site.

RECOMMENDATION: **APPROVAL**

Staff recommends approval of the request subject to no conditions.

Case 1740-SUP/Starbucks
December 19, 2016

COMMISSION FINDINGS:

The Addison Planning and Zoning Commission, meeting in regular session on December 19, 2016, voted to recommend approval of an ordinance changing the zoning on property located at 15099 Midway Road, which is currently zoned LR, Local Retail, by amending an existing Special Use Permit for a restaurant and an existing Special Use Permit for the sale of alcoholic beverages for on-premises consumption only in order to approve a revised site plan including an outdoor patio, subject to no conditions.

Voting Aye: Griggs, Ennis, Morgan, Robbins, Robinson, Schaeffer
Voting Nay: none
Absent: Smith

SPEAKERS AT THE PUBLIC HEARING:

For: none
On: none
Against: none

ABBREVIATIONS

3PL	THIRD PARTY LOGISTICS	ID	INSIDE DIAMETER
ABS	ACRYLONITRILE BUTADIENE STYRENE	IF	INSIDE INTERIOR FACE
		IG	INDEPENDENT GROUND
A/C	AIR CONDITIONING	INSUL	INSULATION
ACC	ACCESSIBLE	INFO	INFORMATION
ACT	ACOUSTICAL CEILING TILE	IW	INDIRECT WASTE
ADJ	ADJUSTABLE	JC	JOB CAPTAIN
AFF	ABOVE FINISHED FLOOR	LL	LANDLORD
AHJ	AUTHORITIES HAVING JURISDICTION	MAX	MAXIMUM
		MC	MECHANICAL CONTRACTOR
ALUM	ALUMINUM	MDF	MEDIUM DENSITY FIBERBOARD
AMP	AMPERAGE		
APPROX	APPROXIMATE	MECH	MECHANICAL
ARCH	ARCHITECTURAL	MEP	MECHANICAL, ELECTRICAL AND PLUMBING
BD	BOARD		
BLDG	BUILDING	MERCH	MERCHANDISE UNIT
BLKG	BLOCKING	MFG	MANUFACTURER
BOB	BOTTOM OF BEAM	MIN	MINIMUM
BOH	BACK OF HOUSE	MLDG	MOULDING
CAB	CABINET	MTL	METAL
CD	CONDENSATE DRAIN	NAT	NATURAL
CKT	CIRCUIT	NIC	NOT IN CONTRACT
CL	CENTER LINE	NL	NIGHT LIGHT
CLG	CEILING	NSF	NATIONAL SANITATION FOUNDATION
CLR	CLEAR/CLEARANCE		
CM	CONSTRUCTION MANAGER	NTS	NOT TO SCALE
CMNT	CEMENT	OA	OVERALL
CMU	CONCRETE MASONRY UNIT	OC	ON CENTER
CNTRS	CENTERS	OD	OUTSIDE DIAMETER
CO	COMPANY	OF	OUTSIDE FACE
CTR	CENTER	OFI	OWNER FURNISHED ITEM
COL	COLUMN	OF/CI	OWNER FURNISHED /CONTRACTOR INSTALLED
COMP	COMPARTMENT		
CONC	CONCRETE	OF/OI	OWNER FURNISHED /OWNER INSTALLED
CONT	CONTINUOUS		
CONST	CONSTRUCTION	OPNG	OPENING
CT	CERAMIC TILE	PC	PLUMBING CONTRACTOR
CW	COLD WATER	PD	PRODUCTION DESIGNER
CWF	COLD WATER FILTERED	PERP	PERPENDICULAR
CWN	COLD WATER NANO FILTERED	PLAM	PLASTIC LAMINATE
CWS	COLD WATER SOFTTENED	PLCS	PLACES
CXFMR	CURRENT TRANSFORMER	PL	PLACE
CX	COMMISSIONING	PLEX	PLEXIGLASS
CXA	COMMISSIONING AGENT	PLYWD	PLYWOOD
DEG	DEGREES	PM	PROJECT MANAGER
DIA	DIAMETER	POC	POINT OF CONNECTION
DIM	DIMENSION	POS	POINT OF SALE
DISP	DISPENSER	PT	PAINT
DM	DESIGN MANAGER	QT	QUARRY TILE
DN	DOWN	R	RADIUS
DT	DRIVE THRU	RCM	RENOVATIONS CONSTRUCTION MANAGER
DTL	DETAIL		
DW	DISHWASHER		
DWG(S)	DRAWING(S)	RECEPT	RECEPTACLE
EA	EACH	REF	REFERENCE
EC	ELECTRICAL CONTRACTOR	REFRIG	REFRIGERATOR
ELEC	ELECTRICAL	REQ('D)	REQUIRE(D)
ELEV	ELEVATION	REV	REVISED/REVISION
EQ	EQUAL	RND	ROUND
EQUIP	EQUIPMENT	RO	REVERSE OSMOSIS
EXIST	EXISTING	SB	STARBUCKS
EXP	EXPOSED	SC	SOLID CORE
EXT	EXTERIOR	SF	SQUARE FEET
FCO	FLOOR CLEANOUT	SHT	SHEET
FF&E	FURNITURE, FIXTURES & EQUIPMENT	SHT MTL	SHEET METAL
		SIM	SIMILAR
FI	FURNITURE INITIATIVES	SOL	SOLID
FN	FINISHED	SPEC	SPECIFICATION
FIO	FURNISHED & INSTALLED BY OWNER	SQ	SQUARE
		SS	STAINLESS STEEL
FIXT	FIXTURE	STG	STORAGE
FLEX	FLEXIBLE	STRUCT	STRUCTURAL
FOC	FACE OF CABINET	STL	STEEL
FOG	FACE OF GLAZING	SUSP	SUSPENDED
FOH	FRONT OF HOUSE	SW	SOFTENED WATER
FOIC	FURNISHED BY OWNER INSTALLED BY CONTRACTOR	T&G	TONGUE AND GROOVE
		TEL	TELEPHONE
FOS	FACE OF STUD	TEMP	TEMPORARY
FRP	FIBERGLASS REINFORCED PANEL	TW	TEMPERED WATER
		TYP	TYPICAL
FLR	FLOOR	UC	UNDERCOUNTER
FT	FOOT/FEET	UON	UNLESS OTHERWISE NOTED
FV	FIELD VERIFY	V	VENT
GA	GAUGE	VAL	VALIDATION
GALV	GALVANIZED	VCT	VINYL COMPOSITION TILE
GC	GENERAL CONTRACTOR	VD	VENDOR DIRECT
GRND	GROUND	VERT	VERTICAL
GWB	GYPSUM WALLBOARD	VIF	VERIFY IN FIELD
HC	HOLLOW CORE	VT	VINYL TILE
HD	HEAD	WD	WOOD
HDR	HEADER	WH	WATER HEATER
HDWD	HARDWOOD	WMV	WHITE MAPLE VENEER
HDWR	HARDWARE	XFMR	TRANSFORMER
HM	HOLLOW METAL		
HOP	HAND OFF PLANE		
HORIZ	HORIZONTAL		
HR	HOUR		
HT	HEIGHT		
HVAC	HEATING VENTILATING AIR CONDITIONING		
HW	HOT WATER		

ARCHITECTURAL SYMBOL LEGEND

- NORTH ARROW
- EXTERIOR ELEVATION
- INTERIOR ELEVATION
- SECTION CALLOUT
- DETAIL CALLOUT
- X' XX" — DIMENSION LINE FROM FINISH FACE TO FINISH FACE
- PXXX-ES — PAINT TAG
- XXXXXX — DESIGN ID TAG
- WXXXXX — WINDOW TAG
- X'-XX" AFF — ABOVE FINISHED FLOOR HEIGHT TAG (IMPERIAL)
- XXXX AFF — ABOVE FINISHED FLOOR HEIGHT TAG (METRIC)
- REVISION CLOUD
- X — REVISION TAG
- DATUM POINT

CODES

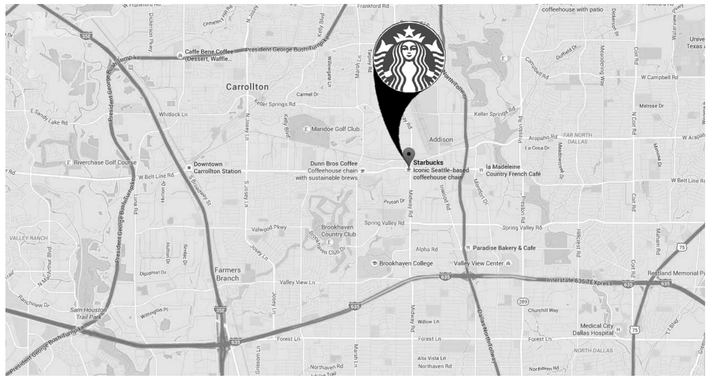
CODE AUTHORITIES:	CITY OF ADDISON, TX
BUILDING CODE:	2012 INTERNATIONAL BUILDING CODE
PLUMBING CODE:	2012 INTERNATIONAL PLUMBING CODE/ 2012 INTERNATIONAL PRIVATE SEWAGE DISPOSAL CODE
MECHANICAL CODE:	2012 INTERNATIONAL MECHANICAL CODE
ELECTRICAL CODE:	2014 NATIONAL ELECTRICAL CODE
FIRE CODE:	2012 INTERNATIONAL FIRE CODE WITH AMENDMENTS
ENERGY CODE:	2012 INTERNATIONAL ENERGY CONSERVATION CODE
ACCESSIBILITY CODE:	2012 TAS

APPROVAL STAMPS

TDLR REGISTRATION NUMBER

EABPRJB6815577

LOCATION MAP



AERIAL MAP



SITE AND OCCUPANCY

ZONING:	LR – LOCAL RETAIL; 66; SUP ORDINANCE ID: 005-021 - RESTAURANT SPECIAL USE ALCOHOL SALES
TYPE OF USE:	RETAIL SALES AND SERVICES
TYPE OF OCCUPANCY:	B
TYPE OF CONSTRUCTION:	II-B
SPRINKLERED	
INTERIOR NET AREA:	**1,744 SF**
OUTDOOR SEATING AREA:	**127 SF**
TOTAL AREA:	**1,871 SF / 70**
TOTAL PARKING SPACES REQUIRED:	**26.73 SPACES**
TOTAL PARKING:	**27 SPACES**

OCCUPANT LOAD:				
	BACKBAR	410 SF	/200	= 03
	CAFE SEATING			
	UNCONCENTRATED	223 SF	/15	= 15
	FIXED	18 LF	/2	= 09
	SALES	269 SF	/30	= 09
	WORKROOM	460 SF	/300	= 02
TOTAL INTERIOR OCCUPANT LOAD:				38

TOTAL INTERIOR SEATING: =35 (2 ACC)
TOTAL EXTERIOR SEATING: =10 (1 ACC)

PLUMBING FIXTURE CALCULATION (PER TABLE 2902.1)
OCCUPANT FIXTURE LOAD: 35 + 2 + 10 + 3 = 50
REQUIRED FIXTURE TO OCCUPANT RATIO:
1 PER 25 FOR FIRST 50, AND 1 PER 50 FOR THE REMAINDER
REQUIRED NUMBER OF FIXTURES: (MALE/FEMALE) (1/1)
PROVIDED NUMBER OF FIXTURES: (MALE/FEMALE) (1/1)

LEGAL DESCRIPTION

ADDISON PLAZA BLK 1 LT 1A ACS 0.5219
VOL2004009/6138 DD01142004 CO-DC
0007000101A00 3CA00070001

SCOPE OF WORK

PROJECT DESCRIPTION: NEW OUTDOOR SEATING

INDEX OF SHEETS

SHEET	SHEET TITLE
GENERAL	
G-0001	GENERAL INFORMATION
G-0002	TAS (FOR REFERENCE ONLY)
G-0003	TAS (FOR REFERENCE ONLY)
CIVIL	
C-1.1	PAVING & GRADING PLAN
C-2.1	GRADING PLAN & PAVING DETAILS
ARCHITECTURAL	
A-1000	DEMOLITION SITE PLAN
A-1001	ARCHITECTURAL SITE PLAN
INTERIORS	
I-1101	OUTDOOR SEATING PLAN

GENERAL NOTES

1. GENERAL CONTRACTOR SHALL VISIT THE SITE, REVIEW THE BUILDING SHELL DRAWINGS AS SUBMITTED BY THE LANDLORD OR STARBUCKS SITE SURVEYOR, AND BECOME THOROUGHLY FAMILIAR WITH THE SITE CONDITIONS PRIOR TO BIDDING OR CONSTRUCTION.

2. GENERAL CONTRACTOR SHALL CONSULT WITH STARBUCKS CONSTRUCTION MANAGER TO RESOLVE ANY CHANGES, OMISSIONS, OR PLAN DISCREPANCIES PRIOR TO BIDDING OR CONSTRUCTION.

3. ALL WORK SHALL BE PERFORMED IN STRICT COMPLIANCE WITH LOCAL, COUNTY, STATE, AND FEDERAL CODES AND ORDINANCES.

4. GENERAL CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES.

5. GENERAL CONTRACTOR TO VERIFY ALL DIMENSIONS, INCLUDING CLEARANCES REQUIRED BY OTHER TRADES, AND NOTIFY STARBUCKS CONSTRUCTION MANAGER OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK. ALL DIMENSIONS ARE TO THE FACE OF THE FINISHED SURFACE UNLESS NOTED OTHERWISE. ALL DIMENSIONS TO BE TAKEN FROM DESIGNATED DATUM POINT. DO NOT SCALE DRAWINGS.

6. GENERAL CONTRACTOR SHALL PATCH AND REPAIR ALL EXISTING WALLS, FLOORS, CEILINGS, OR OTHER SURFACES IDENTIFIED TO REMAIN THAT MAY BECOME DAMAGED DURING THE COURSE OF THE WORK.

7. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR OBTAINING PERMITS FOR FIRE PROTECTION, PLUMBING, MECHANICAL, AND ELECTRICAL SYSTEMS PRIOR TO INSTALLATION OF SUCH SYSTEMS.

8. GENERAL CONTRACTOR SHALL RETAIN ONE SET OF THE PLANS TO NOTE AND DOCUMENT ALL CHANGES DURING CONSTRUCTION. THIS SET SHALL BE A PART OF THE GENERAL CONTRACTOR'S "STORE CLOSE-OUT PACKAGE" AS DESCRIBED IN THE CONSTRUCTION MANAGEMENT AGREEMENT.

9. GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING DELIVERY OF MATERIALS FROM STARBUCKS CONTRACTED THIRD PARTY LOGISTICS DISTRIBUTION SERVICES AND VENDOR DIRECT SHIPMENTS. REFER TO CONSTRUCTION MANAGEMENT AGREEMENT FOR METHODS AND LEAD TIMES.

10. RESPONSIBILITY FOR SUPPLY AND DELIVERY OF MATERIALS AND EQUIPMENT IS IDENTIFIED IN THE DRAWING SCHEDULE SHEETS UNDER THE COLUMN LABELED 'RESPONSIBILITY'. "GC" MEANS THE ITEM IS TO BE SUPPLIED BY THE GC. "3PL" MEANS AN ITEM IS SUPPLIED BY STARBUCKS VIA STARBUCKS CONTRACTED DISTRIBUTION SERVICE AND "VD" MEANS SUPPLIED BY STARBUCKS AND SHIPPED DIRECTLY TO THE SITE FROM THE VENDOR.

11. FOR THE PURPOSE OF THE DOCUMENTS, TO "INSTALL", SHALL MEAN TO PROVIDE ALL FASTENERS, MISCELLANEOUS HARDWARE, BLOCKING, ELECTRICAL CONNECTIONS, PLUMBING CONNECTIONS, AND OTHER ITEMS REQUIRED FOR A COMPLETE AND OPERATION INSTALLATION, UNLESS OTHERWISE NOTED.

12. ALL ITEM SUBSTITUTIONS MUST BE APPROVED BY THE STARBUCKS DESIGN MANAGER.

13. REFER TO ITEM CUTSHEETS FOR ADDITIONAL INFORMATION.

14. ALL INTERIOR WOOD BLOCKING, INTERIOR WOOD STRUCTURAL MEMBERS, EXTERIOR WOOD AND EXTERIOR PLYWOOD TO BE FIRE RETARDANT TREATED.

15. IF REQUIRED, FIRE SUPPRESSION AND SPRINKLER DRAWINGS TO BE COORDINATED BY GC AND SUBMITTED UNDER SEPARATE PERMIT.

16. STARBUCKS CONTRACTS DIRECTLY WITH SIGNAGE CONTRACTOR TO PERMIT, SUPPLY AND INSTALL SIGNAGE. SIGNAGE CONTRACTOR TO VERIFY SIGNAGE COMPLIANCE WITH LOCAL CODES AND OBTAIN PERMIT AND LANDLORD APPROVAL. ANY SIGNAGE WORK IS UNDER A SEPARATE PERMIT.

17. GENERAL CONTRACTOR IS RESPONSIBLE TO REVIEW ALL SHEETS FOR SCOPE OF WORK.

PROJECT CONTACTS

MAILING ADDRESS: STARBUCKS COFFEE COMPANY
2401 UTAH AVENUE SOUTH
MS STOP: S-SD10
SEATTLE, WASHINGTON 98134
(206) 318-1575

PROGRAM MANAGER: JERRY PHILLIPS
STARBUCKS COFFEE COMPANY
12750 MERIT DRIVE, SUITE 1400
DALLAS, TX 75251
(972) 383-5626 PHONE

DESIGN MANAGER: HYE REE S. KIM
STARBUCKS COFFEE COMPANY
12750 MERIT DRIVE, SUITE 1400
DALLAS, TX 75251
(972) 383-5638 PHONE

CONSTRUCTION MANAGER: KATHY TRAVIS
STARBUCKS COFFEE COMPANY
12750 MERIT DRIVE, SUITE 1400
DALLAS, TX 75251
(972) 383-5631 PHONE

LANDLORD: PIEDMONT MIDWAY PARTNERS, LP
CONTACT: ROBERT L. MENCKE
3400 CARLISLE, SUITE 445
DALLAS, TX 75204
(214) 979-1125 PHONE

ARCHITECT OF RECORD: CMA
CONTACT: CHRIS OSBORNE
6060 NORTH CENTRAL EXPRESSWAY
SUITE 850
DALLAS, TX 75206
(214) 466-1192 PHONE
(214) 466-1197 FAX

MEP CONSULTANT OF RECORD: SALAS O'BRIEN
CONTACT: KEITH GASSMAN
1425 GREENWAY DR., SUITE 640
IRVING, TX 75038
(972) 812-1270 PHONE
(972) 812-1271 FAX

CIVIL CONSULTANT OF RECORD: LOBSINGER & POTTS STRUCTURAL ENGINEERS, INC.
CONTACT: JUSTIN BRAMMER
1723 E. SOUTHLAKE BLVD., SUITE 200
SOUTHLAKE, TX 76092
(817) 897-3611 PHONE
(817) 488-9937 FAX

ARCHITECT'S CERTIFICATION

I HEREBY CERTIFY THAT THE PORTION OF THIS TECHNICAL SUBMISSION DESCRIBED BELOW WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND RESPONSIBLE CHARGE. I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF **TEXAS**.

PAGES OR SHEETS COVERED BY THIS SEAL :

THE FOLLOWING ARCHITECTURAL DRAWINGS SHEETS:

G-0001	A-1000
G-0002	A-1001
G-0003	I-1101

RESPONSIBILITY LEGEND

SB / GC	FURNISHED BY STARBUCKS (WAREHOUSE OR VENDOR DIRECT) / INSTALLED BY GENERAL CONTRACTOR
SB / SB	FURNISHED BY STARBUCKS (WAREHOUSE OR VENDOR DIRECT) / INSTALLED BY STARBUCKS VENDOR
GC / GC	FURNISHED BY GENERAL CONTRACTOR / INSTALLED BY GENERAL CONTRACTOR
LL / LL	FURNISHED BY LANDLORD / INSTALLED BY LANDLORD

Starbucks Coffee Company
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Architect of Record

CMA architecture • planning • interior design

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BRUCE M. CARLSON

REGISTERED ARCHITECT — BRUCE M. CARLSON — 13057 — STATE OF TEXAS

PERMIT SET

BRUCE M. CARLSON — SIGNATURE
5/02/2016 — DATE ISSUED
13057 — REG. NO.

ISSUE SCHEDULE

5/02/2016	PERMIT SET
	BID SET

REVISION SCHEDULE

REV	DATE	BY	DESCRIPTION
1	06.10.16		SPECIAL USE PERMIT - OUTDOOR SEATING
2	07.08.16		SPECIAL USE PERMIT - OUTDOOR SEATING - FINAL
3	11.21.16		SPECIAL USE PERMIT - OUTDOOR SEATING - FINAL
4	12.09.16		SPECIAL USE PERMIT - OUTDOOR SEATING - FINAL

PROJECT NAME: MIDWAY & BELTLINE OUTDOOR SEATING SUBMITTAL - FINAL
15099 MIDWAY RD
ADDISON, TX 75244
COUNTY: DALLAS

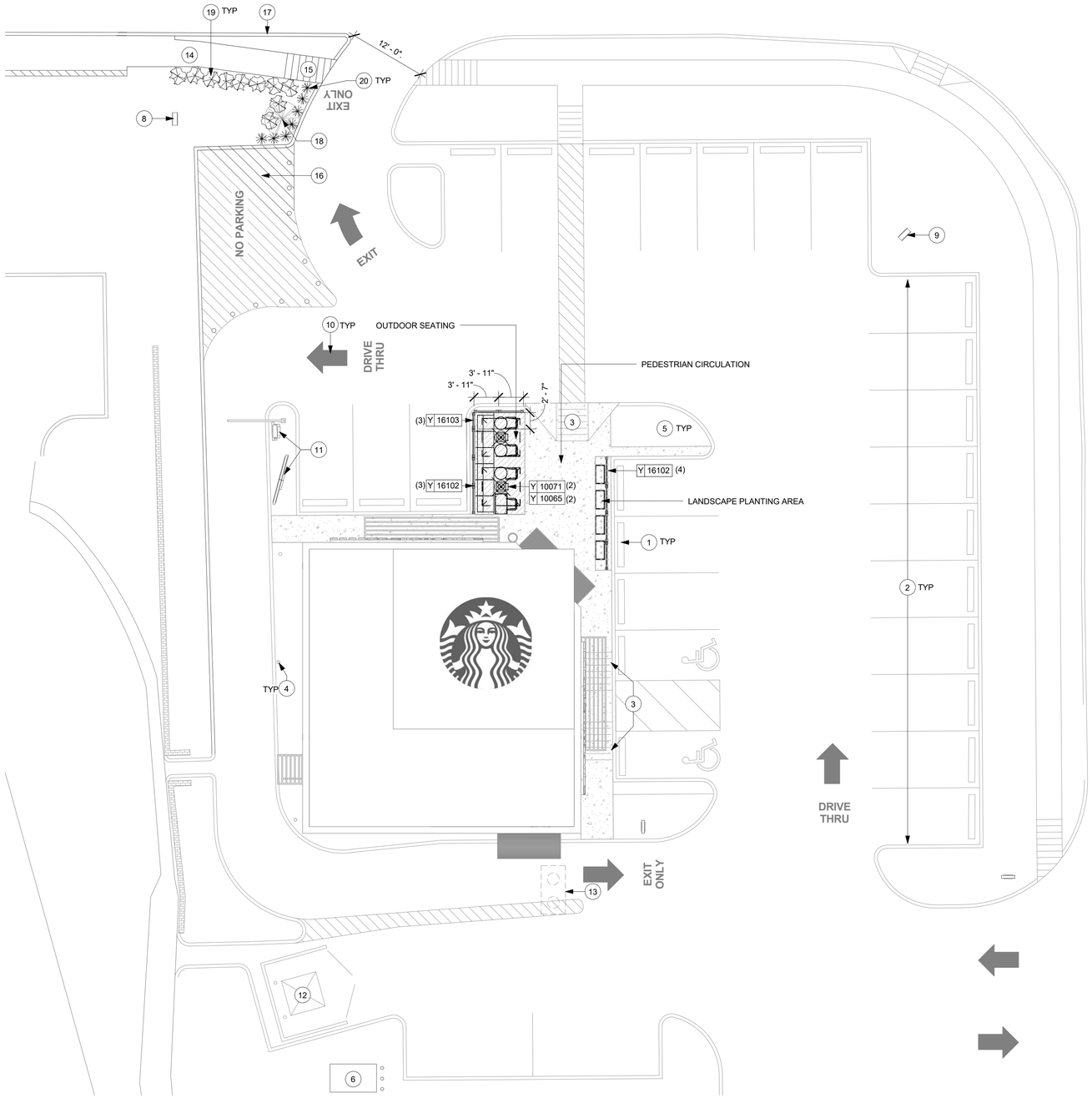
STORE #: 9443
CPN/PROJECT #: 25373-049
CMA PROJECT #: 16104.013
CONCEPT: MCS/DTE
DESIGN MANAGER: HYE REE KIM
CONSTRUCTION MANAGER: KATHY TRAVIS

SHEET TITLE:
GENERAL INFORMATION

SHEET NUMBER: G-0001

ISSUE DATE: 5/02/2016

12/9/2016 3:38:38 PM
V:\SBUX\PROJECTS\RENO\16104\16104.013_Midway & Beltline - Addison, TX\Drawings\Work in Progress\16104.013_Midway & Beltline_A_2015_SUP ONLY.rvt



1 SITE PLAN

Scale: 1" = 10'-0"

SHEET NOTES (1)

1. EXISTING WHEEL STOPS
2. EXISTING PARKING STRIPES
3. EXISTING HANDICAP RAMP
4. EXISTING BOLLARD
5. EXISTING LANDSCAPE
6. EXISTING TRANSFORMER
7. EXISTING MENU BOARD
8. EXISTING DIRECTIONAL SIGN
9. EXISTING MONUMENT SIGN
10. EXISTING DIRECTIONAL PAVEMENT GRAPHICS
11. EXISTING DRIVE-THRU EQUIPMENT
12. EXISTING DUMPSTER ENCLOSURE. LOCKABLE USING STEEL GATES OR CHAIN. COORDINATE WITH STARBUCKS CM.
13. APPROXIMATE LOCATION OF EXISTING GREASE TRAP
14. NEW ADA/TAS COMPLIANT SIDEWALK, REFER TO G-0002 AND G-0003
15. NEW ADA/TAS COMPLIANT RAMP, REFER TO G-0002 AND G-0003
16. RESTRIPE "NO PARKING" AS REQUIRED
17. NEW CURB, REFER TO CIVIL
18. NEW CREPE MYRTLE; GC TO VERIFY COMPLIANCE WITH CITY REGULATIONS
19. NEW BOXWOOD SHRUBS; GC TO VERIFY COMPLIANCE WITH CITY REGULATIONS
20. NEW LINDHEIMER GRASS; GC TO VERIFY COMPLIANCE WITH CITY REGULATIONS

ARCHITECTURAL SITE PLAN GENERAL NOTES

A. REFER TO EXTERIOR ELEVATIONS FOR BUILDING SIGNAGE LOCATION AND DESIGN ID. REFER TO ELECTRICAL PLANS FOR ELECTRICAL REQUIREMENTS

B. ALL SIGNAGE TO BE PERMITTED UNDER SEPARATE PERMIT.

C. STARBUCKS CONTRACTS DIRECTLY WITH SIGNAGE CONTRACTOR TO PERMIT, SUPPLY AND INSTALL SIGNAGE. SIGNAGE CONTRACTOR TO VERIFY SIGNAGE COMPLIANCE WITH LOCAL CODES AND OBTAIN PERMIT AND LANDLORD APPROVAL.

D. SIGNAGE CONTRACTOR SHALL VERIFY SIZE & LOCATION OF ANY & ALL ALLOWABLE MONUMENT OR POLE SIGNAGE WITH LANDLORD & PROVIDE SHOP DRAWING(S) PRIOR TO FABRICATION TO STARBUCKS DESIGNER FOR APPROVAL.

E. GC TO COORDINATE AND SCHEDULE SIGNAGE INSTALLATION WITH THE SIGNAGE CONTRACTOR PROVIDING A MINIMUM SCHEDULING NOTICE OF 4 WEEKS AND 1 WEEK PRIOR TO SCHEDULED DATE OF INSTALLATION. STARBUCKS CM TO PROVIDE GC WITH SIGNAGE CONTRACTOR CONTACT INFORMATION.

F. SIGNAGE CONTRACTOR TO SUPPLY SHOP DRAWINGS TO STARBUCKS CM AND TO THE GC AS NEEDED. GC TO NOTIFY STARBUCKS CM IMMEDIATELY IF SHOP DRAWINGS OR INSTALLATION IS IN DISCREPANCY WITH STARBUCKS ARCHITECTURAL DRAWINGS.

G. DO NOT SCALE DRAWINGS

SITE SCHEDULE - "Y"

DESIGN ID	COUNT	DESCRIPTION	RESP.	BULB	COMMENTS
OTHER					
16102	7	PARTITION MESH WITH WOOD TOP RAIL - 54IN 1370MM	SB / GC		REPLACE METAL MESH WITH WOOD PLANKS
16103	3	PARTITION MESH WITH WOOD TOP RAIL - VARIABLE	SB / GC		REPLACE METAL MESH WITH WOOD PLANKS; REFER TO PLAN
PLANTER					
14451	4	PLANTER - BOX - 36X18X18IN 915X455X455MM - BLACK	SB / GC		
UMBRELLA					
10065	2	UMBRELLA - 6FT 183CM - GREEN CANVAS WITH STARBUCKS WORDMARK F0056	SB / GC		
10071	2	UMBRELLA - BASE FOR 6FT 183CM	SB / GC		

N
TRUE

RESPONSIBILITY LEGEND

SB / GC	FURNISHED BY STARBUCKS (WAREHOUSE OR VENDOR DIRECT) / INSTALLED BY GENERAL CONTRACTOR
SB / SB	FURNISHED BY STARBUCKS (WAREHOUSE OR VENDOR DIRECT) / INSTALLED BY STARBUCKS VENDOR
GC / GC	FURNISHED BY GENERAL CONTRACTOR / INSTALLED BY GENERAL CONTRACTOR
LL / LL	FURNISHED BY LANDLORD / INSTALLED BY LANDLORD

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Architect of Record
CMA
architecture • planning • interior design

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BRUCE M. CARLSON

REGISTERED ARCHITECT BRUCE M. CARLSON 13057 STATE OF TEXAS

PERMIT SET

BRUCE M. CARLSON — SIGNATURE
5/02/2016 — DATE ISSUED
13057 — REG. NO.

ISSUE SCHEDULE

5/02/2016	PERMIT SET
	BID SET

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4	12.09.16		SPECIAL USE PERMIT - OUTDOOR SEATING - FINAL

PROJECT NAME:
MIDWAY & BELTLINE
OUTDOOR SEATING
SUBMITTAL - FINAL
15099 MIDWAY RD
ADDISON, TX 75244
COUNTY:
DALLAS

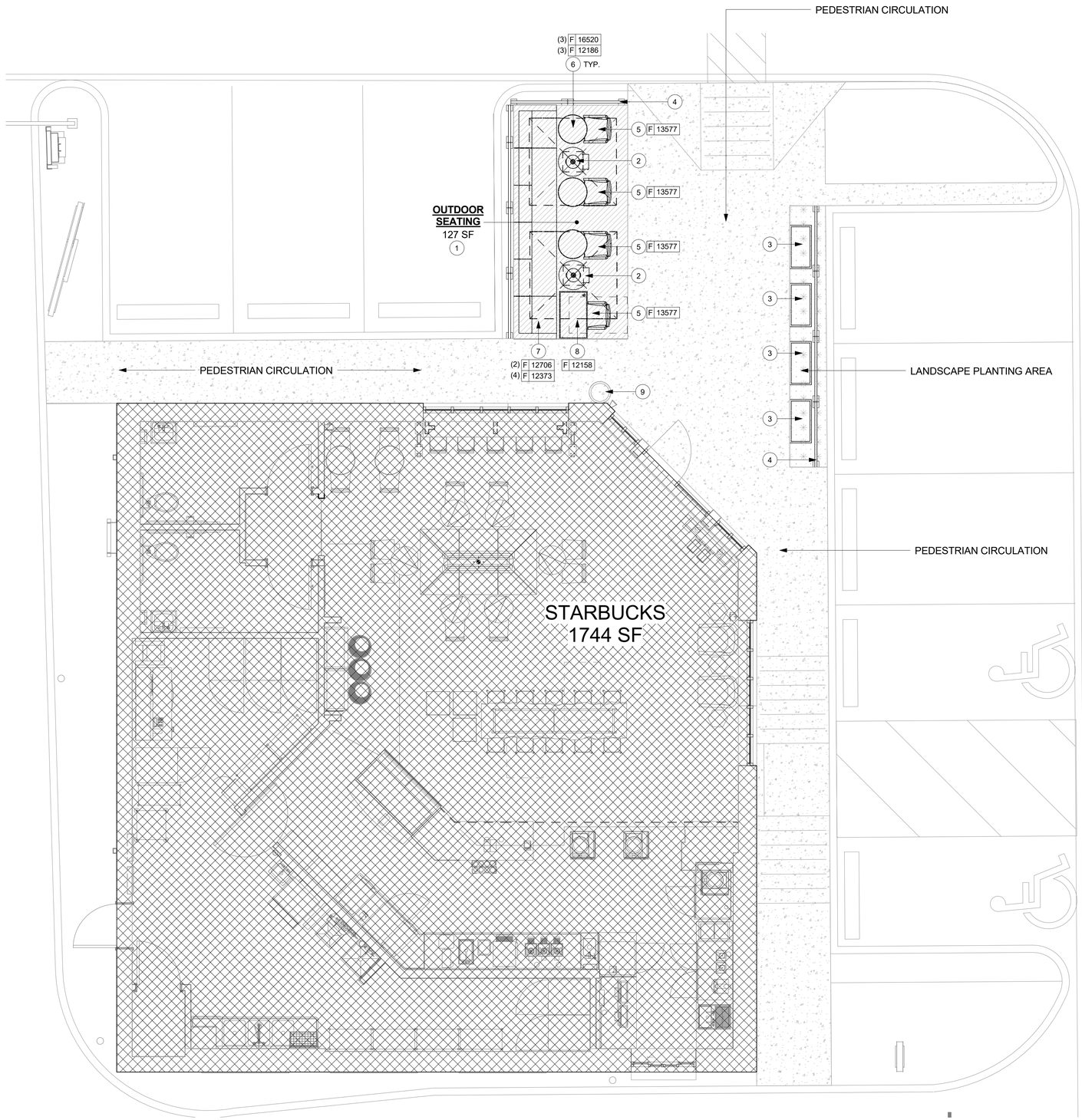
STORE #:	9443
CPN/PROJECT #:	25373-049
CMA PROJECT #:	16104.013
CONCEPT:	MCS/DTE
DESIGN MANAGER:	HYE REE KIM
CONSTRUCTION MANAGER:	KATHY TRAVIS

SHEET TITLE:
ARCHITECTURAL SITE PLAN

SHEET NUMBER:
A-1001

ISSUE DATE: 5/02/2016

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1 OUTDOOR SEATING PLAN

Scale: 1/4" = 1'-0"

SHEET NOTES (1)

1. THERE ARE NO TABLES DESIGNATED FOR SMOKING IN THE OUTDOOR SEATING AREA.
2. UMBRELLA AND BASE
3. PLANTERS
4. RAILING
5. OUTDOOR CHAIR
6. OUTDOOR TABLE
7. OUTDOOR SOFT SEATING
8. ADA TABLE
9. TRASH CAN

SITE LEGEND

STARBUCKS NET AREA

OUTDOOR SEATING AREA

PEDESTRIAN CIRCULATION

LANDSCAPE PLANTING AREA

PARKING REQUIREMENT:

BUILDING AREA:1,744 SF

SEATING AREA: 127 SF

TOTAL AREA: 1,871 SF

1,871 SF/ 70 =

26.73 PARKING SPACES

27 EXISTING PARKING SPACES

FURNITURE SCHEDULE - "F"

DESIGN ID	COUNT	DESCRIPTION	RESP.	COMMENTS
CHAIR				
12373	4	CHAIR - LOUNGE ARMLESS BASKET WEAVE - TAUPE WOVEN F0044	SB / GC	
12706	2	CHAIR - LOUNGE BASKET WEAVE SECTIONAL CORNER - TAUPE WOVEN F0044	SB / GC	
13577	4	CHAIR - CAFE MODERN WOVEN SUITE WITH ARMS - BLACK WEAVE F0045	SB / GC	
TABLE				
12158	1	TABLE - ACCESSIBLE METAL SUITE - 39X23IN 990X585MM - SILVER MT0021	SB / GC	
12186	3	TABLE - TOP ROUND - 24IN 610MM - WHITE WITH VEINING CP0002	SB / GC	

N
TRUE

Starbucks Coffee Company
2401 UTAH AVENUE SOUTH
SEATTLE, WASHINGTON 98134
(206) 318-1575

THESE PLANS AND SPECIFICATIONS, AS WELL AS STARBUCKS' NAME, LOGO, TRADEMARKS, AND DESIGNS ARE THE EXCLUSIVE PROPERTY OF STARBUCKS CORPORATION. ANY REPRODUCTION, MODIFICATION, DISCLOSURE, AND/OR USE OF THESE MATERIALS (OR ANY PORTION OF THEM) WITHOUT STARBUCKS' PRIOR WRITTEN CONSENT IS STRICTLY PROHIBITED.

Architect of Record
CMA
architecture • planning • interior design

I HEREBY CERTIFY THAT THE PORTIONS OF THIS TECHNICAL SUBMISSION BEARING MY SEAL AND SIGNATURE WERE PREPARED BY ME OR UNDER MY SUPERVISION AND RESPONSIBLE CHARGE. I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF TEXAS.

BRUCE M. CARLSON

REGISTERED ARCHITECT BRUCE M. CARLSON 13057 STATE OF TEXAS

PERMIT SET

BRUCE M. CARLSON — SIGNATURE

5/02/2016 — DATE ISSUED

13057 — REG. NO.

ISSUE SCHEDULE

5/02/2016	PERMIT SET
	BID SET

REVISION SCHEDULE

REV	DATE	BY	DESCRIPTION
1	06.10.16		SPECIAL USE PERMIT - OUTDOOR SEATING
2	07.08.16		SPECIAL USE PERMIT - OUTDOOR SEATING - FINAL
3	11.21.16		SPECIAL USE PERMIT - OUTDOOR SEATING - FINAL

PROJECT NAME:
MIDWAY & BELTLINE
OUTDOOR SEATING
SUBMITTAL - FINAL
15099 MIDWAY RD
ADDISON, TX 75244

COUNTY:
DALLAS

STORE #:	9443
CPN/PROJECT #:	25373-049
CMA PROJECT #:	16104.013
CONCEPT:	MCS/DTE
DESIGN MANAGER:	HYE REE KIM
CONSTRUCTION MANAGER:	KATHY TRAVIS

SHEET TITLE:
OUTDOOR SEATING PLAN

SHEET NUMBER:
I-1101

ISSUE DATE: 5/02/2016

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TOWN OF ADDISON, TEXAS

ORDINANCE NO. _____

AN ORDINANCE OF THE TOWN OF ADDISON, TEXAS, AMENDING ORDINANCE NO. O05-021, SO AS TO AMEND A SPECIAL USE PERMIT FOR A RESTAURANT AND A SPECIAL USE PERMINT FOR THE SALE OF ALCOHOLIC BEVERAGES FOR ON-PREMISES CONSUMPTION TO REVISE THE OUTDOOR PATIO AREA, ON PROPERTY LOCATED AT 15099 MIDWAY ROAD; PROVIDING A PENALTY NOT TO EXCEED TWO THOUSAND AND NO/100 DOLLARS ($2,000.00); AND PROVIDING FOR SAVINGS, SEVERABILITY AND AN EFFECTIVE DATE.

WHEREAS, at its regular meeting held on December 19, 2016, the Planning & Zoning Commission considered and made recommendations on a request for a Site Plan Amendment to existing Special Use Permits (Case No.1740-SUP); and

WHEREAS, this change of zoning is in accordance with the adopted Comprehensive Plan of the Town of Addison, as amended; and

WHEREAS, after due deliberations and consideration of the recommendation of the Planning and Zoning Commission, the information received at a public hearing, and other relevant information and materials, the City Council of the Town of Addison, Texas finds that this amendment promotes the general welfare and safety of this community.

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS:

Section 1. The recitals and findings set forth above are hereby found to be true and correct and incorporated as if fully set forth herein.

Section 2. That the Comprehensive Zoning Ordinance of the Town of Addison, Texas, is hereby amended by amending Ordinance O05-021, to remove the current site plan and add Exhibit A as included in this ordinance.

Section 4. The provisions of the Town of Addison Code of Ordinances, as amended, shall remain in full force and effect save and except as amended by this ordinance.

Section 5. Any person, firm, corporation, or other business entity violating any of the provisions or terms of this Ordinance shall, in accordance with Article XXVIII (Penalty for Violation) of the Zoning Ordinance, be fined, upon conviction, in an amount of not more than Two Thousand and No/100 Dollars ($2,000.00), and a separate offense shall be deemed committed each day during or on which a violation occurs or continues.

Section 6. The provisions of this Ordinance are severable, and should any section, subsection, paragraph, sentence, phrase or word of this Ordinance, or application thereof to any person, firm, corporation or other business entity or any circumstance, be adjudged or held to be unconstitutional, illegal or invalid, the same shall not affect the validity of the remaining or other parts or portions of this Ordinance, and the City Council hereby declares that it would have passed such remaining parts or portions of this Ordinance despite such unconstitutionality, illegality, or invalidity, which remaining portions shall remain in full force and effect.

Section 7. All ordinances of the City in conflict with the provisions of this Ordinance be, and the same are hereby repealed, and all other ordinances of the City not in conflict with the provisions of this Ordinance shall remain in full force and effect.

Section 8. This Ordinance shall become effective from and after its passage and approval and after publication as may be required by law or by the City Charter or ordinance.

PASSED AND APPROVED BY THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS, on this the 10th day of January 2017.

_____
Todd Meier, Mayor

ATTEST:

_____
Laura Bell, City Secretary

CASE NO: 1740-SUP/Starbucks

APPROVED AS TO FORM:

_____
Brenda N. McDonald, City Attorney

PUBLISHED ON: _____

EXHIBIT A

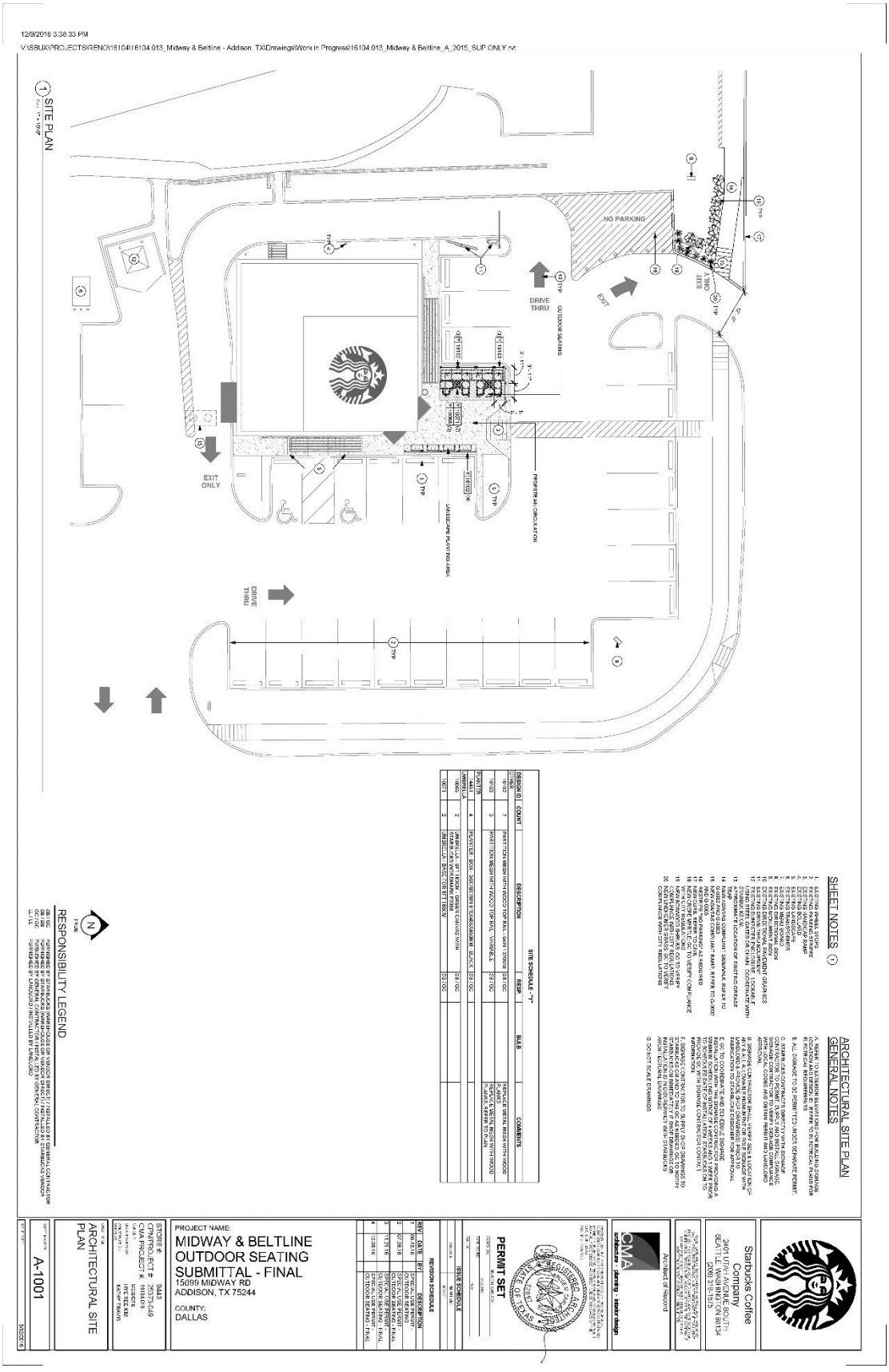
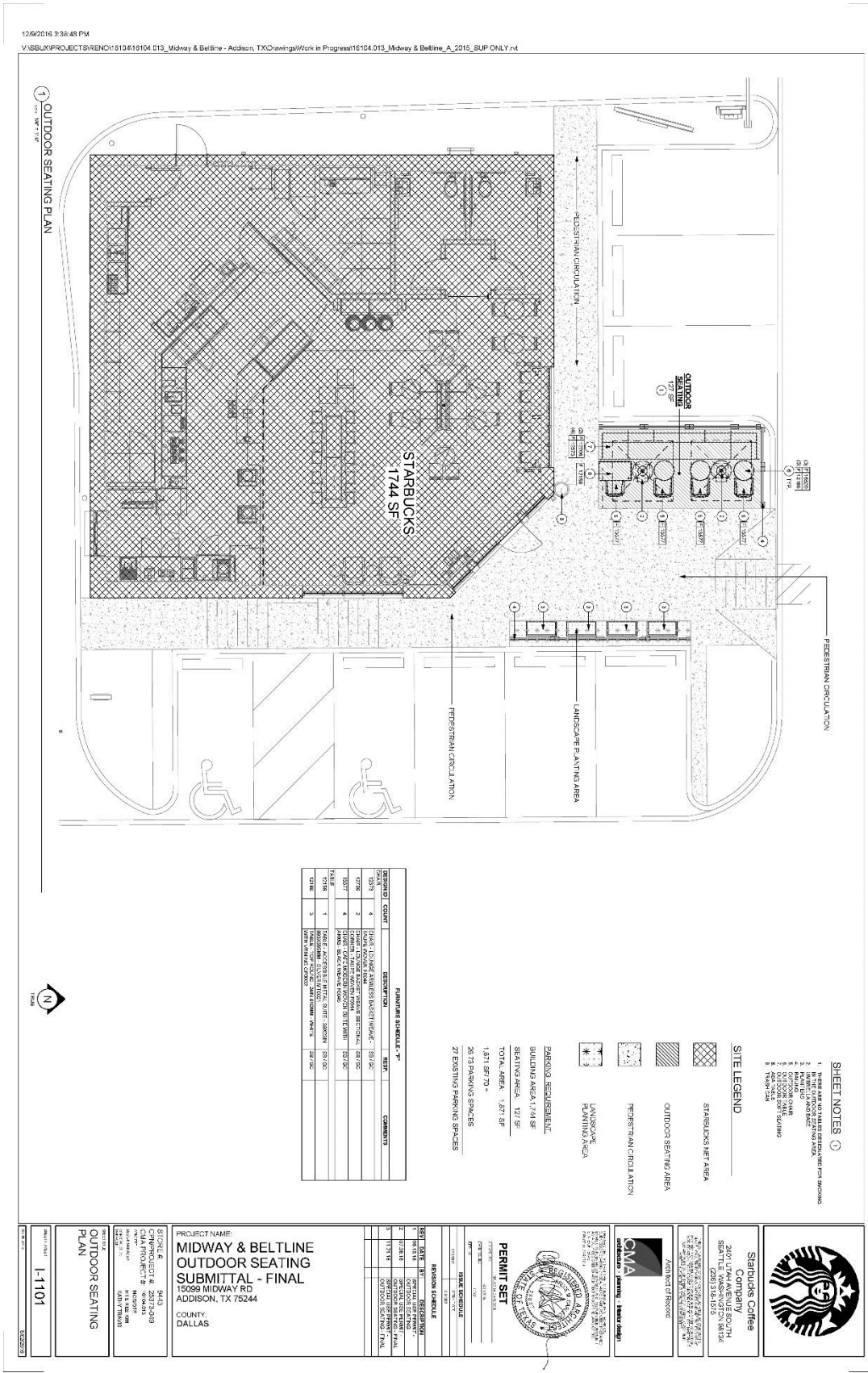

SITE PLAN
NO PARKING
DRIVE THRU
EXIT
EXIT ONLY
OUTDOOR SEATING
PEDESTRIAN CIRCULATION
LANDSCAPE PLANTING AREA
ARCHITECTURAL SITE PLAN
GENERAL NOTES
SHEET NOTES
RESPONSIBILITY LEGEND
PERMIT SET
MIDWAY & BELTLINE
OUTDOOR SEATING
SUBMITTAL - FINAL
15099 MIDWAY RD
ADDISON, TX 75244
DALLAS
Starbucks Coffee
Company
2401 UTAH AVENUE SOUTH
SEATTLE, WASHINGTON 98134
(206) 318-1575
CMA
Architect of Record
A-1001

EXHIBIT A


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1 OUTDOOR SEATING PLAN
SCALE: 1/4" = 1'-0"
PEDESTRIAN CIRCULATION
OUTDOOR SEATING
STARBUCKS
1744 SF
PEDESTRIAN CIRCULATION
LANDSCAPE PLANTING AREA
PEDESTRIAN CIRCULATION
SHEET NOTES
SITE LEGEND
STARBUCKS NET AREA
OUTDOOR SEATING AREA
PEDESTRIAN CIRCULATION
LANDSCAPE PLANTING AREA
PARKING REQUIREMENT
BUILDING AREA 1,744 SF
SEATING AREA 127 SF
TOTAL AREA 1,871 SF
1,871 SF / 70 =
26.73 PARKING SPACES
27 EXISTING PARKING SPACES
FURNITURE SCHEDULE - "F"
KEY QUANTITY DESCRIPTION REMARKS
Starbucks Coffee Company
2401 UTAH AVENUE SOUTH
SEATTLE, WASHINGTON 98134
(206) 318-1575
CMA architecture | planning | interior design
PERMIT SET
PROJECT NAME:
MIDWAY & BELTLINE
OUTDOOR SEATING
SUBMITTAL - FINAL
15099 MIDWAY RD
ADDISON, TX 75244
COUNTY:
DALLAS
OUTDOOR SEATING PLAN
I-1101

AI-1911 **12.**

Work Session and Regular Meeting

Meeting Date: 01/10/2017

Department: Infrastructure- Development Services

AGENDA CAPTION:

Hold A Public Hearing, Discuss And Consider Action On An **Ordinance Rezoning The Property Located At 5026 Addison Circle, On The South East Corner Of Addison Circle And Lewis Place, Which Is Currently Zoned, UC, Urban Center, By Amending An Existing Special Use Permit For A Restaurant And An Existing Special Use Permit For The Sale Of Alcoholic Beverages For On-Premises Consumption Only In Order To Approved A Revised Site Plan Including An Outdoor Patio, And To Approve A New Special Use Permit For The Sale Of Beer And Wine For Off-Premises Consumption**. Case 1749-SUP/Skinny Pizza.

BACKGROUND:

The Addison Planning and Zoning Commission, meeting in regular session on December 19, 2016, voted to recommend approval of an ordinance changing the zoning on property located at 5026 Addison Circle, which is currently zoned UC, Urban Center, by amending an existing Special Use Permit for a restaurant and an existing Special Use Permit for the sale of alcoholic beverages for on-premises consumption only in order to approve a revised site plan including an outdoor patio, and by approving a new Special Use Permit for the sale of beer and wine for off-premises consumption only, subject to the following condition:

- Should the license agreement for the use of the public right-of-way be terminated, then the site plan is automatically reduced to encompass only the area on private property. Should the license agreement for the use of the public right-of-way be adjusted to reduce the area available for private use, then the site plan is automatically adjusted to encompass the new licensed area. In either scenario, the patio furnishings shall be reduced accordingly as approved by the Town's Zoning Administrator.

Voting Aye: Ennis, Morgan, Robbins, Robinson, Schaeffer
Voting Nay: none
Abstained: Griggs
Absent: Smith

SPEAKERS AT THE PUBLIC HEARING:

For: Shannon Sear with Post Properties, 5040 Addison Circle
On: none
Against: none

Please refer to the attached staff report for additional information on the case.

RECOMMENDATION:
Administration recommends approval.

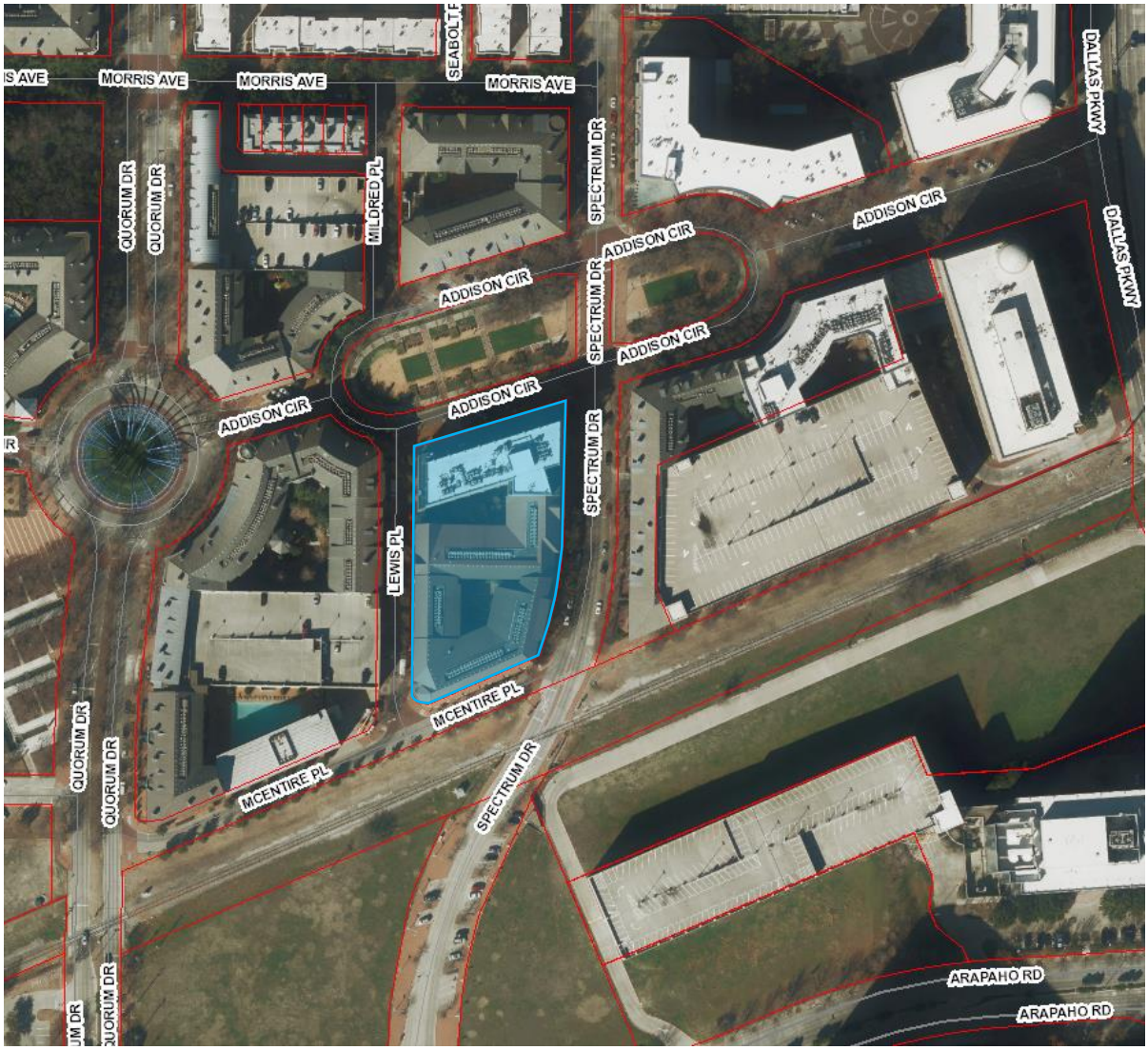
Attachments

1749-SUP Staff Report
1749-SUP Plans
1749-SUP Ordinance

1749-SUP

PUBLIC HEARING Case 1749-SUP/Skinny Pizza. Public hearing, discussion, and take action on a recommendation regarding an ordinance changing the zoning on property located at 5026 Addison Circle, which is currently zoned UC, Urban Center, by amending an existing Special Use Permit for a restaurant and an existing Special Use Permit for the sale of alcoholic beverages for on-premises consumption only in order to approve a revised site plan including an outdoor patio, and to approve a new Special Use Permit for the sale of beer and wine for off-premises consumption.

LOCATION MAP



December 15, 2016

STAFF REPORT

RE:	Case 1749-SUP/Skinny Pizza
LOCATION:	5026 Addison Circle
REQUEST:	Approval of an amendment to the existing Special Use Permit for a restaurant and Special Use Permit for the sale of alcoholic beverages for on-premises consumption only and approval of a new Special Use Permit for the sale of beer and wine for off-premises consumption.
APPLICANT:	Skinny Pizza, represented by Mr. Joseph Barkate

DISCUSSION:

Background: This address is for the 2,800 square foot space on the ground floor of the mixed-use building to the south of Beckert Park. This property is zoned UC, Urban Center. In 1999, the space was granted Special Use Permits for a restaurant and for the sale of alcoholic beverages for on-premises consumption. These SUPs were originally approved for Pastazio's Pizza, which closed last year. The current Special Use Permits do not allow for any outdoor seating, although the previous tenant did have some.

A new tenant, Skinny Pizza, is in the process of completing their finish out of the space. Skinny Pizza is a new concept based out of New York City focusing on thin-crusts and healthier toppings.

Proposed Plan: The new operator would like to formally request approval for outdoor seating. They are proposing that the existing SUPs be amended to allow for a 426 square foot patio with seating for 34. The majority of this patio, 349 square feet, would be placed within the public right-of-way and would be subject to a license agreement and the right-of-way usage policy adopted by the Town in 2015. The policy requires that a five-foot-wide sidewalk be maintained at all times and that the ADA accessible path not be obstructed. This has been achieved with the placement of furniture on the site plan. There is sufficient parking in Addison Circle to serve the additional square footage and meet code requirements.

Additionally, the applicant is requesting permission to sell beer and wine for off-premises consumption. This would allow them to sell beer and wine as part of their takeout and delivery offerings. This requires a separate Special Use Permit which is permissible in the Urban Center zoning district.

RECOMMENDATION: **APPROVAL WITH ONE CONDITION**

The area in front of the building is well suited for patio seating while still providing wide sidewalks and ADA accessible pathways. The addition of this patio will help add vibrancy to the street level in Addison Circle. Staff does not foresee any issues with granting permission to sell beer and wine for off-premises consumption in this location. Staff recommends approval of the requests subject to the following condition:

- Should the license agreement for the use of the public right-of-way be terminated, then the site plan is automatically reduced to encompass only the area on private property. Should the license agreement for the use of the public right-of-way be adjusted to reduce the area available for private use, then the site plan is automatically adjusted to encompass the new licensed area. In either scenario, the patio furnishings shall be reduced accordingly as approved by the Town's Zoning Administrator.

Case 1749-SUP/Skinny Pizza
December 19, 2016

COMMISSION FINDINGS:

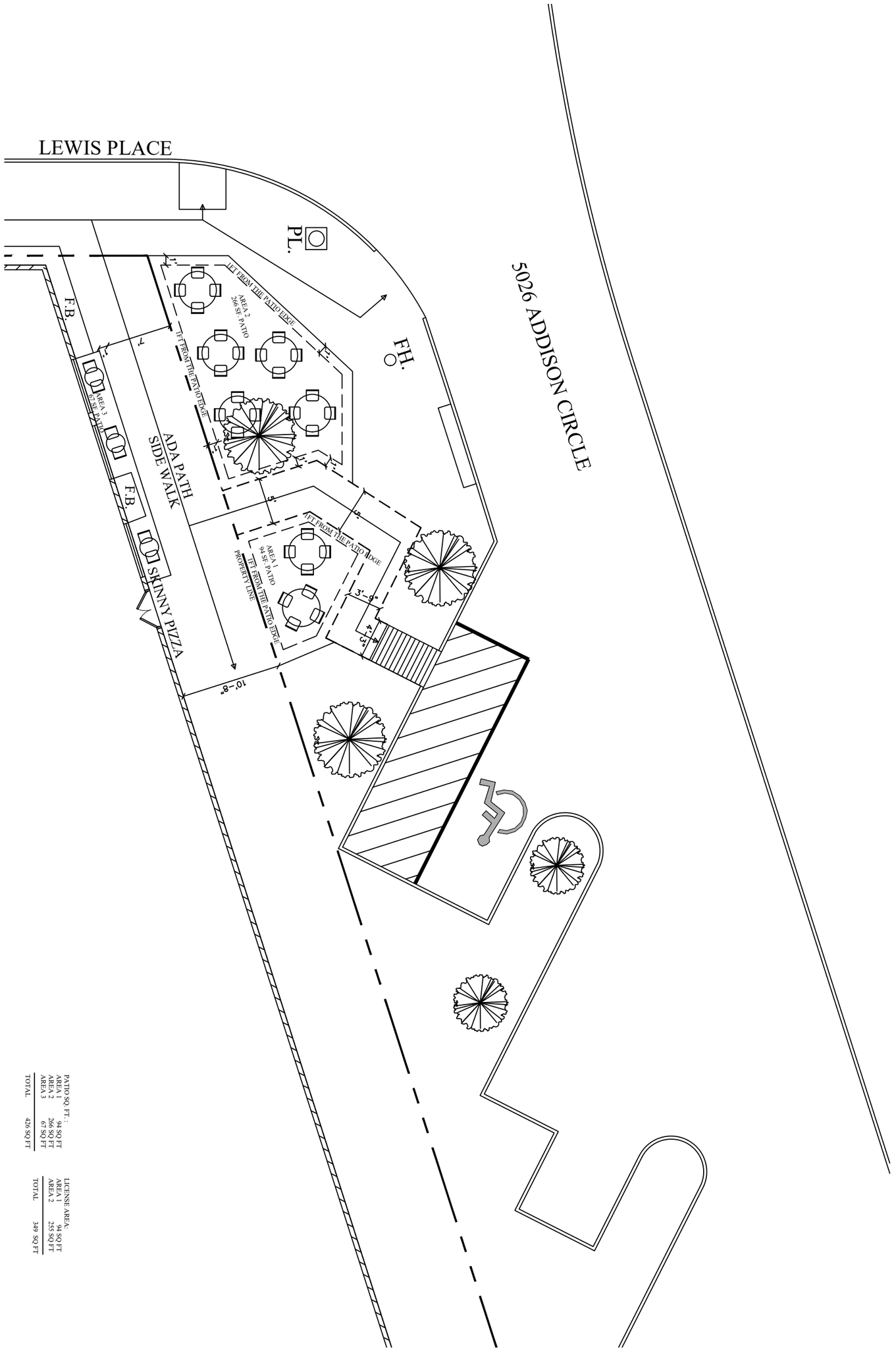
The Addison Planning and Zoning Commission, meeting in regular session on December 19, 2016, voted to recommend approval of an ordinance changing the zoning on property located at 5026 Addison Circle, which is currently zoned UC, Urban Center, by amending an existing Special Use Permit for a restaurant and an existing Special Use Permit for the sale of alcoholic beverages for on-premises consumption only in order to approve a revised site plan including an outdoor patio, and by approving a new Special Use Permit for the sale of beer and wine for off-premises consumption only, subject to the following condition:

- Should the license agreement for the use of the public right-of-way be terminated, then the site plan is automatically reduced to encompass only the area on private property. Should the license agreement for the use of the public right-of-way be adjusted to reduce the area available for private use, then the site plan is automatically adjusted to encompass the new licensed area. In either scenario, the patio furnishings shall be reduced accordingly as approved by the Town's Zoning Administrator.

Voting Aye: Ennis, Morgan, Robbins, Robinson, Schaeffer
Voting Nay: none
Abstained: Griggs
Absent: Smith

SPEAKERS AT THE PUBLIC HEARING:

For: Shannon Sear with Post Properties, 5040 Addison Circle
On: none
Against: none



SITE FLOOR PLAN

SCALE: 3/32" = 1'-0"

SHEET CONTENTS: **SITE PLAN** DATE: 08-25-2016 **I2.10**	5026 Addison Cir, Addison, TEXAS 75001		Drawn By: DFW AUTOCAD 15950 N. DALLAS PKWAY Dallas, TX 75248 ph: (214) 235-3713 fax: (815) 366-8014	ISSUE RECORD: DATE: ISSUE COMMENTS:

TOWN OF ADDISON, TEXAS

ORDINANCE NO. _____

AN ORDINANCE OF THE TOWN OF ADDISON, TEXAS, AMENDING ORDINANCE NO. O99-019, SO AS TO AMEND A SPECIAL USE PERMIT FOR A RESTAURANT AND A SPECIAL USE PERMINT FOR THE SALE OF ALCOHOLIC BEVERAGES FOR ON-PREMISES CONSUMPTION TO PROVIDE FOR AN OUTDOOR PATIO AREA, AND TO APPROVE A NEW SPECIAL USE PERMIT FOR THE SALE OF BEER AND WINE FOR OFF-PREMISES CONSUMPTION, ON PROPERTY LOCATED AT 5026 ADDISON CIRCLE; PROVIDING A PENALTY NOT TO EXCEED TWO THOUSAND AND NO/100 DOLLARS ($2,000.00); AND PROVIDING FOR SAVINGS, SEVERABILITY AND AN EFFECTIVE DATE.

WHEREAS, at its regular meeting held on December 19, 2016, the Planning & Zoning Commission considered and made recommendations on a request for a Site Plan Amendment to existing Special Use Permits and for a new Special Use Permit for the sale of beer and wine for off-premises consumption only. (Case No.1749-SUP); and

WHEREAS, this change of zoning is in accordance with the adopted Comprehensive Plan of the Town of Addison, as amended; and

WHEREAS, after due deliberations and consideration of the recommendation of the Planning and Zoning Commission, the information received at a public hearing, and other relevant information and materials, the City Council of the Town of Addison, Texas finds that this amendment promotes the general welfare and safety of this community.

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS:

Section 1. The recitals and findings set forth above are hereby found to be true and correct and incorporated as if fully set forth herein.

Section 2. That the Comprehensive Zoning Ordinance of the Town of Addison, Texas, is hereby amended by amending Ordinance O99-019, Section 2, to add an eleventh condition, to read as follows:

11. Should the license agreement for the use of the public right-of-way be terminated, then the site plan is automatically reduced to encompass only the area on private property. Should the license agreement for the use of the public right-of-way be adjusted to reduce the area available for private use, then the site plan is automatically adjusted to encompass the new licensed area. In either scenario, the patio furnishings shall be reduced accordingly as approved by the Town's Zoning Administrator.

Section 3. That the Comprehensive Zoning Ordinance of the Town of Addison, Texas, is hereby amended by amending Ordinance O99-019, to add Exhibit A as included in this ordinance.

Section 4. That a Special Use Permit authorizing the sale of beer and wine for off-premises consumption, on the property located at 5026 Addison Circle, is hereby granted.

Section 5. The provisions of the Town of Addison Code of Ordinances, as amended, shall remain in full force and effect save and except as amended by this ordinance.

Section 6. Any person, firm, corporation, or other business entity violating any of the provisions or terms of this Ordinance shall, in accordance with Article XXVIII (Penalty for Violation) of the Zoning Ordinance, be fined, upon conviction, in an amount of not more than Two Thousand and No/100 Dollars ($2,000.00), and a separate offense shall be deemed committed each day during or on which a violation occurs or continues.

Section 7. The provisions of this Ordinance are severable, and should any section, subsection, paragraph, sentence, phrase or word of this Ordinance, or application thereof to any person, firm, corporation or other business entity or any circumstance, be adjudged or held to be unconstitutional, illegal or invalid, the same shall not affect the validity of the remaining or other parts or portions of this Ordinance, and the City Council hereby declares that it would have passed such remaining parts or portions of this Ordinance despite such unconstitutionality, illegality, or invalidity, which remaining portions shall remain in full force and effect.

Section 8. All ordinances of the City in conflict with the provisions of this Ordinance be, and the same are hereby repealed, and all other ordinances of the City not in conflict with the provisions of this Ordinance shall remain in full force and effect.

Section 9. This Ordinance shall become effective from and after its passage and approval and after publication as may be required by law or by the City Charter or ordinance.

PASSED AND APPROVED BY THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS, on this the 10th day of January, 2017.

_____
Todd Meier, Mayor

ATTEST:

_____
Laura Bell, City Secretary

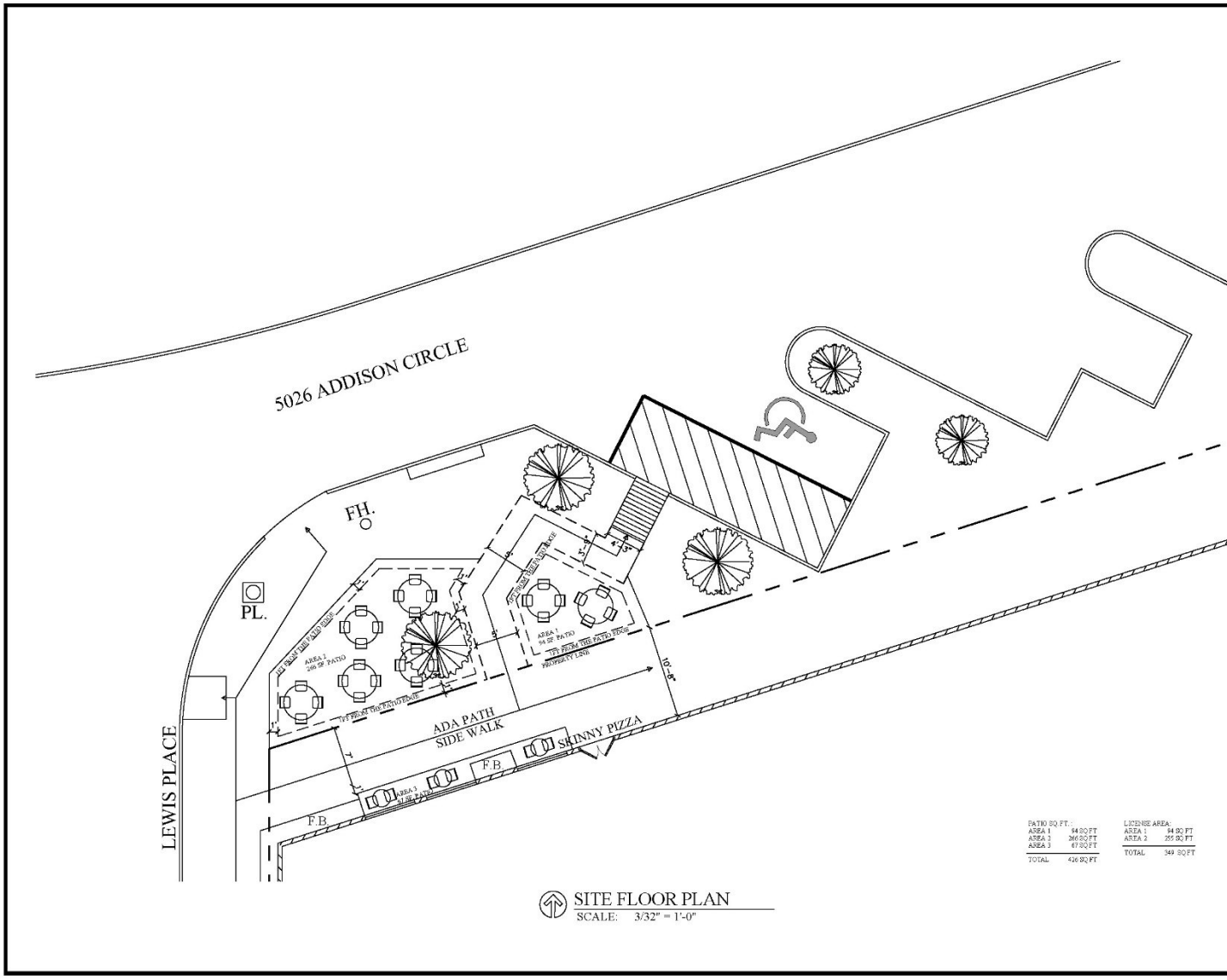
CASE NO: 1749-SUP/Skinny Pizza

APPROVED AS TO FORM:

_____

Brenda N. McDonald, City Attorney PUBLISHED ON: _____

EXHIBIT A



SITE FLOOR PLAN
SCALE: 3/32" = 1'-0"

AI-2032 **13.**

Work Session and Regular Meeting

Meeting Date: 01/10/2017

Department: Infrastructure- Development Services

AGENDA CAPTION:

Present, Discuss And Consider Action On A **Resolution Approving A License Agreement Between The Town And JFK Holdings, LLC D/B/A Skinny Pizza AC, And Authorizing The City Manager To Enter Into A License Agreement With Same Entity For The Use Of A Portion Of The Public Sidewalk Within The Public Right-Of-Way Adjacent To 5026 Addison Circle For An Outdoor Patio**.

BACKGROUND:

Skinny Pizza, located at 5026 Addison Circle, has requested permission to use a portion of the public right-of-way to accomodate an outdoor patio. The proposed area consists of two areas totaling 349 square feet. The Special Use Permit for this patio will be considered as a separate item on the January 10th City Council agenda.

In 2015, the City Council adopted a policy regarding the private use of the sidewalk within the public right-of-way in Addison Circle. This was intended to allow restaurants to utilize the sidewalk to expand their outdoor seating areas. The policy established by the City Council provides that they will consider approval of license agreements under certain conditions that are intended to ensure that the patio areas will not impede pedestrians.

Staff has reviewed the request and found it to be in compliance with the requirements of the policy. The license agreement document is included in the attached resolution as Exhibit A and has been agreed to by all parties.

RECOMMENDATION:

Administration recommends approval.

Attachments

Resolution

TOWN OF ADDISON, TEXAS

RESOLUTION NO. _____

A RESOLUTION OF THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS APPROVING A LICENSE AGREEMENT BETWEEN THE TOWN OF ADDISON AND JFK HOLDINGS, LLC D/B/A SKINNY PIZZA AC TO ALLOW USE OF THE RIGHT-OF-WAY FOR OUTDOOR PATIO SEATING, AUTHORIZING THE CITY MANAGER TO EXECUTE THE AGREEMENT, AND PROVIDING AN EFFECTIVE DATE.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE TOWN OF ADDISON, TEXAS:

Section 1. The License Agreement between the Town of Addison and JFK Holdings d/b/a Skinny Pizza AC, to allow use of the right-of-way for outdoor patio seating, a copy of which is attached to this Resolution as **Exhibit A,** is hereby approved. The City Manager is hereby authorized to execute the agreement.

Section 2. This Resolution shall take effect from and after its date of adoption.

PASSED AND APPROVED by the City Council of the Town of Addison, Texas this the 10th day of January, 2017.

_____
Todd Meier, Mayor

ATTEST:

By: _____
Laura Bell, City Secretary

APPROVED AS TO FORM:

By: _____
Brenda N. McDonald, City Attorney

EXHIBIT A

STATE OF TEXAS §
§ **LICENSE AGREEMENT**
COUNTY OF DALLAS §

This License Agreement is entered into this 10th day of January, 2017 by and between the Town of Addison, Texas (the "City") and JFK Holdings, LLC D/B/A Skinny Pizza AC (the "Operator").

RECITALS:

WHEREAS, the Town of Addison, Texas is a home rule city possessing the full power of local self-government pursuant to Article 11, Section 5 of the Texas Constitution, Section 51.072, Tex. Loc. Gov. Code, and its Home Rule Charter; and

WHEREAS, the City is authorized to control and regulate an encroachment or obstruction on a public street within the City (§ 311.001, Tex. Transp. Code) and to permit and prescribe the consideration and terms for the use of a portion of a City street or sidewalk for a private purpose if the use does not interfere with the public use of the street or sidewalk or create a dangerous condition on the street or sidewalk (§ 316.021, Tex. Transp. Code); and

WHEREAS, the parties hereto recognize and agree that the City's authority with respect to the public rights-of-way within the Property goes to the full width of the right-of-way and extends indefinitely upward or downward; and

WHEREAS, Operator desires to use a portion of the right-of-way adjacent to the restaurant, located at 5026 Addison Circle, for outdoor dining; and

WHEREAS, the City and Operator desire to enter into this License Agreement to permit Operator to utilize a portion of the public right-of-way for outdoor seating to serve the patrons of 5026 Addison Circle, provided that such complies with the Town's policy for use of the right-of-way in the Addison Circle District adopted by Resolution No. R015-038 on September 8, 2015; and

WHEREAS, the Addison Circle District is bounded by Airport Parkway to the North, Arapaho Road to the South, the Dallas Parkway to the East, and Addison Road to the West.

NOW, THEREFORE, for and in consideration of the Ten and No/100 Dollars ($10.00), the mutual covenants and obligations set forth herein, and other good and valuable consideration, the City and Operator do hereby agree as follows:

1. **Incorporation of premises.** The above and foregoing premises are true and correct and are incorporated herein and made a part hereof for all purposes.

2. **Grant of license.** The City does hereby grant to Operator a revocable license to occupy that portion of the right-of-way adjacent to Operator's restaurant located at 5026 Addison Circle and as shown on Exhibit A, attached hereto and incorporated herein (the "License Area").

EXHIBIT A

Operator shall occupy the License Area in full compliance at all times with all of the following conditions:

(a) Operator shall maintain the ADA accessible pathway adjacent to Operator's restaurant;
(b) No use of the right-of-way is permitted outside the License Area;
(c) Within the License Area, the Operator may place only moveable items that are not attached to the pavement. Examples of such items include: tables, chairs, planters, heaters, portable lights, umbrellas, etc. as permitted by Town ordinances;
(d) All items placed in the License Area shall be maintained in safe, neat and good physical condition; and
(e) Operator shall provide written notice, in accordance with Section 8(c), within 24 hours of Operator's observation of a defect in the pavement or any other condition in the License Area that might pose a danger or harm to the public or persons occupying or passing through the License Area. If such defect is the result of Operator's use of the License Area, Operator shall reimburse the City for the cost of repair.

3. Term/Fee. This license granted herein shall continue in force for a period of ten (10) years from the date of execution of this License Agreement, subject to termination as set forth in paragraph 7 hereof. The fee for the license granted herein shall be Five Hundred Dollars ($500.00) per year and shall be due and payable no later than January 31st of each calendar year. The initial fee of Five Hundred Dollars ($500.00) shall be due at the time of the execution of this agreement.

4. Non-exclusive license. This license is not exclusive, and is subject and subordinate to: (a) the right of the City to use the licensed area for any purpose; (b) any existing street utility, drainage or communication facility located in, on, under or upon Addison Circle; (c) all vested rights presently owned by any utility or communication company; (d) any existing license, lease, easement, or other interest heretofore granted by the City and (e) the terms and conditions of this License Agreement.

5. Insurance. Operator shall purchase and maintain during the term of this License Agreement commercial general liability insurance including personal injury liability, premises operations liability, and contractual liability, covering, but not limited to, the liability assumed under the indemnification provisions of this License Agreement, with limits of liability for bodily injury, death and property damage of not less than $1,000,000. Coverage must be on an "occurrence" basis.

Such insurance shall: (i) be issued by a carrier which is rated "A-1" or better by A.M. Best's Key Rating Guide and licensed to do business in the State of Texas, and (ii) name the City as an additional insured and contain a waiver of subrogation endorsement in favor of the City. Certified copies of all of such policies shall be delivered to the City upon the execution of this License Agreement; provided, however, that the City, in its sole discretion and in lieu of certified copies of such policies, may permit the delivery of certificates of insurance together with the declaration page of such policies, along with the endorsement naming the Owner as an additional insured. Each such policy shall provide that, at least 30 days prior to the cancellation, non-renewal or modification of the same, the Owner shall receive written notice of such cancellation, non-renewal or modification.

EXHIBIT A

The City reserves the right to review the insurance requirements contained herein and to adjust coverages and limits when deemed necessary and prudent by the City.

6. INDEMNITY. OPERATOR SHALL INDEMNIFY THE CITY, ITS OFFICIALS, OFFICERS, EMPLOYEES AND AGENTS AGAINST, AND HOLD THE CITY, ITS OFFICIALS, OFFICERS, EMPLOYEES AND AGENTS HARMLESS FROM, ANY AND ALL LIABILITY, ACTIONS, CAUSES OF ACTION, LAWSUITS, JUDGMENTS, CLAIMS, DAMAGES, COSTS OR FEES, INCLUDING REASONABLE ATTORNEY'S FEES AND COSTS OF DEFENSE, FOR ANY INJURY TO OR THE DEATH OF ANY PERSON OR DAMAGE TO OR DESTRUCTION OF ANY PROPERTY RESULTING FROM OR BASED UPON, IN WHOLE OR IN PART, ANY ACT OR OMISSION OF OPERATOR, ITS OFFICERS, EMPLOYEES AND AGENTS UNDER THIS LICENSE AGREEMENT AND ANY ACT OR OMISSION OF THE CITY, SPECIFICALLY INCLUDING THE CITY'S NEGLIGENCE. THE PROVISIONS OF THIS PARAGRAPH SHALL SURVIVE THE TERMINATION OF THIS LICENSE AGREEMENT.

7. Termination. This License may be terminated:

(a) By the City:

(i) in the event Operator fails to comply with any of the terms of this License Agreement within ten (10) days after receipt of notice by Operator from the City of such failure to comply; or

(ii) Operator discontinues or abandons the use of the public rights-of-way for the purposes set forth herein; or

(iii) upon thirty (30) days' written notice by the City to Operator;

(iv) at such time as Operator no longer operates the restaurant that is the subject of this License Agreement; or

(b) At any time by Operator upon thirty (30) days' written notice by Operator to the City.

8. Miscellaneous.

(a) Assignment. The rights, duties and responsibilities hereunder shall not be assigned, conveyed or otherwise transferred by Operator without the prior written consent of the City.

(b) Force Majeure. In the event either the City or Operator shall be delayed or hindered in or prevented from the performance of any act required hereunder by reason of fire, casualty, strikes, lockouts, labor trouble, inability to procure materials or supplies, failure of power, governmental authority, riots, insurrections, war or other reason of like nature, where such delay, hindrance or prevention of performance shall not be within the reasonable control of the party obligated to perform and not be avoidable by diligence, the party so delayed shall promptly give notice to the other party, and thereupon performance of such act shall be excused for such period of delay.

EXHIBIT A

(c) Notices. Any notice provided for herein shall be given by written instrument, personally delivered or sent by certified mail, return receipt requested, and addressed to:

To the City:	To Operator.:
Town of Addison, Texas P.O. Box 9010 Addison, Texas 75001 Attn: City Manager	JFK Holdings, LLC D/B/A Skinny Pizza AC 5026 Addison Circle Addison, TX 75001 Attn: Joe Barkate

(d) Governing Law; Venue. This License Agreement shall be construed under, and in accordance with, the laws of the State of Texas, and all obligations of the parties created by this License Agreement are performable in Dallas County, Texas. Venue for any action under this License Agreement shall be in Dallas County, Texas.

(e) Legal Construction. In case any one or more of the provisions contained in this Street License Agreement shall for any reason be held to be invalid, illegal, or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provision of the License Agreement, and this License Agreement shall be construed as if such invalid, illegal, or unenforceable provision had never been included in this License Agreement.

(f) Entire Agreement. This License Agreement represents the entire and integrated agreement between the City and Operator relative to Addison Circle Signs as described herein and supersedes all prior negotiations, representations and/or agreements, either written or oral.

(g) Amendment. This License may not be altered, waived, amended or extended except by an instrument in writing signed by the City and Operator.

(h) Authority to execute. The undersigned officers and/or agents of the parties hereto are the properly authorized officials and have the necessary authority to execute this License Agreement on behalf of the parties hereto, and each party hereby certifies to the other that any necessary resolutions or other act extending such authority have been duly passed and are now in full force and effect.

EXHIBIT A

EXECUTED at Dallas County, Texas on the day and year first written above.

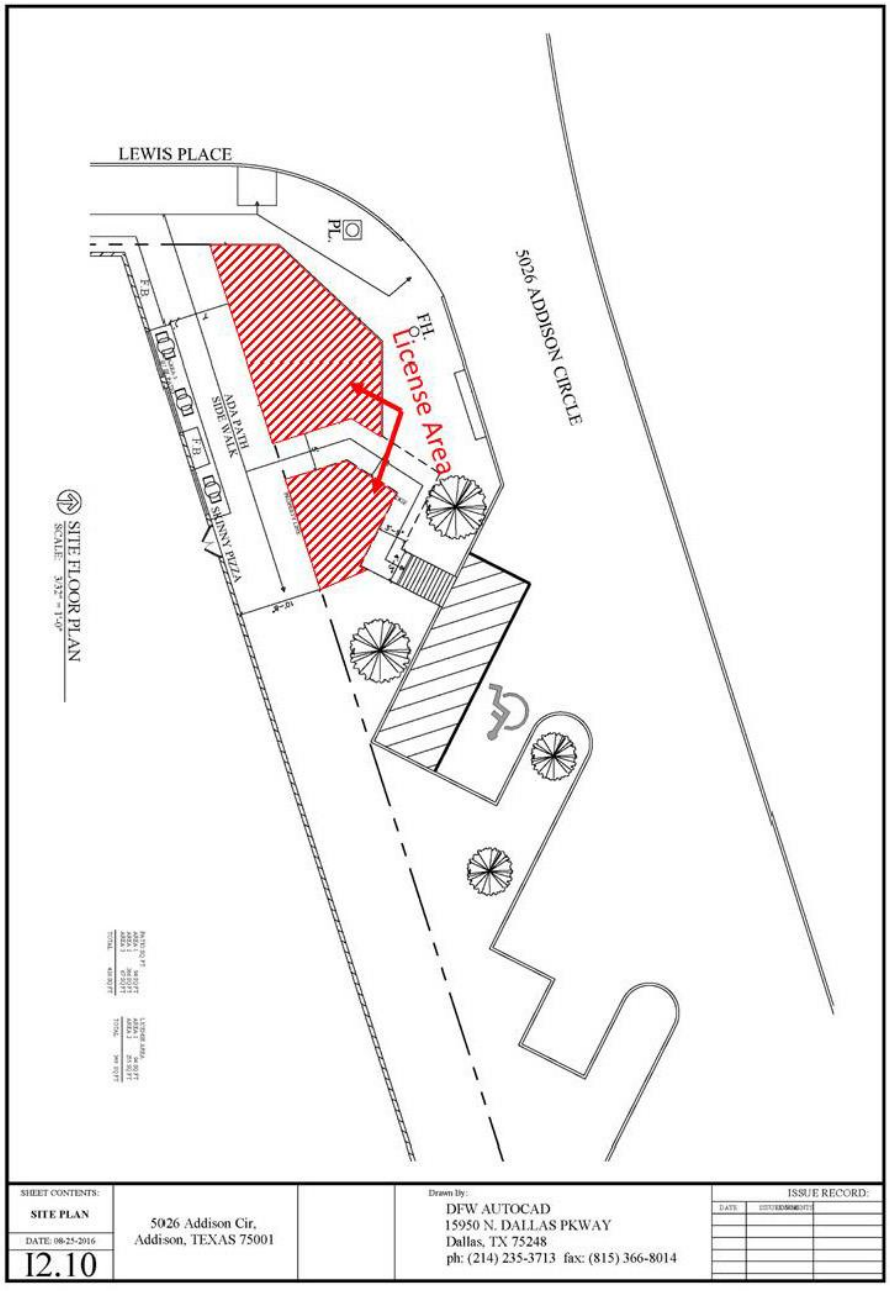
TOWN OF ADDISON, TEXAS	**JFK Holdings, LLC**
By:_____	By:_____
Wesley S. Pierson, City Manager	Joe Barkate, Managing Member

ATTEST:

_____
Laura Bell, City Secretary

EXHIBIT A

EXHIBIT A



AI-2024 **14.**

Work Session and Regular Meeting

Meeting Date: 01/10/2017

Department: City Manager

AGENDA CAPTION:

Present, Discuss And Consider Possible Action Regarding The **Role Of The City Council In The Consideration And/Or Approval Of Severance Agreements Between The Town Of Addison And Town Employees.**

BACKGROUND:

Mayor Todd Meier requested that the Addison City Council have a discussion about the Town's policy related to employee severance agreements.

The City Council appoints four employees:

- City Attorney
- City Manager
- City Secretary
- Municipal Court Judge

Severance arrangements with these appointed officials are typically the purview of the City Council.

General employees of the Town are under the supervision and authority of the City Manager as outlined in the Town Charter. Accordingly, severance arrangements with general employees are typically handled by the City Manager.

Mayor Meier would like to discuss what the City Council's role should be related to consideration and/or approval of severance agreements for employees.

RECOMMENDATION:

Provide policy direction to staff.
